





Med
A

THE JOURNAL

OF THE

American Medical Association

A MEDICAL JOURNAL CONTAINING THE

OFFICIAL RECORD OF THE PROCEEDINGS OF THE ASSOCIATION, AND THE PAPERS READ AT THE ANNUAL MEETING, IN THE SEVERAL SECTIONS, TOGETHER WITH THE

MEDICAL LITERATURE OF THE PERIOD

EDITED FOR THE ASSOCIATION UNDER THE DIRECTION OF THE BOARD OF TRUSTEES

BY

GEORGE H. SIMMONS, A.M., M.D.

VOLUME XXXIII

JULY — DECEMBER

1899

396638
36.9A1

CHICAGO
AMERICAN MEDICAL ASSOCIATION PRESS.

1899

"The American Medical Association, though formally accepting and publishing the reports of the various Standing Committees (and Sections), holds itself wholly irresponsible for the opinions, theories or criticisms therein contained, except otherwise decided by special resolution."—TRANSACTIONS, 1851.

R

15

A47

v 33

cop 2

OFFICERS OF THE AMERICAN MEDICAL ASSOCIATION

1899-1900

GENERAL OFFICERS

PRESIDENT—W. W. KEEN	Philadelphia.
FIRST VICE-PRESIDENT—CHARLES A. WHEATON	St. Paul.
SECOND VICE-PRESIDENT—E. D. FERGUSON	Troy, N. Y.
THIRD VICE-PRESIDENT—J. M. ALLEN	Liberty, Mo.
FOURTH VICE-PRESIDENT—WILLIAM D. MIDDLETON	Davenport, Iowa.
TREASURER—HENRY P. NEWMAN	100 Washington St., Chicago.
SECRETARY—GEORGE H. SIMMONS	61 Market St., Chicago.
ASSISTANT SECRETARY—J. A. JOY	Atlantic City, N. J.
LIBRARIAN—GEORGE W. WEBSTER	Chicago.
CHAIRMAN COM. OF ARRANGEMENTS—PHILIP MARVEL	Atlantic City, N. J.

BOARD OF TRUSTEES.

Joseph Eastman, 197 N. Delaware St., Indianapolis, 1900.
 J. T. Priestley, 707 E. Louis St., Des Moines, Iowa, 1900.
 Truman W. Miller, 100 State St., Chicago, 1900.
 Alonzo Garcelon, Lewiston, Maine (President), 1901.
 T. J. Happel, Trenton, Tenn., 1901.
 I. N. Love, 4661 Maryland Ave., St. Louis, 1901.
 E. E. Montgomery, 1715 Walnut St., Philadelphia, 1902.
 H. L. E. Johnson, 1400 L St. N.W., Washington, D. C., 1902.
 C.A. L. Reed, Seventh and Race Sts., Cincinnati, 1902.

JUDICIAL COUNCIL.

Term expires 1900: D. W. Crouse, Iowa; R. C. Moore, Nebraska; T. D. Crothers, Connecticut; G. B. Gillespie, Tennessee; W. T. Bishop, Pennsylvania; C. H. Hughes, Missouri; Ida J. Heiberger, District of Columbia. Term expires 1901: S. Bailey, Iowa; D. R. Brower, Illinois; N. S. Davis, Illinois; H. D. Didama, New York; D. Mason, Washington; F. T. Rogers, Rhode Island; Milo B. Ward, Missouri. Term expires 1902: J. D. Griffith, Kansas City, Mo.; P. H. Bailhache, Marine Hospital Service; J. E. Cook, Cleveland; J. P. Lewis, Topeka, Kan.; F. H. Wiggin, New York City; J. W. Irwin, Louisville; Walter Wynn, Washington, D. C.

SECTION OFFICERS

Officers of Section, 1899-1900.

Practice of Medicine—George Dock, Ann Arbor, Mich., Chairman; T. B. Fitcher, Baltimore, Secretary.
 Surgery and Anatomy—H. O. Walker, Detroit, Mich., Chairman; Ramon Gutiérrez, New York City, Secretary.
 Obstetrics and Diseases of Women—W. E. B. Davis, Birmingham, Ala., Chairman; F. F. Lawrence, Columbus, Ohio, Secretary.
 Materia Medica, Pharmacy and Therapeutics—Leon L. Solomon, Louisville, Ky., Chairman; J. W. Walnwright, New York City, Secretary.
 Ophthalmology—H. V. Würdemann, Milwaukee, Chairman; C. F. Clarke, Columbus, Ohio, Secretary.
 Laryngology and Otology—Christian R. Holmes, Cincinnati, Chairman; J. A. Stucky, Lexington, Ky., Secretary.
 Diseases of Children—Edwin Rosenthal, Philadelphia, Chairman; Louis Fischer, New York City, Chairman.
 Physiology and Dietetics—Elmer Lee, New York City, Chairman; R. Harvey Cook, Oxford, Ohio, Secretary.
 Neurology and Medical Jurisprudence—Hugh T. Patrick, Chicago, Chairman; F. S. Pearce, Philadelphia, Secretary.
 Cutaneous Medicine and Surgery—L. Duncan Bulkley, New York City, Chairman; R. R. Campbell, Chicago, Secretary.
 State Medicine—W. C. Woodward, Washington, D. C., Chairman; Armand Ravold, St. Louis, Secretary.
 Stomatology—M. H. Fletcher, Cincinnati, Chairman; Eugene S. Talbot, Chicago, Secretary.

General Business Committee, 1899-1900.

Practice of Medicine—J. H. Musser, Philadelphia; S. A. Fiske, Denver; Frank Billings, Chicago.
 Surgery and Anatomy—Reginald Sayre, New York City; W. L. Rodman, Philadelphia; W. J. Mayo, Rochester, Minn.
 Obstetrics and Diseases of Women—Milo B. Ward, Kansas City; Joseph Price, Philadelphia; A. H. Cordier, Kansas City.
 Materia Medica, Pharmacy and Therapeutics—T. H. Stucky, Louisville, Ky.; John V. Shoemaker, Philadelphia; Warren B. Hill, Milwaukee.
 Ophthalmology—G. E. de Schweinitz, Philadelphia; Harold Gifford, Omaha; Casey A. Wood, Chicago.
 Laryngology and Otology—William E. Casselberry, Chicago; B. Alexander Randall, Philadelphia; Emil Mayer, New York City.
 Diseases of Children—A. C. Cotton, Chicago; J. P. Crozer Griffith, Philadelphia; H. E. Tuley, Louisville, Ky.
 Physiology and Dietetics—A. P. Clarke, Cambridge, Mass.; Randall Hunt, Shreveport, La.; James Weir, Jr., Owensboro, Ky.
 Neurology and Medical Jurisprudence—W. J. Herdman, Ann Arbor, Mich.; Chas. H. Hughes, St. Louis; Frederick Peterson, New York City.
 Cutaneous Medicine and Surgery—A. Ravogll, Cincinnati; A. W. Bratton, Indianapolis; W. T. Corlett, Cleveland.
 State Medicine—Elmer Lee, New York City; Arthur R. Reynolds, Chicago.
 Stomatology—John S. Marshall, Chicago; A. E. Baldwin, Chicago; G. V. I. Brown, Milwaukee.
 Executive Council—W. J. Herdman, Ann Arbor, Mich., Chairman; W. T. Mayo, Rochester, Minn., Vice-Chairman; J. H. Musser, Philadelphia; H. E. Tuley, Louisville, Ky.

GENERAL INDEX.

*Use of the index will be facilitated by bearing in mind that subjects are frequently given under two or more headings, e. g., brain, cerebral, tumors, etc.; heart and cardiac; cirrhosis, liver and hepatic; child, children and infant; gland, thyroid, etc. Often, too, writers treat of the eye, ear, nose and throat under one head, etc., and the titles do not always permit of indexing under the several headings. The "General Index" contains only titles of articles, editorials, society reports, and miscellaneous matter appearing in the Journal, the book notices, deaths, discussions, authors, and titles of articles mentioned in the "Current Medical Literature" department being indexed and arranged under their separate headings instead of in the body of the "General Index." The * preceding the page reference in the "Index of Authors" indicates that the article appeared in full in the Journal. In the case of titles included in the Index of Titles, only those of articles given in abstract in the "Current Medical Literature" department from week to week appear also in the "General Index." Societies are indexed under Association, College, Conference, Congress and Society.*

- Abbott, E. H., breech presentation, 338
 Abdomen (see cancer, echinococcosis, operations).
 injury to without external wounds, 746
 gunshot wounds of, 1549
 Abdominal (see aorta, arthritis, colon, contusions, fat-necrosis, fibroma, fibrosarcoma, hernia, hysterectomy, incisions, injuries, lavage, operations, pain, palpitations, pregnancy, sections, surgery, sutures, tumors).
 exploration, 1605
 Aborigines, filaria in blood of, 98
 Abortion, artificial, and induced labor, 568
 Insanity from, 1413
 to prevent, 504
 with no vagina, 494
 Abrams, A., treatment of consumption, 915
 Abscesses (see brain, cerebellar, epiglottitis, liver, lung, sinus), cerebellar, 535
 double poas, 1602
 of paracarditis, 279
 hepatic, 276
 orbital, points in diagnosis, 1409
 otitic brain, 470
 peritonissilar, 343
 post-appendicial, 344
 prostatic, and urethritis, 1228
 tonsillar, abscesses following, 1187
 Abscesses, palmar, 474
 tonsillar, 971
 Abt, I. A., complications of diphtheria, 1190
 Academia de Med. of Brazil, 604
 Acad. of Med. and Surg. Sci., St. Louis, 1494
 of Med. and Surg., Topeka, 354
 918, 1560
 of Med., Cal., 161, 227, 414, 462, 732, 1101, 1425
 of Med., Chicago, 347, 415, 483, 606, 1167, 1226, 1489
 of Med., Cincinnati, 192, 794, 917, 1294, 1422, 1495
 of Med., Detroit, 983, 1040, 1362, 1617.
 of Med., Minn., 1040
 of Med., N. Y., 1292, 1355, 1422
 of Ky. Surg., Am., 604, 1041
 Accident, unusual, 1351
 Accutimid as substitute for drugs, 332
 habit, 33
 in ear supuration, 1033
 in typhoid, cases, 582
 poisoning, 32
 Acetoneuria and fatty acids, 160
 pathologic, 975
 Acetoneuria, 357
 Acid (see arsenious, boric, cacodylic, camphoric, carbolic, citraconic, citric, hydrochloric, lactic, osmic, oxybutyric, phenic, picric, sulphuric, etc.)
 Acetic fatty, acetoneuria and, 160
 Acne, iodid of potash in, 1285
 nature and treatment, 1412
 necrotic, 1607
 Acne, 494
 anesthetic in subconjunctival injections, 1210
 Acromioclavicular, 110
 Acromioclavicular, pathogenesis of, 674
 symptomatology of, 1418
 Acromioclavicular, 101, 343, 1035
 Act, Illinois Medical practice, 450
 medical practice, Ill., 1435
 Actinomycetes, examining pus for, 476
 Actinomycosis hominis, 1030, 1039
 Action, study of cumulative, 1288
 Adams, J. G., bovine tuberculosis, 621
 J. G., latent infection, etc., 1509, 1572
 Adams, E. P., gouty diathesis, 1585
 E. P., skin grafting, 102
 Addison's disease, 41
 Address, 93
 Am. Public Health Assn., 1223
 Cal. State Med. Soc., 21
 in laryngology, 307
 in neurology, 308
 in state medicine, 540
 Ky. State Med. Soc., 156
 of president, 418
 on medicine, 2
 on nasal disorders, 340
 on otitis, 340
 on recent war, 541
 on stomatology, 57
 on surgery, 243
 of surgeons, Canadian Med. Assn., 621
 Address, change of, 56, 176, 180, 242, 304, 320, 341, 478, 502, 624, 626, 750, 816, 874, 932, 996, 1056, 1118, 1184, 1244, 1312, 1380, 1444, 1508, 1568, 1636
 Adenasthenia gastrica, for, 901
 Adenitis, cervical tubercular, 1481
 tuberculous, 1090
 Adenocarcinoma (see nose).
 Adenoïd infections, hemorrhage after, 273
 Adenoïds (see infectious diseases, post-pharynx, tonsils).
 in adult, 541
 in ear diseases, 1577
 nasopharyngeal, treatment of, 1291
 results of operations for, 1039
 Adenoma of urethra, 2211
 Adenomas, rectal, 1650
 Adenomata, rectal, 38
 Adenomata of sexual apparatus, 863
 Adhesions, intestinal, in pelvic disease, 913
 in urethra, 1645
 Adult defect (see childhood), disease, relations of, 415, 416
 disease, school strain and, 485
 Adulteration of foodstuffs, 1562
 Advertising, medical, 660, 1179
 method of, 1311
 in interdict period, treatment of, 1653
 Aged, plea for, 1136
 pneumonia of, 458
 Aggritation by red corpuscles, 911
 Aikin, J. M., cerebral hemorrhage, 1464
 Air (see liquid), entrance into circulation, 1285
 in lungs, 152
 liquid, 276, 538
 superheated, in articular disease, 1621
 Albumin in urine, estimation of, 762
 Albuminuria (see hydrophobia, donkey), accidental or spurious, 764
 handicapping, influence of, 478
 in apparently healthy, 1651
 Albuminuria, functional, 113
 with lymphatic disposition, 1548
 Albumose peptone, 1481
 485
 Alcohol (see blindness, endometriosis, longevity, night sweats), amaurosis, methyl, 1653
 an antidote for carbolic acid, 424
 and legal responsibility, 747
 and misrepresentation, 1365
 as a beverage, 1235
 as a stimulant, 1164
 evils of, 1650
 food value of, 46
 in medicine, 341
 narcosis, 1652
 narcosis, theory of, 279
 tobacco and, 95
 Alcoholic (see neuritis, polyneuritis), pathology of, 534
 Aldrich, C. J., cerebrospinal meningitis, 42
 cord lesions, 1169
 T. E., chloroform, 777
 Alexander's operation, 804
 Alimentary canal in anemia, 975
 canal, wounds of, 730
 tract, and, anastomosis of, 969
 Alimentation, artificial, 411
 Alkalies, use of, 557
 Alkalinization, effects of, 747
 Alshen, J. B., growth of pylorus, 978
 J. E., pyroelectric, 1338
 Allen, D. P., exophary of bladder, 258, 337
 W. H., Sanitation in England, 1291
 S. E., Dyspnea from glands, 795
 S. E., Mastoid disease, 795
 F. S., Otitis media purulenta, 1143
 J. M., Diabetes mellitus, 1070
 Alliance of America, medical, 871
 Allison, C. C., Tubercular pelvic peritonitis, 24
 Alloxalic, 1596, 1621
 of jaw, 37
 Alloxalic bodies, method of determining, 60
 arentia, 788
 Allport, C., eyes of employees, 1528
 Altitude (see arteriosclerosis, blood, heart, hemoglobin, phthisis)
 Amaurosis from dynamite gases, 537
 methyl alcohol, 1653
 Amberg, E., Anatomy of temporal bone, 984
 Amherst, P., Serotherapy, 64
 Amblyopia, tobacco, 155
 toxic, 1157
 Amnion, rupture in disease, 971, 987
 dysenteric, liver abscess, 34
 Amenorrhœa with Raynaud's disease and tuberculosis, 728
 Letourneau, for, 1538
 American, development of, 611, 1368, 904
 Anemia, 904
 Amputated parts, not responsible for, 685
 Amputation by bands, 103
 of limb, in chronic, 76
 in ages, 795
 intrascapulo-thoracic, 784
 not found to have, 494
 Amputation, stumps, after treatment of, 1547
 technic for stumps after, 859
 tenotomy preliminary to, 340
 vs. excision of elbow, 1407
 Anacidity, gastric, hydrochloric acid in, 492
 Anastomosis, end-to-end, 1193
 forceps, 1649
 intestinal, invagination method of, 602
 Intestinal, LaFage forceps, 850
 intestinal, research in, 1163
 of bladder and rectum, 132
 ureteral, 306
 vesicorectal, 976
 Anatomy, visceral, study of, 1603
 Anchylostomiasis, 538
 Anders, J. M., gall-stone crepitus, J. M., pancreatic hemorrhage, 1391
 Andrew, A. H., tongue-depressor, 1242
 E. M., select use of words, 1237
 Anemia from toxic sera, 543
 headache from, 238
 pernicious, 152, 1575
 pernicious, etiology of, 1500, 1572
 pernicious, modifications in, 975
 secondary to malarial infection, 731
 serotherapy, 1335, 1336
 aplenic, diabetes and, 1641
 vascular changes after, 541
 Anesthesia, 1350
 and anesthetics, surgical, 1541
 blood examination in, 215
 by chloroform and ether, 670
 editorial oversight on, 489
 ether, preceded by morphia, etc., 87
 first exhibition of, 465
 infiltration, 684
 local, 786
 oxygen with ether for, 93
 surgical, 356
 surgical, apparatus for, 1441
 Anesthetics (see acolin, beta-cuculin, chloroform, chloroform, ether, kidneys, obstetric, paralytic, sickness), 1483
 administration of, 1542
 comparative safety of, 908
 how to give, 160
 Aneurysm (see aorta), electrolysis in, 1494
 of arch, 1543
 popliteal, 160, 918
 popliteal, extirpation of, 629
 vomiting due to, 1287
 Anesthesia, operative treatment of, 974
 Angina pectoris, 22
 pectoris, gravest, for, 781
 pectoris, treatment, 300
 Angiocholitis (see cholecystitis), Angioma, multiple cavernous, 470
 of larynx, treatment, 476
 of nose, enzymes for, 1146
 Angioplasty, 1284
 Anisotropia, high, management of, 1184
 Ankylosis of spine, chronic, 302
 of stapes, treatment, 412
 temporo-maxillary, excision for, 1666
 Ankylosis-ostitis, liver and spleen in, 793
 Anly, F. L., early conception, 1114
 Anonim, 1602
 Anthemon, the, 359

- Antihistaminic**, bacillus does not form
-als, 712
-bacillus, injections of, 1546
in Ontario, 1505
on man, 347
- Antiphlogistic**, in asylums, scheme
for, 345
- Antiphlogistic mixture**, 594
- Antipode** (see alcohol, num vom-
-ica, 727)
for gas, 1149
universal, 1117
- Antiseptic mixtures**, 655
- Antiseptics in fever**, 1292
- Antipyria** (see dysentery, intoxication)
- Antisepsis of mouth**, 1546
-technic and, 805
- Antisepsis**, intestinal, 1352
in cholera, 848
intestinal, in typhoid, 1159
Intestiprocic (see serum)
- Antitoxin** (see diphtheria, paral-
-ysis), 1158
in diphtheric laryngitis, 1114
in disease, 421
intracerebral injections in tetanus, 220, 221
origin of, 340
state and, 653
statistics, indication of, 1521
tetanus treated with, 342
treatment of diphtheria, 1004
- Antitoxic**, what are? 718
- Antivaccination delusion**, 1175
- Antivivisection**, 91
bill, concerning, 1615
in Congress, 1556
Antidiseases, 95
- Antrum, drainage-tube in**, 125
empyema of, 151
empyema of, age and sex in,
122
etiology and management,
empyema of, etiology and
etiology of, malignant etiology
of, 126
of Highmore, catarrh of, 1485
of Highmore, diseases of, 771
purulent accumulation in, 1201
Aorta, abdominal, elastic ligature
of, 872
aneurysm of, 968
aneurysm of, dissecting, 1287
aneurysm of, in situ, 1353
aneurysm of, head jerks, 911
- Aorticitis**, 217
abdominal, sign of, 1038
malaria, 345, 540
- Apathia and willis**, 1498
- Aphasia**, hysterical, 345, 361
-pneumonia (see poisoning)
- Apoplexy**, cause and prevention,
221
prephylaxis and management,
285
treatment of, 964
- Appendical**, of appendicular? 179
- Appendicitis**, leaving adherent, 117
- Appendicitis** (see gastrostomy,
peritonitis, 728, 853, 1354, 1041, 1042,
1414, 1479, 1481, 1544
and disease of ovary and tube,
192
cases at Angustana Hospital,
196
causes, prevention and treat-
-ment, 315
collateral consideration, 1493
country doctor and, 216
diagnosis and treatment, 311
diagnosis of, differential, 601
drainage in, 1161
features of, 978
gastrostomy stimulating, 1615
hernia following operations for,
111
in classic literature, 369
in Fuzland, rarity of, 369
in the tuberculous, 476
its great mortality, 1404
its etiology, 376
lymphatic count in, 852
medicinally treated, 978
pathogenesis of, 1415
suppurative, 918
theories, criticism of, 118
the term, 216
treatment, 216, 535
treatment of, 117, 1229
- Appendicular subjects**, future of,
928
- Appendix** (see calculus, berrina),
anomalous position, 481
drainage in surgery of, 1229
etiology to find, 275
hernia of, 1407
specimen of, 795
- Appendix**, anatomical, specimen, 1495
- Art. T. C.**, Animal extracts in
orthology, 225
of, 6
-blemoribea neonatorum,
225
- Art. T. C.**, hydrochloric acid to
-teatus, 225
- Armies**, venereal diseases in, 994
- Army** (see Oregan, teeth)
- Army and navy**, medical services of,
604
female nurses in, 1432
in medical department, 1496
medical department, legislation,
1506
medical organization in So.
-Africa, 1567
Medical Museum, 1377
medical news from Manila, 503
medical officers' services (see
-public service)
Medical School, 1377
medical services, improvements
in, 1438
medical tone, 1178
ration, 1442, 1507
the regular, 1378
transport, ptomain poisoning
op, 1634
- Arnold**, H. D., mitral murmurs,
302
J. P., sarcoma of mediastinum,
1612
- Arsenic** and respiratory inter-
-changes, 221
control of thyroid extract's ef-
-fects, 504
decomposition of, 1431
test for, 1219
- Arsenical** acid, see leucocya-
-tosis, yellow fever)
- Arterial pressure**, gauging, 239
- Arteriosclerosis**, high altitudes
and, 158
ocular manifestations of, 1234
retinal disturbances from, 361
- Artery**, femoral, destruction with-
-out loss of, 381
vertebral, injured by bullet,
1405
- Arthritis**, 501
of spine, 917
of, 1340
rheumatoid, 1340
rheumatoid, electricity in, 1480
rheumatic fever without, 867
rheumatoid, for, 1279
rheumatoid, of ear, 1411
rheumatoid, arthritis in, 346
Arthrocruralgia, 109
- Arthropathy**, multiple, 154
of elbows, 1417
- Articulations**, pelvic, mobility of,
663
- Ascabites** and nasal agnecia, 176
- Ascabsites** (see abscess, intestines)
perforation and abscess from,
279
- Ascites** in children, 561
surgical treatment, 222
- Asepsis**, 1064
of hands and patient, 446
Aseptic, 478, 483, 1285, 1285
- Ashby**, T. A., resection of ileum,
1191
- Ashmead**, A. S., beriberi, 1371
A. S., Foreigner in Japan, 1304
A. S., leper laws, 1113
A. S., locomotor ataxia and
-syphilis, 617
As others see us, 611, 1368
- Asphyxian** neonatorum, 1480
resuscitation, 117
traction of tongue in, 1287
- Aspirin**, 1351
Assignments (see Public Service)
- Aspirin**, 478, 483, 1285, 1285
- Associated Health Authorities**, 1505
- Association**, Alumni, of Univ. of
-Cal., 291
Am. Med., N. J. State Med. and
-Ont., 11
Am. Med., section on ophthal-
-mology, 1
Am. Med., section on practice
-of med., 2
Am. Med., section on stomatol-
-ogy, 57
Am. Neurological, 36
Am. Pharm., work of, 1644
Am. Public Health, 976, 1222
1290
Am. Temperance, 42
and Senn, 1108
British Med., 297, 355, 361,
410, 478, 495, 604, 664, 618
button, 676
Canadian Co. Med., 732, 1610
Canadian Med., 412, 497, 621,
639, 675, 681
Canadian Med. officers, 671
Cases Co. Med., 160
Chicago, 468
committee on legislation, 1287
Davies Co. Med., 1229
Detroit Med. and Libr., 796,
976, 984, 1040, 1236, 1245,
1425, 1617
- Association** for advancement of
-science, 1040
Fox River Valley Med., 1007,
1350
Hudson Co. Med., 1230
Hoffman Med., 1040
Huntington Co. Med., 478
Ind. Leg. Med., 36
Inter-Co. Med., 418
Internat. Scientific, 1098
Maritime Med., 664
Med. Soc. Ind., 732
Md. Public Health, 1553
Military Tract Med., 1164
Miss. Valley Med., 732, 793,
976, 1041, 1102
Miss. Val. Med. Jour., 55
New Haven Co. Med., 1164
News, 27, 116, 1027
N. J. Sanitary, 1610
N. Y. Co. Med., 163, 1293, 1491
N. Y. State Med., 860, 1164
N. Yorkshire Med., 976
Northwest Arkansas Med., 1041
of Colored Phys. and Surg.,
1008
of Greater N. Y., Med., 1040
of Military Surg. of U. S., 912
of Obstet. and Gyn., Am., 416,
509, 860, 912, 979, 1043
of Railway Surg., 732
of Ry. Surg., Iowa, 1097
of Ry. Surg., N. Y. State, 1418
of urology, French, 1365
Okla. Med., 1489
Ontario Med., 478
Physic's and Med. and the, 495
Rocky Mt. Inter-State Med.,
413, 481
Rocky Mt. Valley Med., 478
St. Louis Med. Lib. 37
So. Med. College, 1610
So. Mich. Med., 478
So. Surg. and Gyn., 1548, 1614
Tri-State Med., 38, 1164, 1419
Vermillion Co. Med., 1365
Wabasha Co. Med., 347
Western Surg. and Gyn., 1617
Wyoming Med., 1040
- Astheno**, headache and, 343
- Asthma** (see ataxia, eczema),
471
astropia in bronchial, 654
cardiac, truss for, 911
ethereal reaction and, 1285
hay, for, 288
nasal disease and, 1351
nasal lesion in, 1160
quinin in, 424
Astigmatism after cataract ex-
-traction, 1387
importance of, 1413
very high, 1471
- Astragalus**, fracture of, 1093
Bismarck Inquiry, 1246
- Ataxia**, Friedrich's 1104
Friedrich's, hereditary, case,
344
- Atrophosis** and muscular atrophy,
903
- Athletics** and genito-urinary or-
-gans, 785
- Atlanta** notes, 1659
- Atmospheric pressure** on bladder,
1515
- Atropin** for asthma, 1409
Atropin (see asthma, epilepsy,
-injections),
-intoxication, glycosuria in, 346
Attitude in children, 892
- Aural affections**, traumatic, 302
- Aural and eye troubles**, 1203
- Australia**, 1246
- Austin**, D. P., vaccination, 1293
- Authors name** indexed in origi-
-nal, for Sept. 2, 9
Autoinfection and eye diseases,
1230
- Autointoxication**, 154
and blood chemistry, 482
and epilepsy, 757
- Autopsy**, proper subject of, 117
facts and theories, 281
- Ayres**, S. C., case of exophthal-
-mos, 917
S. C., cyat of iris, 1249
- BACILLUS** (see anthrax, colic,
diphtheria, ieterides, hepat-
-ic Klebs-Loeffler, rabies, san-
-guis, typhoid),
anthracis, identification, 466
colic, gases from, 158
grass, 619
in grasses and a fungus, 100
in ieterides in yellow fever, 537
new spore-producing, 215
pyococcus chloris, 278
typhoid, 1246
typhoid, study of, 1290
tuberculosis, biology of, 1497
- Backeke**, 1413
Bacillus, S. C., entomol aspects of
-childhood, 347
- Bacon**, J. B., childhood and adult
-defect, 608
J. B., strictures of rectum, 717
- Bacteria** in anesthetic operations,
223
in streets, 1243
- Bacteriologic research**, effects on
-surgery, 299
- Bacteriology**, 355
and antiseptics, 465
in high schools, 305
of conductivity, 841
- Bacterium coli**, infection by, 482
- Bacteriuria**, 1418
- Bailey**, W. R., vaccination, 1291
- Baker**, A. R., both eyes lost, 1252
H. B., notification of tubercu-
-losis, 742
- Baldness**, a novel theory of, 1596,
1621
- Baldwin**, A. E., childhood and
-adult defect, etc., 607
J. E. A. M. A. Clinics, 468
J. F., kidney cysts, 860
- Ballenby**, J. W., morbid states
of new-born, 1243
- Baltimore** notes, 55, 1180, 1240,
1306, 1374, 1430, 1503, 1500,
1625, 1626
- Bartholin's** influence on albumin-
-uria, 478
- Bartoo**, G. G., conservative gyn-
-ecology, 1246
- Barbarism**, recrudescence of, 293
- Barbar**, J. H., improved switch-
-board, 1424
- Barre**, J. E., consumptive, 1021
- Barber shop**, sanitary regulation,
125
- Barnes**, C. E., unique case, 467
Ida C., cancer of stomach, 361
Ida C., diphtheria, 1361
- Barnes**, J. E., consumptive, 1021
- Barton**, R. W., new spirit, 1421
- Baruch**, S., febrile disorders, 1292
- Basewood's disease** and myxedema,
1038
- Bases**, sulphuric acid in, 594
- Basset**, Mary E., pelvic diseases
and insanity, 827
- Bath** (see delirium tremens, in-
-sanity, mercurial, scarlatina,
-smallpox)
- Baths** and blood pressure, 24
hot, in malarial complications,
482
influence on corpses, 280
public, 1561
- Battle**, mortle, new form, 427
- "Battle of the Clubs"**, 107
- Baum**, W. L., dermatomastitis,
1021
- W. L., utropin**, 1167
- Baxter**, W. E., skeleton calendars,
1636
- Beach**, W. M., complications from
-rectal operations, 632
W. M., rectal adenomata, 38
- Beard**, C. H., arteriosclerosis,
1234
R. O., tuberculosis, 1291
- Beck**, C., cholelithiasis, 1293
Beck, C., epidididitis, criti-
-cism of, 118
- Bedroom** and bedstead, hygiene
of, 94
- Bedry**, J. K., uroprieties, 896
- Bell**, G. S., febris fara, 1493
- Bell**, J. W., plea for, aged, 1186
J., stomach-tube and douche,
494
- Belladonna** (see bronchopneu-
-monia)
- Bell's**, purpura of, 1439
- Belt**, C., purpura hemorrhagica,
1294
- Benedict**, A. L., revision of phar-
-macopeia, 1134
- Bennett**, A. L., school of tropical
-medicine, 213
- Benton**, J. E., double fetus mon-
-strosity, 131
- Benzeno**, toxic action of, 35
- Berber**, 807, 808
blood in, 475
on water, 1871
- Beta-nucin**, 1062
as anesthetic, 577
- Bettman**, H. W., dilatation of
-stomach, 1259
- Betts**, J. E., blood hng, 413
- Beran**, A. D., medicine and the
-public, 39
- Berger**, A. D., operation for un-
-desecrated testicle, 773
- Bibliography**, medical, 362, 987
of neurology and psychi-
-atry, 1021
- Bichord** bats in smallpox, 1412
- Bicycling** and heart disease, 157
mechanics and physiology of,
76
urine and, 172

- 43iddle, A. P., mycosis fungoides, 1230
 Herring, W. L., a pathologic development, 1064
 Biggs, H. M., typhoid fever, 1165
 Bile-duct, congenital obliteration of, 537
 Blythe, G., 1217
 drainage of, 1243
 surgical anatomy of, 215
 Hb., bacteriologic relations of, 1174
 in Graves' disease, administration by catheter, 477
 Biliary (see calculi, colic, hemorrhage, liver, peritonitis).
 Billings (see Dent's), 1653
 antiseptic, in Congress, 1556
 doctors', late payment of, 1576
 Spooner, 618
 Billings, F., Headaches of gastro-intestinal disorders, 760
 P., practice of medicine, 2
 Bilia for army medical increase, 1506
 Bingham, G. A., spina bifida, 1495
 M., ligature, 1166
 Biology from vitalistic standpoint, relation to medicine, 222
 Birth-rate in U. S., is it decreasing? 554
 Bishop, L. F., use of acetanilid, 607
 Biss, 848
 Black, C. E., transportation of typhoid, 1636
 G. M., ocular prosthesis, 481
 P., attention to eye, 1613
 Blackburn, A. E., carcinoma, 1362
 Blackmailing, 149
 Blackwater fever, 860
 Bladder and rectum, anastomosis of, 132
 atmospheric pressure on, 1515
 catheter, of, menstruation and, 1515
 drainage by catheter, 787
 exophy of, 256, 258, 337, 260
 extrophy of, implantation of ureters in rectum in, 669
 force, wounds of, 646
 infection, uteropia in, 237
 irrigation of, 412
 use of, 669
 tumors of, surgery for, 1633
 triple, 346
 ureter grafted to, 1278
 Blaine, J. M., diet, 288
 Blastomycetes and cancer, 1428
 Blech, G. M., surgical treatment of hemorrhoids, 977
 Bleeding, internal, 1297
 Bleomorphs neonatorum, preparation, 225
 Blepharitis due to demodex follicularium, 225
 Blind, congress on behalf of, 412
 training of, 32
 Blindness from methyl alcohol, 969
 hysterical, 788
 molecular, 539
 ophthalmia neonatorum and, 1566
 quinin, 904
 Blood, alkalinity of, 151
 bacteria in, 1513
 changes and altitude, 341
 collection, of, 217
 corpuscles, degeneration of, 1650
 corpuscles in renal disease, 432
 count, altitude and, 612
 cultures in septicemia, 851
 diabetic, test, 160
 in malaria bacillus in, 975
 examination, 965
 examination in anesthesia, 215
 examination in surgical disease, 480
 examinations, 219, 275, 277
 examinations in camp fever, 144
 from clothing, to remove, 734
 glycoelectric function of liver and, 976
 heart, in pneumonia, 907
 in beriberi, 479
 in erysipelas, 279
 in pneumonia, 438
 lavage of, 1054
 microbes in, 412
 morphology, auto-toxication of, 483
 morphologic changes in, 280
 of diabetics, reaction in, 1547
 of whites of eyes, 928
 pressure, baths, massage, etc., on, 34
 Blood spitting in tuberculosis, 222
 spina and tissues, granules in, 1064
 staining method for, 477
 states and pelvic conditions of, 906
 renal insufficiency tested by, 116
 Blume, F., intestinal adhesions, 918
 Board of health, first, 527
 of health, national, 337
 of health, Penn., 253
 Boarding-house equipments, 95
 Bords, should physicians give? 1365
 Bone and joint disease, 1159
 tumors of, 1363
 Bonfield, C. L., abdominal section, 1265
 Boody, E., typhoid in hospital for insane, 573
 Boogher, J. L., prostatic examination, 978
 Book notices, 156, 175, 301, 426, 619, 682, 744, 992, 1182, 1241, 1307, 1410, 1565, 1631
 (see separately).
 Borna and nutrition, 303
 Boric acid, (see thrush).
 acid in milk, 1416
 instrument for prostate, 481
 operation, 542
 operation, observations on, 15
 Bower, J. W., fibrosarcoma of abdominal wall, 820
 Bougies in earache, 472
 Bovine, J. W., intestinal obstruction, 978
 J. W., suspensio-uteri ligament, 268
 J. W., ureterectomy, 1548
 Bowel, resection of, 1193
 troubles in adults, 41
 Bowers, W. C., artificial abortion, 106
 Bracken, H. M., forests and health, 1222
 H. M., National board of health, 337
 Bradbury, J. B., place of pharmacology, 478
 Brain (see insane, surgery, tumors).
 and other abscesses, 1187
 abscesses, nasal cavities and, 94
 diseases, 82
 injury, of, 659
 matter in tarantulas, injections of, 280
 of forehead Parrot, 681
 piece of wood in, 341
 sections, hardening of, 791
 substance, tetanus cured by, 347
 toxin injections into, 385
 tumor, 281, 282
 weight and intelligence, 486
 Brand treatment, 1284
 Breast (see cancer).
 cataphoric treatment of carcinoma of, 479
 excision, after-histery, 278
 polyarctic disease of, 1230
 Bronchitis, 472
 Breasts, hypertrophy of, 1217
 Breast presentation, 338
 Bremer test in diabetes, 159
 Brigham, F. L., eclampsia, 1225
 Bright's disease, 600
 disease from pregnancy, 405
 disease, etiology of, 1540
 Brismest force, accidents after, 35
 British medical corps, 1443
 Brokaw, W. F., electricity and catarrh, 1358
 Bronchitis acuta, 473
 in, 1414
 elixir for, 1538
 cosinophilous, 708
 influenza with, 1086
 membranous, obtuse, 1652
 plastic or croup, 278
 subacute or chronic, for, 300
 Bronchopneumonia in children, 30, 31, 1409
 infantile, haldonna in, 786
 treatment of, 1230
 Bronchus, foreign body in, 350
 Brooks, L. J., subnormal temperature, 1225
 Brower, D. H., chlorid of gold and sodium, 1234
 D. R., Hawaiian Islands, etc.
 Brown, G. S., lithopaxy, 1615
 G. V. I., section on stomachology, 57
 M. Tarcuia, 794
 M. A., coloboplia, 1230
 M. A., malaria, 102
 M. A., malarial hemoglobinuria, 400
 P. K., tubes, 732
 Bruyere, J., medicine, 462, 523
 Brun, H., cancer of ovaries, 734
 Brush, E. C., acetanilid in typhoid fever, 1164
 E. C., surgery and iodoforn, 1526
 Bryan, F. P., surgical tolerance, 104
 J. H., diseases of eye, 1197
 Bryant, J. D., influence of practice, 1161
 Bryce, P. H., infectious diseases, 1290
 Bubo, suppurating, treatment of, 1021
 Bullet injury, peculiar, 441
 wounds of intestines, 156
 Bullock, 106
 Ballet, W. W., suprarenal extract in surgery, 481
 Balkley, D., uses of hydrogen peroxide, 1308
 Bullitt, J. B., ovarian tumors, 1041
 Hunt, E. E., removal of hairy nevus, 1553
 F. E., varicose ulcers, 1169
 Burn treated by saline injections, 1537
 Burnett, C. H., otitis without pain, 1550
 B., testicular mumps, 1114
 Burellum, G. H., specific iritis, 622
 Burns and scalds, 30
 local treatment, 366
 gaitalon on, 1477
 of third degree, pepsin in, 655
 plicic acid in, 1408
 treatment of, 655
 W. B., malaria, 1042
 W. B., mosquito and malaria, 1461
 Bursa gastrocnemio-semimembranosa, luffammation of, 215
 Butler, G. F., maternal drug-taking, 45
 G. F., vegetable neurotics, 1256
 W. J., childhood and adult deafness, 436
 Butter, renovated, 1392
 Button (see ASSOCIATION, Murphy).
 Butts, ASSOCIATION, 809
 Byford, H. T., intestinal treatment, 641
 Cacexyia, malarial for, 654
 Cacoecia, surgery of, 1614
 of sodium, 99
 Cadavers, method of preserving, 1695
 Caglieri, Dr. hydronephrosis, 1101
 G., syphilis, 161
 Calculi, biliary, 750, 1311
 weight and intelligence, 486
 bronchial, 434, 498
 intestinal obstruction from, 978
 biliary, 978
 renal, x-rays and, 470
 valvular stoppage by, 477
 vesical, in children, 1420
 Calculus in lung, 1379
 of ureter or appendix, 601
 Caldwell, C. E., osteomyelitis, 1230
 Calentura, 548
 California asylum trouble, 613
 medical depart. Univ. of, 1112
 practice in, 929
 quarantine, suggested, 921
 Calome' (see also elephantiasis, lunacy).
 in diptheria, 277
 Cameron, J. H., address, 621
 Camp fever, blood examination in, 1252
 Camphor, therapeutics of, 366
 Camphoric acid (see night-sweats).
 Camps, excursions, 1379
 garbage and excreta in, 1291
 typhoid in, 407
 Canada letter, 497, 560, 618, 681, 745
 1192, 1229, 1292, 992, 1114, 1179, 1240, 1306, 1274, 1438, 1503, 1562, 1626
 Cancer (see blastomycetes, carcinoma, glands, lips, ovaries, pylorus, rectum, serum, stomach, testis, uterus).
 cataphoric treatment of, 626
 cattle and, 1107
 Cancer, solid, of abdomen, 1035
 cutaneous, 1264
 early diagnosis of, 1092
 electricity for, 1650
 etiology of, 1291
 formaldehyde in, 1271
 gastric, 885
 incidence of, 1544
 increase of, 909
 laboratory, 1027
 medical statistics of, 87
 surgical, treatment of, 88
 modern view of, 1544
 statistics of, 476
 of breast, dissemination of, 97
 of stomach, 405, 536
 primary, multiple, 911
 statistics, histology, 1225
 statistics, N. Y., 1300
 treatment of, 45, 999
 treated by its own toxins, 1657
 uterine, 855
 uterine operation in, 32
 uterine prophylaxis of, 567
 uterine, treatment of, 1162
 Cancerum oris with iodometer, 1044
 candle-flame experiment, 73
 Cantharis indica, 659
 cantharidin, pharmacology, 1416
 Cantharides, emulsion, operation for, 904
 Capsule for gastric juice, 214
 Carcinoma, treatment of, 419
 Caput obtusum musculare, 153
 Carbolio acid (see alcohol, injections, mastoid, tetanus), 1482
 salt, 1505
 Carcinoma (see breast, cancer, diophenum, fibromyoma, lung, ovary, sigmoid, 790
 and sarcoma, diagnosis, 1546
 and tuberculosis, 151
 of ear, 1441
 of esophagus, 95
 of uterus, 414
 rectal, 907
 rectal operation for, 473
 study of, 1047
 under 30 years, 1218
 Cardiac (see asthma, dropsy, electric, infirmity, pneumonia, pleurisy, muscle).
 asthma of pneumonia, 30
 disturbances, gastro-intestinal, 137
 injury, 275
 Cardiac-esophageal gush and click, 1044
 Caries, periosteal, from bacteria, 585
 spinal deformity from, 1282
 Carotid, ligature of in exophthalmos, 239
 Carpenter, F. B., cancer of stomach, 1044
 Julia W., vaccination, 835
 Carr, W. L., scurvy in infant, 1292
 Carzon, A. J., artery injured by bullet, 1495
 Carstens, J. H., hysterectomy, 1044
 Cartledge, A. M., tumor of iliac vein, 1548
 Cases, surgical, some interesting, 257
 two unusual, 658
 Casts, hyaline, 55
 of mucus, visceral, formation of, 1105
 preservation of, 1218
 renal, 1093
 Cataplexy in trachoma, 210
 Cataphoric (see breast, cancer).
 Cataract, 1033
 eye following dissection of, 1249
 extraction, astigmatism after, 1587
 extraction, Kalt suture in, 30
 extraction without iridectomy, 911
 formation, lens and, 1325
 hemorrhage after removal, 35
 iridectomy in, 1542
 senile, extraction with loss of eye, 1252
 Catarhal (see simulantia).
 affections, electricity in, 1217
 diseases, early recognition of, 787
 Catarrh, bronchial, influenza with, 1086
 electric currents in, 1358
 ethmoid bone and, 1604
 following measles and whooping cough, 782
 intestinal, astringents in, 855
 nasal, prevention of, 904
 of nostril of Highmore, 1485
 of middle ear, 1044
 of stomach, sodium sulphate in, 557

- Catarrh, vulvovaginal, 1542
 Catgut, 155
 Cauterization of with alcohol, 1661
 Cathereterism, urethral, 1293
 Cattle slaughtering, 53
 Cautery—electric, and transillumination lamp, 125
 Cecum, torsion of, 36
 Celluloma (see hemorrhage), 474
 cases, after treatment of, 454
 fecal vomiting after, 94
 for typhoid complications, 93
 vaginal, 342, 372
 Cerebral, in pelvic diseases, 408
 Cells, pathology of the, 859
 Cells, action of on phenol and indol, 1106
 action on phenol and indol, 851
 eosinophilous, 1417, 1552
 eosinophilous, origin in aptum, 864
 functional control, weight and number, 559
 glandular, mucoid transformation of, 410
 Cemetery for pests, 872
 Cent of oculomotor innervation, 1219
 Cerebellar abscess, cases, 1185
 localization, 162
 Central diplopia, etiology of, 1656
 Cerebrospinal (see meningitis pressure).
 fever, Cavendish lecture on, 98
 fluid, 5 weeks of discharge of, 1163
 Cerebrum, inhibitory action of, 147
 Cervix, high amputation of, 1158
 Cesarean (see section)
 sections, embryotomy and, 224
 section from myoma, 160
 Charities, combination of, 1562, 1626
 Chambers, G., microscopic demonstration, 1104
 T. R., enzyme in treatment, 148
 Chance, epithelioma on, 1442
 soft, reproduction of, 1417
 Charciform, amygdalitis, 341
 Chan, C. S., sanitary organization, 1291
 Charlatanism, suggestion and, 152
 Chapman, H. W., disposal of dead, 501
 Charity, public, reform of, 1442
 Charles, J. J., advances in physiology, 54
 Chase, W. K., intrapleural adhesions, 1645
 Chemistry, synthetic, 1399
 Chest disorders, X-ray in, 855
 ganahot wounds of, 599
 in phthisis, 1286
 Chicago, (see influenza),
 notes, 1181, 1241, 1306, 1373,
 1437, 1503, 1561, 1625
 sanitary training, 541
 sanitation measures, 172
 Chicken-pox, 1361
 uxorialis pigmentosa following, 1222
 Child (see peritonitis)
 and children's diseases, evolution of, 1700
 gangrene in, 170
 homicide legalized, 187
 737
 rings at stomach, 175
 Childhood (see epilepsy, fracture, pleuritis, rhinitis, tuberculosis, and adult disease, 416
 antenatal aspects of, 347
 gastric diseases in, 1021
 in relation to adult disease, 348
 relation of to adult defect, etc., 606, 607, 608
 Children, cardiac inflammation in, 1602
 speech in, defective, 1550
 Children (see allitoid, bronche pneumonia, rheum, convulsions, enterocolitis, feeding, glands, hernia, hysteria, infectious diseases, nervous pneumonia, quinlin, rhino pharyngitis, typhoid).
 blind, training of, 32
 bronchopneumonia in, 30, 31
 care of, 32, 1436
 diarrheal pneumonia of, 173
 development of, 1310
 diseases of, 404
 examining eyes of, 42
 malaria in, 156
 mental disability of, 534
 malarial in, 724, 780
 malarial in, atypical, 785
 malarial complications in, 32
 medical inspection of, 32
 pneumonia in, 300, 342
 Children, sore mouth in, 447
 summer complaints in, 217
 tuberculous process in, 96
 typhoid in, 1229
 underfed, 1439
 X-ray examinations in, 219
 Cholera, in phthisis, 278
 crystals embedded in face and throat, 1181
 Cholera, summer, 1540
 Cholera, 537
 Choretonic; hypnotic and anaesthetic, 777
 Chloroform, method of, purification of waters by, 411
 water in typhoid, 593
 Chloroform (see anaesthesia, supra-renal)
 death from, 1354
 in anaesthesia, 465
 in gelatin tubes, 1623
 narcosis, symptom, 494
 Chloroformization, nausea following, 1028
 Chlorosis (see biliverin, iron, antiseptics), 720, 1033, 1335
 etiology of, 1635
 venous thrombosis of, 1635
 Cholostrogol, 4229
 Cholelithiasis, 1299
 Cholecystectomy, 270
 Cholecystitis, 697, 904
 alcoholitis and cholelithiasis, 821
 typhoid, 533
 Cholelithiasis (see also cholecystitis),
 experimental, 904
 of whole family, 1293
 Cholera (see marine-hospital reports)
 Infantum, 724, 1420
 Infantum and nursing bottle, 51
 Infantum, for, 238
 morbus, 51
 Chorea and acute articular rheumatism, 54
 and choreic movements, 792
 clinical study of, 471
 etiology and treatment, 93
 incontinence of, for, 175
 pregnancy, etiology of, 119
 Sydenham's diagnosis of, 1289
 treatment of, 413, 1349
 Choroid, sarcoma of, 1036
 "Christian Science" (see also humbug, suicide, 621, 1240
 and spiritism, 1285
 and death certificates, 1657
 and medical practitioners, 1049
 and Michigan law, 1498
 aggressor, 1590
 delusion, 107
 divine healing, etc., 403
 druggist's fate, 429
 folly, 421
 foolery, 743
 immorality of, 1299
 in U. S., 461
 legal, 750
 Mark Twain and, 930
 methods, 43
 phases, 297
 practice, 112
 "Christian Scientists," opinion on, split asander, 995
 Chrysorrhinia, for warts, 97
 Clinician's notes, 1438, 1503, 1561, 1623
 Clinaric acid (see tuberculosis).
 Circulation, disturbance in infectious diseases, 1291
 effects of temperature on, 273
 galvanic current effects on, 222
 in own tissue, 163
 uric acid and, effects, 729
 Circumcision, 600
 Circumpolarization, 763
 Cirrhosis (see liver), 313
 Citric acid (see ozena).
 Clark, C. F., astigmatism, 1587
 H. W., vaccination, 1291
 medical service of late war, 101
 war, 101
 Clavicle, congenital malformation of, 474
 Climate in renal diseases, 789
 of So. Africa, 1666
 Climate, of, in relation to rheumatism, 288
 H. C., disease of antrum of, 1160
 Highmore, 771
 Clinico-pathology, 599
 Club doctoring again, 1557
 Phila. Med., 1502
 practices in earnest, 874
 Clubfoot, tabetic, 172
 Clubs, medical, political, 922
 Cocain and cocaine, toxicity of, 643, 1229
 in vomiting of pregnancy, 1410
 surgical anesthesia from, 1652
 Cocaine in cold, 1221
 Intraspinal, 1659
 Cocainized mentho-phenol, 159
 Coccioidosis, human, 540
 Code, N. X. State Med. Soc. and
 131
 Code of ethics, do we obey the, 1646
 Codein and its salts, 1397
 Cod-liver oil, rational administration of, 1250
 Colds, for, 1152
 Cole, C. K., mastoid disease, 411
 Cole, W. F., mastoid operation, 1168
 Coley, W. H., radical cure of
 hernia, 670
 Coley's treatment for malignant
 growths, 1250
 Colic, cystic biliary, 976
 for, 173
 gall-stone, repeated, 698
 infantile, for, 503
 College of Phys. of Phila., 1228,
 1357, 1590
 Collegium medicum, accredited, 305
 medical in California, 304
 Colles' fracture, new treatment,
 1299
 "Colloid material," for myxedema, 98
 Colon bacillus, diplococoid form
 of, 851
 dilatation of, congenital, 722
 rupture of, 469
 treatment of abdominal viscera
 through, 880
 treatment through, 1104
 Color blindness in merchant marine, 1104
 percentage of, 153
 Colorado, concerning, 789
 Columbus notes, 1438, 1561
 Coma, diathermic, oxybutyric acid
 and, 279
 diabetic, treatment of, 1538
 Comma bacillus, story of a, 1661
 Commercialism, 899, 874
 in Sweden, no, 865
 still more, 623
 Commissions, 1285
 Commissions (see also highest bidder, 1173
 Compresses, electrothermal, 1096
 Compton, early, following labor,
 114
 ethics and prevention of, 561
 prevention of, 408, 979
 Commercial, Brussels, general disease
 and, 160, 361, 866, 995
 for regulation of introduction
 of spirits into Africa, 36
 of health officials, 732, 1040
 Congress, anti-tobacco, 1418
 eighth Norwegian Med., 316
 for physical education of youth,
 694
 French leprosy, 347
 Internationals, dental, 604
 Internat. Med., 561
 Life Saving and Firat Aid,
 1335
 of electrotherapy and radiography,
 504
 of higher education, 1355
 of Latin America, Med., 223
 of Med. Internat., 3243
 of Med. Press, 1098
 of Obstet. and Gyn., 893
 of optical insurance companies,
 1311
 of Ophthalm., French, 37
 of ophthalmology, 9th Internat.,
 1014
 of Orol. and Larynx, French,
 161
 of professional med. and ethics,
 1172, 1443
 of professional med. and med.
 dentology, 1098
 of Psychology, 4th Internat.,
 1477
 of Surg., French, 1362
 of Triology, French, 347
 on behalf of blind, 312
 on tuberculosis and its treatment,
 1567
 otological, 580
 sanitary, 805
 Seventh Russian Med., 20
 of surgery, general diseases, 747
 tuberculosis, 759
 tuberculosis, report of, 345,
 1291
 Congresses in Paris in 1900, 732
 Conjunctivitis, bacteriology of,
 341
 infectious, eye installations,
 225
 infections, 1169
 membranous, 787
 simple, estrapha, for, 593
 spheroidal, in, 494
 trachomatous, 1616
 treatment, 481
 Connor, P. S., wounds by bullets,
 1291
 Conscientious objections, 420
 Consolidation, 55, 111

- Crocote, innocuon in malarial fevers, 344
- Croft, W., brain surgery, 1041
- Croft, W., foreign body in skull, 1553
- Crime (see Inanity).
- Crimm, old and, 1055
- Croft, T. J., cysts, 1615
- T. J., gynecologic cases, 1421
- Croftin, A. C., uric acid theories, 89
- Crothers, T. D., inebriety a disease, 675
- T. D., morphinism among physicians, 1165, 1304
- Crope, Françoise, 112
- Croup, 48
- Crout, for, 493
- treatment of chronic, 711
- Cryer, M. H., anatomic variations of nasal chamber, 951
- Cryoscopy, 1634
- Cuba, Havana, sanitary report of, 53
- sanitary condition of, 924
- sick-rates in, 53
- smallpox in, 1352
- typhoid fever in, 1352
- Culberson, J. C., sulphate of magnesia, 1258
- Curare, dosage of, 369
- Curare in gynecology, 659
- Current, electric, death from, 1091
- Current, electric, death from, 1160
- galvanic, without injury to skin, 791
- Current, medical literature, 28, 92, 150, 214, 272, 338, 402, 468, 522, 525, 656, 721, 783, 849, 902, 967, 1029, 1087, 1154, 1214, 1281, 1347, 1410, 1478, 1539, 1601, 1649
- (see also Index of authors and of titles).
- Currier, A. F., deformities of extrauterine gestation, 825
- Curriculum, suggestions for medical, 1370
- Curvature, spinal, treatment by gymnastics, 606
- Cushing, P. L., diabetes mellitus, 548
- Cushing, C., cholecystectomy, 270
- Cutaneous (see hysterical, infection, skin).
- Cuthbertson, W., cyst of ovary, 1489
- Cutler, J. A., neurotic diet, 680
- Cyst, chyle, in mesentery, 476
- of broad ligament, 669
- of pancreas, 15
- of pancreas following trauma, 77
- of serotum, dermoid, 135
- ovary, complicating labor, 1425
- weighing 245 lbs., 1041
- Cysticercus of fourth ventricle, 290
- Cystifluria, family form, 362
- Cystitis, 657
- favoleata, 152
- treatment of, 1028
- Cystostomy for extrophy of bladder, 543
- Cytoma (see hydronephrosis).
- Cystopneumia, 151
- Cystotomy, first performance of, vaginal, 852
- Cysts (see iris, kidney, ovaries, dermoid, 97)
- zoococcal in, 53
- Intraligamentous, cases of, 1615
- of ovary, dermoid, 487
- Danzon, P. A. S., address, 101
- Dana, C. L., locomotor ataxia, 1355
- Darrin, N. W., gas poisoning, 1362
- Davis, N. S., Jr., apoplexy, 284
- N. S., toxic agents, 3
- N. W., B., wounds of liver, etc., 882
- Dead, disposal of, 1501
- Dead, being gazing at arc light, 1206
- Dead-measles, hysterical, 1493
- Defecation, catarrhal, 471
- Defecatory, retention of, 218
- fractured base with, 1189
- inoperative chamber for, 561
- Death, apparent, facts in, 1162, 1174
- certificates, "Christian Science" and, 1637
- from electricity, 239
- of neonatorum, hamper in, 1053
- Deaths, and charities, 52, 174, 302, 367, 368, 427, 493, 558, 620, 683, 745, 807, 872, 926, 994, 1015, 1182, 1207, 1377, 1440, 1504, 1506, 1632, 1661
- (see separate Index).
- Death-rays in cities and states, 1053
- Deaver, J. B., appendiceal pus, 197
- J. B., intestinal obstruction, 164
- Decisions, 114, 171, 176, 177, 178
- 229, 303, 429, 471, 494, 671, 684, 685, 747, 749, 750, 928, 929, 930, 965, 1046, 1050, 1055, 1309, 1310, 1327, 1439, 1497, 1595, 1626, 1632, 1633, 1635, 1648
- Defecation, act of, 27
- Deformity at birth, 103
- post-paralytic, 1282
- relief for, 342
- Degeneracy or occupation stress, 229
- zoophilism and, 735
- Degeneration, 46
- Dementia of kidneys and liver, 1163
- maximatus, pan-sinusitis with, 639
- Delirium, study of, 277
- tremens, baths in, 476, 965.
- tremens, for, 174
- Deliver, military, 906
- right to practice, 239
- Dercum, F. X., cerebrospinal syphilis, 1613
- F. X., facial neuropathy, 1612
- Dermatitis, blastomycotic, 850, 1282
- histiocytic of leg, 1383
- exfoliative neonatorum, outbreak of, 475
- exfoliative, with cystic kidneys, 476
- herpetic, 222
- herpiformis, eosinophilis in, 1230
- herpiformis, psoriasis and, 1602
- Dermatology, hydrogen peroxid in, 1598
- Dermatoneuroses from exanthemata, 1489
- Dermatoses and gastric affections, 540
- artificial serum in, 901
- syphilitic, pruritus in, 1488
- Devil as a healer, 483
- Dewey, R., the hopelessly insane, 1010
- Dextrose and diphtheria toxin production, 851
- of nose production, 215
- Diabetes, acute, 539
- bronzed, 1649
- bronzed, hemochromatosis and, 920
- from copaha, 239
- insipidus, for, 173
- in diphtheria, 107, 1070
- mellitus and complications, 548
- mellitus and splenic anemia, 1641
- mellitus, essence of, 1288
- mellitus, fatal, 1656
- mellitus from liver insufficiency, 1425
- mellitus in Japan, 1228
- mellitus, lipemia in, 1006
- mellitus, loss of knee-jerk in, 1006
- milk diet in, 1546
- tests in, 159, 160
- treatment in, exaggerations of, 1212
- Diabetics, blood of, reaction in, 1547
- Diagnosis, art of, 969
- rational, 403
- urine, 1034
- value of, 277
- Diarrhea, acute, for, 239
- and dysentery, injections in, 537
- chronic, treatment, 409
- morning, treatment of, 655
- epidemic, study in, 1606
- incident on teaching, 50
- Diarrhea in infants, 219
- Infantile, mortality from, 871
- etiology and treatment, 321
- of scarlatina, 50
- simple summer, 50
- summer cases of, 1219
- summer, in infants, 598
- treatment of, rational, 597
- relation, relation of psoriasis to, 856
- Diarrheas of infancy, acute, 408
- Diazoreaction in scarlet fever and measles, 239
- reaction, test-tube for, 1221
- Dickson, A. G., cholera infantum, 1420
- die, right to, 738, 1541
- Diet in intestinal diseases, 1410
- infection of, 1408
- in typhoid, 742
- neurotics, 515, 680
- on urinary inflammation, 533
- vegetable diet of, 1233
- with excessive HCl, 1441
- Digestion, feeble, peptic in, 1845
- Digestive disorders (see Infancy), practice, limitations of, 970
- system, disease of, 342
- Digitalis, acute heart, pneumonia, poisoning
- and heart, 217
- diagnosis of, therapeutic action, 411
- succedaneum to, 599
- Diphtheria, notes on, 1072
- and typhoid problems of, 650
- antitoxin, 599
- antitoxin in, 1604
- control in healthy, 800
- bacillus in milk, 856
- bacteriologic diagnosis of, 1100
- bacteriologic diagnosis of, 1355
- calomel in, 22
- complications of, 1100
- of, 1291
- in Chicago, control of, 1100
- mortality, 1485
- mortality since serum introduction, 1522
- in Ontario, 1485
- prophylaxis of, 1600
- recurring, 541
- throat and nose disinfection in, 854
- tracheotomy in, 278
- urotopia of, 155
- treatment of, with antitoxin, 1554
- with scarlet fever, treatment of, 1554
- Diphtheria, cerebral, etiology of, 1556
- Diphtheria, decision against, 1050, 1054
- Chicago, 106
- national reproach, 1299
- Suisun, 1256
- Disease, legal liability for, 1626
- old type, 342
- Diseases, how prevent spread of, 1810
- Disinfectors prohibited, 175, 1309
- Discoveries, prohibition of, 1309
- Disinfectant, experience, 1223
- formaldehyde, experience in, 621
- formaldehyde in, 873
- for tuberculosis, 218
- in diphtheria, 854
- of lands, status of, 1652
- in typhoid, 342
- of infected wounds, 974
- of mouth, 917
- of vessels, 1222
- with soap, 1660
- Dislocation (see elbow, hip, jaw)
- Dislocations, congenital, antenatal factor in, 1248
- Dispersary regulations, 1369
- Disseminated syphilis, 561
- Displacements, uterine, treatment of, 1344
- Dissolution, injury inguinal, 11
- Dissector, a, 744
- Diuresis, influence of substances on, 424
- Diuretic, as, 558
- asparagus as, 904
- mixture, 594
- Diuretics, 719
- Divertercillus, 472
- "Divine healing" homicide, 1621
- Dixon, A. J., plea for tuberculous lungs, 337
- Doc, Geo., quinin in malaria, 248
- Doctor as carrier of infection, 156
- in literature, 1300
- Doctors, druglists, 1563
- ministers and, oversupply, 1049
- Doctors in law from medical college, 47
- Dogs, experiments on, 132
- Douches, in laryngeal tuberculosis, 1357
- Dorsett, W. B., ventrofixation of uterus, 914
- Douglas, in pharmacopoeia, 1108
- "Double consciousness," 972
- Douche, frictions before, 428
- in anal fissure, 3441
- nozzle, vaginal, symptoms from, 1104
- rise, and decline, restoration, 270, 844
- stomach-tube and, 494
- Donkeshobors in northwest, 1170
- Do we need to think? 1103
- Doyle (see hair-bring)
- treatment, ill. law and, 929
- Drainage cann., Chicago, 400, 1544
- of cavities, 950
- Dreous and insanity, 1650
- Dreusen, C. T., mouth in syphilitic, 1421
- Drew, J. A., Government Hospital for Insane, 869
- Dreyfus and his physician, 368
- Dropsy, cardiac, for, 654
- Drug cases, catalogue of, 312
- Drug-taking, maternal, and adult disease, 416
- Druggists and medical practice, 1571
- responsibilities, 1557
- Drunkennes, "care" for, 1566
- Duff, J. M., B., hair-bring and menopause, 1043
- Duffield, Geo., tuberculosis, 1362
- Dugan, R. C., emergency surgery, 895
- Dunn, James H., enlarged prostate, 1637
- Dunning, L. H., ectopic gestation, 861
- L. H., injury to ureter, 1278
- Duodenum, carcinoma of, 1362
- perforation, culture of, 162
- Dust, smoke and gas in cities, 1611
- Duvall, W. A., infection from air-borne passages, 1553
- Dynamite (see amaraosis).
- Dysentery, acute, 50
- Aspirin in, 1607
- potassium permanganate in, 1154
- Dysmenorrhoea, for, 301, 1538
- membranous, 1543
- suggestion in, 1651
- Dyspepsia (see constipation, enteritis)
- atonic, for headache with, 238
- fatal, for, 654
- for, 720
- from motor insufficiency, 792
- Dysphonia, 727
- Dyspnea from glands in larynx, 1611
- from laryngitis, etc., 273
- Dystocia, causes of, 970
- from short cord, 1215
- Dys trophy, progressive muscular, 917
- Eads, B. R., a dissector, 744
- Eargle, J. B., cyst of pancreas, 1588
- Etrachea, bonyles in, 472
- Etrachea, bonyles in, 472
- Ear (see acetabular, arthritis, carcinoma, enzymes, mastoid, negro, otitis, sympathetomy) affections, causes of, 111
- anatomy and physiology of, 904
- disease, 724
- diseases, adreocals and, 1577
- diseases and life insurance, 1655
- diseases, diagnosis and treatment of, 1582
- disease-simulating Meniere's disease, 399
- drains, closing perforated, 225
- effects of artillery practice on, 853
- family physician and, the, 786
- indications for opening, 1607
- inflation of, 1217
- menstruation by, 395
- middle, embryology of, 853
- middle, inflammation of, 1036
- suppuration of, treatment, 1096
- syringe, infection through, 949
- East, hemorrhoid operation, 37
- Eastman, J. R., extrophy of bladder, 337
- Eaton, F. B., general practitioner and oculist, 290
- F. B., skull fracture, 228

- Ectes, R. G., code of ethics, 1646
 E. G., what are antioxins? 713
 Echinococcus disease, 1412
 in abdomen, 894
 Echinopsia, 134, 458, 1225, 1285, 1650
 Cesarean section for, 1006
 puerperal, 1104, 1215, 1422
 Eczema, for, 558
 and psoriasis, 14
 patches, 848
 to remove
 asthma and, 1061
 chronic, 1514
 infantile, 1116
 acid in, 1409
 sebaceous, for, 720
 treatment of, 1545
 Edema (see hemiplegia, lids, puerperium, lungs)
 angioneurotic, 344, 407, 539
 of nasal mucosa, 273
 of skin, origin, 279
 Edes, R., scope of pharmacopoeia, 1600
 Editorial oversight, 489
 Editorials, 43, 104, 445, 220, 292, 358, 417, 486, 549, 600, 672, 725, 797, 863, 919, 983, 1046, 1115, 1170, 1231, 1296, 1364, 1428, 1496, 1554, 1618, 1656, (see also separate index)
 Education, forensic, 867
 practical, a profitable, 687
 Edwards, L. B., testicular mumps, 963
 Egestion, intra-abdominal, 99
 pericarditis with, for, 367
 Eighth Commandment, 422
 Eilat, G., the processus vermiformis, 323
 Elbow, dislocation of, 1157
 Elbow-joint, flexion and extension records, 227
 resection of, 1221
 Elean, A. L., nervous reflex, 1421
 Elder J. M., fracture of skull, 608
 Elderly (see senescent, current)
 light flash, injuries to eyes from, 898
 stimulation of corpus striatum, 1653
 Electricity (see arthritis, cataract, deafness)
 for cancer, 1650
 in cardiac failure, 1285
 Electrolysis, cathartic, 539
 for strictures, 1477
 in aneurysm, 1494
 treatment of nose, 1486
 Electrostatics, Haarb's, 340
 Electrostatic currents, 1544
 Elephantiasis and removal of glands, 109
 calomel injections for, 1027
 of labia, 1215
 Elliott, E. C., diseases in negro, 1410
 Elliott, A. R., interstitial nephritis, 134
 J. H., results at Muskoka Cottage Sanitarium, 621
 Embolism, pulmonary, 1482
 Embotomy and Cesarean sections, 224
 Embryotrophy, 1486
 Empyema (see antrum, sinus) 592
 draining after operations for, 412
 from surgical standpoint, 725
 in acute, signs of, 122
 of gall-bladder, 20
 Emaphysa, subcutaneous, case, 622
 Enderbitch, 500, 1480
 benign and malignant, 609
 rheumatica, malignant form, 477
 ulcerative, 983
 Endophthalmitis, 1262
 Endometritis, 550
 puerperal, alcohol in, 782
 treatment of drainage, etc., 703
 Endothelium, re troperitoneal, 1562
 Enema, 1538
 nutrient, element of, 613
 English, Gen. Med. Council, reform in, 553
 of medical men, 1628
 Enteric fever, 1131
 fever, sewer gas and, 1494
 Enterocystostomy by implantation, 476
 Enterocolitis in children, 1420
 Enterocolic and nervous dyspepsia, 910
 Enterography without aids, 1219
 Enteritis in ribs, 160
 Entonitron, indications of, 156
 Entonitron, for, 173
 Enzymes and immunity, 1642
 for polypl. otitis, etc., 1144
 Eosinophilia, 100
 Eosinophil, what constitutes an, 129
 Epidemics of 1898, 857
 Epididymitis, syphilitic, 227, 1425
 Epilepsy, absence of, 1160
 Epilepsy, strokin in, 277
 alkaline salts in, 1633
 auto-intoxication and, 787
 caustic, 1035
 cortical, stimulation of cortex in, 730
 following skull fracture, 410
 for, 782
 idiopathic, lymphatic, constitution in, 738
 infantile convulsions and, 1169
 Jacksonian, 1495
 prize for research in, 1309
 relation to alcohol, 909
 treatment of, surgical, 747
 Epileptic (see fractures, insanity) ambulatory automatism, 1613
 eye strain, 185
 in colony, treatment, 96
 Epileptics, Craig Colony for, 1633
 muscular hypotonia in, 345
 Epithelium, 185
 Epithelial structures in peritoneal membrane, 329
 Epithelioma, 867
 crumous acid for, 1410
 from psoriasis, 722
 from psoriasis, origin, 780
 of larynx, formation in, 475
 on chancere, 1442
 sarcoma and, 795
 Equestrian reforms, 1234
 Erysipelas, due to intra-nasal disease, 539
 in typhoid, 151
 Erysipelas, see rheumatism, blood, tetanus)
 serum in, 279
 with complications, 1602
 Erythema, indurated, 216
 lesions and nature, 278
 veil a cause of, 1220
 Erythra, tetrametric, cases with, 1353
 Esbach's volumetric method, 763
 Eschner, A. A., myxedema, 982
 E. A., ulcerative endocarditis, 983
 Esophagus, carcinoma of, 95
 cicatricial stricture, treatment, 145
 enlargement of, 160
 foreign bodies in, 239, 1095
 functional, 1159
 stricture of, 1159
 stricture of, functional, 1157
 1538
 stricture of, treatment, 163
 Ether (see anesthesia, chloroform) administration, 907
 drinking, 928
 sulphur, 465
 Ethical relations, 1121
 Ethics, professional, 1243
 Ethmoid (see antrum, cataract), 1291
 Ethmoiditis and treatment, 1230
 Ethyl bromid, 661
 Ethyl (see cocain), 131
 Euphasia, mydriasis, 153
 Euphorbia, 1159
 events, of intoxication, 794
 Ewing, S., supervision of prostitution, 413
 Examinations in N. H., 1590
 Examinations, 748, 1622
 physical, 114
 physical, not case to order, 1633
 systems of, new question, 176
 questions, 420
 statistics, Md., 1635
 Examinations for practice, Mexico, 1629
 Examiners, Medical, Mich., 994
 Exanthemata, dermatoneuroses from, 1480
 diagnosis of, the, 968
 otitis of, 97
 Excite and blood pressure, 34
 Excitability, alcohol, at annual meetings, 1435
 Exophthalmos, case of, 917
 Exophthalmos, fractured base with, 1189
 Nature of carotid in, 239
 Expectoration, suppurations 1110
 Expectant, laughter an aid to, 280
 Experiments on vision, 71
 Experimentation, in treatment of, 1632
 problem medical, 1376
 testimony, 1165
 Extract (see santonin, suprarenal, stramonium, parotid, 561)
 parotid, in ovarian disease, 402
 suprarenal, in surgery, 481
 thyroid, in myxedema, 414
 Extract, watery, of tubercle bacilli, 405
 Extracts, suprarenal, in ophthalmia, 340
 of bladder, 132, 256, 258, 260, 337
 of bladder, cystostomy for, 543
 Exudate, remedies influencing, 1212
 Eye (see anal, antioctoxication, electric, pleptic, gall-bladder, headache, obstetric, paralysis, quinin, rest, sinus)
 and ear in infections, 218
 and general practitioner, 1613
 disease, malarial, ar, 1606
 diseases of cavities and, 1107
 misleading statements on the, 274, 401
 muscles, movements of, 535
 operation in ophthalmia, 153
 section, etc., in diseases of the, 1901
 slight ailments of, 535
 strain, 1089
 reflex irritation and, 727
 trouble, case of, 1361
 troubles and anal disturbances, 420, 1203
 tuberculosis and syphilis of, 345
 Vaccin virus in, 153
 work points in, 481
 Eyes, of railway employees, 1528
 influenza and, 473
 Eyeball, foreign bodies in, 289
 lost from choroidal hemorrhage, 1252
 of children, examining, 42
 salt solution in, 241
 syphilitic affections of, 542
 Eyster, G. L., cerebrospinal meningitis, 187
 Face and jaws and disease, 81
 pan-sinusitis of, 1029
 presentations, treatment, 1424
 Face, Fr. A., cerebrospinal meningitis, 102
 G. A., quinin in malaria, 253
 Faculty, contribution to state, 1360
 Faddism, 855
 Fairchild, D. S., treatment of lung abscess, 811
 Faith healing, criminal, 365
 Fake school of pharmacy, 1373
 Fallopian tube, production of impermeability of, 288
 False step, a, 1557
 Farber J. H., middle ear diseases, 1392
 Fat and fecundity, 94
 in urine of yellow fever, 239
 Fat-necrosis, abdominal, 731
 Fat, 1156
 Febris typha, 1493
 Feeds and coloration of, 1544, 1600
 Feundation without male nucleus, 1441
 Feundity, fat and, 94
 Fee, Irene, not too high, 684
 of doctor, 1431, 1443, 1489
 feeding children of weak digestion, 1560
 infant, 998, 1031
 in gastric ulcer, 1413
 rectal, 866
 Feet, covering, for, 655
 Feuton, F., leptone in typhoid, 1104
 F., subcutaneous emphysema, 629
 Ferguson, A. H., hernia, 6
 A. H., transplantation of round ligaments, 1275
 Ferment of fluids, oxidizing, 1037
 Fertilizers human, 1038
 Fetus, double, 131
 Ferret, (see antipyretics, camp-teric, hemoglobinuric, hyster-teric, interstitial, malarial, Malta, rheumatic, spotted, sup, thermic, typhoid, typho-malarial)
 its treatment, 597
 cerebrospinal, 429
 hemoglobinuric, 473
 hyster-teric, 222
 in surgery, 34
 malarial, 1217
 monstrial, 1217
 in N. H., in Tex., 217
 post-partum and constipation, 1607
 puerperal antistreptococic, 344
 syphilitic, case 344
 Texas cattle, etiology, 166
 tropical, type of, 53
 urine elimination in, 1609
 Fevers in Va., 1604
 eruptive and simple, for, 558
 malarial, creosote in, 344
 Fibrin, defense of organism by, 99
 fibrinogen, 216
 Fibroid (see tumors), 34
 changes, conditions leading to, 724
 nodules, epidermal, 1500
 of uterus, 916
 of uterus, multiple, 1361, 1422
 of uterine contents, 34
 uterine, what to do with it, 205
 Fibroids complicating pregnancy, 1167
 uterine, 450, 1844, 1650
 uterine, complicating pregnancy, 1043
 uterine, in pregnancy, 1482
 uterine, operation on, 1224
 Fibroma, desmoid, beginning in Poupard's ligament, 820
 of abdominal wall, 32
 uterine, thyroid extract in, 1493
 with pregnancy; operation, 452
 Fibromata, multiple uterine, 1495
 Fibromyoma, 804
 Fibrosarcoma of abdominal wall, 820
 Fibrosarcoma and carcinoma, 852
 Fiction, hereditary transformation in, 44
 Field, A. G., muscle tension meter, 1630
 Filina, sharp-tailed, 98
 Finger-rot in obstetrics, 1036
 Finger-nail, intestinal, 1261
 Fingers, tumors of, congenital, 1218
 Finke-Perli, H., pills, tablets, etc., 1651
 Finley, F., bone necrosis after typhoid, 227
 Finley, H., case sterilizer, 1368
 Fissure, anal, treatment of, 719
 of anus Boas' treatment, 965
 Fistula for prostatic troubles, 1653
 Implantation of ureter for, 730
 plaster injections to locate, 734
 urethral, 64
 Fissure, dermoid, 912
 fecal classification of, 199
 recto-vaginal, 350
 Flaccid in 7 months, 475
 Flatulency and pyrosis, for headache with, 228
 Fleming, C. K., uterine displacements, 1344
 C. R., extra-uterine pregnancies, 414
 Fletcher, M. H., periosteal caries, 685
 Flexor, S., experimental pan-s. rheumatism, 1612
 S. Philadelphia, 1360
 Fluorin internally in lupus, 654
 Food and death-rate, 1627
 Food, adulteration, 453, 1313, 1369, 1435, 1562
 preservatives, 1564
 preservatives and health, 1544, 1651
 pure, 548
 Foods, pure, 1108
 Foot and mouth disease, 477
 Foot, in anatomy, 14
 to find, 1163
 Forens, anastomosis, 1649
 early use of, 1420
 La Place, Surgical, 1627
 new hooking, 1039
 Foreign bodies (see esophagus, trachea)
 Forests and health, 1222
 Formaldehyde (see disinfection, inhalations, milk)
 in cutaneous cancer, 1271
 Formin, (see antipyrin, 34)
 for surgical tuberculosis, 99
 in epitheloma, 475
 in milk, 1416
 Formol (see orthoform)
 Foster, Hal., treatment of nasal polypus, 1627
 Fourth in Phila., 179
 of July fatalities, 233
 Fox, W. H., injuries to eyes, 808
 Fracture (see astragalus, injuries, patella, radius, ribs)
 Colles', new treatment, 342
 in childhood, number of, 479
 of extremities, 406
 of radius, 155
 of skull, complications and treatment, 668
 skull, 228
 ununited, in childhood, 662
 Fractured ribs with deafness, exophthalmos, etc., 1189
 Fractures, basal, 1216
 compound, 780
 congenital, antenatal factor in, 1249

- Fractures, cranial, 597
during epileptic seizures, 920
modern treatment of, 75
nervous complications, 99
of femoral neck, 519
of tibia, 545
with laryngotomy from, 1053
thyroid treatment in, 36
treatment of, modern, 723
France, medical crisis in, 1648
Frank, P. P., tuberculosis, 1612
Frank coupler, the, 130
J., anastomosis of bladder to
of, 122
J., vesicocolic anastomosis, 976
Frands (see alliance, superstitious)
Frazier, C. H., gonorrhoeal rheumatism, 1258
Freeman, L., Bottini instrument, 481
L., kidney diseases, 225
Freer, O. T., laryngeal tumor 917
Freiberg, A., epithelioma, 917
A., vesicocystic disease of breast, 1230
A., popliteal aneurysm, 918
Frick, W., syphilis of skin, 1169
Fry, R. P., nasal suction, 1552
Furniculous, yeast and levarin in, 1176
Fussell, M. H., carcinoma of duodenum, 1362
Futcher, T. B., lipemia in diabetes, 1060
Fütterer, G., actinomycosis, 1099
Garr, human, variation in, 157
Gall-bladder, empyema of, 30
eye after ligation of, 1090
Gall-stones (see calculi, 1036)
Gall-stone crepitus, 1168
impaction, 41
of unusual size, 1359
surgery, 1479
Gall-stones (see also colic, jaundice), 481, 724, 870
after removal of, 857
etiology, diagnosis, treatment, 688
pathology of, 93
surgery of, 1422
treatment, observations on, 694
treatment of, surgical, 1034
Garrigue (see emphysema)
Ganglion, Gasserian, resection of, 346
superior cervical, excision, 599
Gargaree (see ring, puerperium)
in child, 170
in childhood, 299
Gas (see oxygen)
Gases from bacillus coli, 158
Gastralgie, gastritis and gastrodynia, for, 720
neurosis, for, 1628
Gastroctomy, 907
Gastric (see childhood, hernia, affections, dermatoses and, 540 affections, surgery of, 159 disease, HCl in, 1360 hyperacidity, for, 358
Gastritis (see gastralgia), acute, for, 654 chronic enterarial, for, 300 for, 306
Gastrostomy (see gastritis)
Gastro-enteric infections, 50
Gastro-entrostomy, 133
dysentery following, 771
for pyloric stenosis, 1653
technique of, 1287
Gastro-entritic nurslings affected with, 1652
Gastro-intestinal (see headaches), disturbances, water treatment of, 82
tract, experiments on, 883
Gastrostomy and appendicitis, 82
Gehrmann, A., aspects of child blood, 416
A., diptheria in Chicago, 1100
Gelin, J. (see air),
cultures, crystal formation in, 280
benzolic acid use of, 1483
in aneurysm, 1353
Gelsemium sempervirens, 966
Genard's disease, 99
Genital diseases, floating kidney simulating, 1149
Genito-urinary organs, athletics in, 285
Gessner, H. B., amputation vs. excision, 1407
H., urethral catheter in tetanus, 671
H. K., gonorrhoea and marriage, 41
Gessner, H. B., trocar in recto-vesical wall, 1493
Gestalt, psychologic, 917
ectopic, rupture in, 1691
ectopic, ruptured, 795
ectopic, when operated, 861
excise, uterine, deformities of, 825
Gibbon, K. I., retention of life, 606
Gibb-Wishart, D. J., adenoids and enlarged tonsils, 669
D. J., nasopharyngeal polypus, 105
Gidman, D. T., uterine fibroid, 205
Gingivitis, intestinal, 1490
Gittings, J. C., pneumonia, 101
Gland (see hyperplasia, mammary excretions, prolactin, prostate, suprarenal, thyroid).
Glands, 1329, 1626
Glanders, (see in children, 1033 enlarged, lamoin in, 1143 inguinal, elephantiasis and removal of, 109 lymph, after cancer extirpation, 911 lymph, extirpation of, 911 mammary, cancer of, 1160 gonorrhoeal, 1074
Glass brick walls for operating rooms, 477
Glasses, (see wearing gear, 31)
Glucoma, 1157
chronic, 1481
excision, for, 96
excision of zonule, for, 599
massage and relief of eye strain in, 622
sympathetic action in, 603
Glendon, E. B., deflection of nasal septum, 1552
E. B., Passow's operation, 1358
Gleet, rational treatment, 288
Glycomata (see cord),
Gloves in surgery, 34, 536
use of, 83
Glycosuria, alimentary, and pancreas, 1417
in cerebral hemorrhage, 343
in intoxication from atropin, 346
Goethe, A. H., treatment of endometritis, 702
Goethe, as an anatomist, 872
Goff, M. P., a pathologic department, 150
Goffe, J. R., vaginal route in pelvic disease, 933
Goniter, exophthalmic, 813
sophthalmic, quinin in, 1488
exophthalmic, quinin in, 655, 1488
exophthalmic surgery of, 1369
operation for, 1282
pathology and treatment, 1313
treatment of, 1282
Gold and sodium, chlorid of, therapeutics of, 1334
Goldolphn, A., the uterus, 181
Goler, G. W., state aid in tuberculosis, 1015
Gonococci in corpus luteum cysts, 59
Gonorrhoea, lodgement of, 1651
toxin and nervous system, 542
vitality of, 1376
Gonorrhoea, 918
aberrant, 41
abortive treatment of, 1410
acute, treatment of, 961
balsamic in, 1600
in female, 20, 1250
mercurial in, 1481
prophylaxis in, 157
Gonorrhoea (see ophthalmia, myositis, puerperium, rheumatism, salpingitis),
disease of nervous system, 1609
patients, advice to, 218
Gooding, M. L., multiple sclerosis, 254
Good will, 685
Gordon, A. R., digestive disorders, 622
Gorham, G. H., adenoids, 1224
Gould, G. M., fallacy of rest-cure in female, 20, 1250
G. M., massage, etc., in glaucoma, 622
Gonley, J. J., urethral catheter in tetanus, 1293
Gout, electric treatment, 428
gelatinous sodium bicurate and, 1286
Gout, modern views on, 1485
modern views on, 1485
pathogenesis of, 543
study of, 1286
treatment of, 1345
Gouty diathesis, 1585
Grades, H., ocular, orbital and nasal disease, 1654
Gradowich, R. B. H., cerebrospinal meningitis, 1636
R. B. H., hepatic abscess, 1495
Grafting, Mangoldt's method, 446
Grain of truth, etc., 1419
Grass, F. C., gunshot wounds of abdomen, 1549
W. W., carcinoma of uterus, 414
W. W., prolapsus of uterine cancer, 567
Granuloma, ulcerating, 158
Grasset, F. M., appendix, 1495
Graves disease, 1484
Graves disease, administration of bile gland in, 728
Graves disease, successful treatment, 1042
Grayson, T. W., retention of life, 606
Greece, C. L., acromegaly, 101
D. M., brain and other abscesses, 1187
Gruel, H., Infants, 407
Gualisco in differential diagnosis, 1025
Gualisco, 855
Guarros, artificial, 874
Guild of the misericordia, 213
Gulfers, R., hypertrophy, 15
Gurtic abscess, etc., 1228
Gumma, 795
Gunshot wounds (see chest, intestine)
Gymnastics, therapeutic, 631
Gynecic diseases and nervous system, 147
Gynecologic cases, 1421
deductions, 536
diagnosis, points in, 662
trifles, 100
Gynecology (see curette, seismo-therapy),
among insane, 217
conservative, 333, 539
conservative in, 216
dermoid tumors in, 1295
hematoma in, 95
notes, 1348
organotherapy in, 274
plea for conservative, 480
streptococcus in, 29
Hahnreiter, C. J., gold and silver therapy, 1334
Haffkine's plague vaccine, inoculation with, 221
Haggard, W. D., surgery of biliary calculi, 1344
Hahemann a neurotic, 1167
Haight, A. T., adenoids and ear diseases, 1577
A. T., myopia, 144
Hair falling from emotion, 159
tangles, 594
Hall, J. W., infection by bacterium coli, 482
R. B., management of pregnancy, 563
R. B., retroperitoneal tumors, 980
Hallucinations of the dying, 217
Hamann, C. A., hip dislocations, 795
Hamburg from medical side, 529
Hammer, Mayor's, in death of non-arteritis, 1057
Handshaw, A. M., vaccination, 1230
Hands (see sterilization),
cleaning the, 535
white and soft, to keep, 654
Handwriting physiology of, 746
Happel, T. J., pseudo-sialphox in Tenn., 1426
Hare, H. A., splenic aneurysm, 1641
Harmony, 45
Harris, M. L., lacerations of pelvic floor, 1450
Harrison, S. I., uterine fibromata, 1493
Hart Ernest, 255
Hatfield, M. H., school puberty, 1333
Hawaii Islands, leprosy, insanity, crime, etc., 615
Hawes, J., antiseptic suit, 808
Hawes, J., sterilization, 288
Hayden, A. M., biliary calculi, 750
Hay-fever, for, 425, 660
Headache, 1618
and as a symptom, 343
from eye strain, 1218
mental element in treating, 537
neuralgia, for, 493
Headache, relation to eye affections, 757
Headaches, discussion on, 1352
gastro-intestinal disorders, 760
prescriptions for, 238
Head jerks with aneurysm of aorta, 911
traumatism, 1283
Heaven, devil as a, 480
Healers, folk, in England, 492
Healing (see "Christian Science,"
Bowie, frauds, magnetic, etc.)
Heal, H. H., of public, 1165.
Department of, 1423
department, Louisville, 1502
department of public, 551
Ill. State Board, circular of, 558
in Indiana, 456
in Michigan, 476, 994
in Ontario, 873
in Porto Rico, 1442
Laboratory, Ontario, 155
National department of, 233, 337
of army, 1377
of Canada, 1161
of Canada, N. J., 1634
of legislators, 561
of students, 1561
official, action against, 926
officers (see conference),
officers of, 1177
officers of Ontario, 860
official, medical, 553, 611
preservatives in food and, 1631
reports (see marine-hospital reports of students, 1053
report, Cincinnati, 1561
report, N. Y. City, 1062
statistics, Cal., 1633
Hearing, atmospheric changes and, 1091
in railway employees, 1002
tests for, 149
Heart and bicycling, 157
digitalis and, 1187
statistics, Cal., 1633
disease, altitude and, 219, 1412, 1541
disease, digitalis in, 1169
disease, functional, 1161
disease in obstetrics, 1216
disease, mercury in, 1287
disease, prognosis in, 1540
disease, valuable, prognosis, 48
displacements, 907
failure, for, 1628, 1350
fatigues, treatment of, 1028
hypertrophy of, mechanism of, 911
infection of, 919
in nephritis, treatment, 134
lesions, case of, 1062
mercury in diseases of, 1093
nurs., causes and diagnosis, 260
murmurs, lecture on, 1353
papillary muscle of, 1157
serule, sty-chin in, 1027
stab wound of, 1649
stimulant, 1469
suffocant, of, 54
tobacco, rejections for, 498
tonic, intensity of, 137
tonic and correction, 113, 173
tortic necks, 478
wounds of, 346
Heat, application of, thermophore for, 1461
dry, 1342
in gynecology, 53
Healthy, A. C., intracranial infection, 1057
Heidensfeld, M., lichen ruber planus, 794
Heiktoen, L., histomycetic dermatitis, 1388
Hematemesis, pneumococcus gastritis with, 1651
Hematuria, case of, 413
Hematophyria, human, 1349
Hematuria, essential, 1369
from healthy kidneys, 729
Hemiparesis, 129
Hemiparesis, sheep's liver in, 476
Hemiparesis of cerebral origin, 476
Hemihypertosis, post-apoplectic, 1649
Hemiplegia, disturbances in walking, 270
edema in, 722
Hemochromatosis, 850, 1574
and pernicious anemia, etiology of, 1649, 1572
and bronzed diabetes, 920
Hemoglobin, 1689
capacity of red corpuscles for, 731
estimation of, 19
in high altitudes, 406

- Infection, venereal, 920
 Infectious disease, circulation, disturbance in, 292
 Diseases, cause and prevention, 161
 diseases, circulation in, 222
 diseases in children, adenoids and, 1257
 diseases, nerve disorders in, 43
 diseases, new theory of, 987
 processes, defenses in, 1036
 Infective diseases, propagation of, 856
 Inflammation, changes of cells in, therapeutics of, 395
 of mouth, etc., 93
 Induration, ether, in intestinal perforation, 1631
 Influenza (see bronchitis, catarrh, nausea, otitis, throat), and death-rate, Chicago, 612
 catarrh from, 341
 effects of on eyes, 473
 for, 1086
 nasal and aural complications, 1331
 surgical sequelae, 221
 treatment of, 1476
 Intentional, 1876, 1567
 Infusion, dural, in tetanus, 541
 Ingraham, H. D., rupture of uterus, 266
 Instillation of antiseptic nebulae, 1102
 Inhalations, nasal, 273
 of formaldehyde in catarrh, 1408
 oxygen in pneumonia, 470
 inheritance, 73
 Injection, carbolic acid, in tonsillar disease, 1092
 saline, intoxication from, 176
 Insulin (see diabetes, elephantiasis, fistula, tetanus, tuberculous)
 into brain, toxin, 25
 intramuscular, of mercury, 660
 intratracheal, 107
 of anthrax bacilli in sheep, 1546
 of oil, paraffin, 966
 saline, in burp, 1537
 subconjunctival, alkali in, 1219
 subconjunctival, of atropin, 663
 tending for intracerebral, 35
 Injuries, abdominal, from blunt force, 538
 during birth, fractures and, 1282
 Injustice, apparent, 1430
 Inoculation, antipneumic, 158
 Insulin (see hospital), baths for, continuous, 792
 brain in, sp. et. of, 976
 care of at farms, 784
 practical practitioner and, 30
 gynecology among, 217
 management of, 1419
 over-crowding of, 807
 paralysis of, syphilis and, 908
 paralysis of, tubes and, 1651
 physical diagnosis in, 158
 sexual perversion of, 542
 surgery among, 670
 the hopelessly, 214
 Insults, uterine disease and, 709
 Insanity (see Hawaiian Islands) and crime, 807
 auricular lesions, 1425
 dreams and, 1650
 early treatment of, 1091
 epithelial, strontium bromid in, 601
 from abortion, 1413
 medioleagal relations, 36
 myelence blue in, 1833
 new cure for, 1234
 pelvic diseases and, 827, 928
 post-febrile, 32
 puerperal, 784, 1216
 renal disease and, 1348
 sedative in, 796
 surgery and, 723
 toxic causes, 482
 wound infection in, 330, 784
 Insects, etc., and infective diseases, 807
 Insomnia, 101
 hydriatic treatment, 222
 orthography in, 27
 Inspection of pupils, 1232
 of schools, 860, 1499
 Instrument, for measuring arterial pressure, 239
 gynaecological for prostate, 1295
 Instruments, new, 1000
 scientific, 995
 sterilization of, 1627
 Insufficiency, cardiac, 1089
 renal, 730, 985
 renal, and cure, 910
 Insurance and intoxicants, warranty vs., 178
 decision, 471
 life, eye diseases and, 1655
 life, examination of women for, 1655
 life, rectal diseases and, 1655
 life, tuberculosis and, 1429
 tuberculosis and, 669
 Intermittent and remittent fever, for, 594
 Intestinal (see adhesions, anastomosis, antiseptics, calculi, catarrh, diet, lesions, obstructions, peritonitis, typhoid), 1469
 anatomostomies, 126
 contents, reaction of, 1094
 lesions, typhoid without, 342
 obstruction, 164, 1642
 obstruction from ascariids, 80
 perforation, ether infusion in, 1641
 perforations from within, 276
 Intestine, minute anatomy of, 126
 resection of, 226
 tuberculous of 538
 Intestines, atrophy of, in anemia, 160
 benzoic and calcium peroxid in, 1609
 bullet wounds of, 156
 excision of, 97
 gunshot wounds of, 409
 lesions of, 1216
 perforation of, by ascariids, 911
 resection of, excision of stomach, 874
 rupture of, 662
 ruptured, 1422
 Strictures, 1486, 1640
 of ureter, 94
 Antiseptics, warranty against using, 178
 Intoxication, 794
 from extractum ethereum, to prevent, 1036
 from saline injection, 176
 from alcohol, 622
 from potatoes, 1427
 with antipyrin, 1183
 (see alcohol, see injections).
 Intracranial disease, symptomsatology, 470
 Intranasal (see operations).
 Intratracheal (see operation, Instru-
 ment for, 808
 Intubation, 1158
 apparatus, 1510
 in laryngitis, 1154
 in private practice, 1418
 laryngeal stenosis and, 1484
 Intussusception, 730
 in infants, treatment of, 728
 Inversion of uterus, 596
 Iodine, application of, 1285
 iodine, 492
 Iodoform (see also poisoning), 970
 abolishment of, 1526
 gauze packing, 117
 Iowa, quackery in, 361
 Ipecac in feeble digestion, 1345
 Iritis, in iridocyclitis, 1345
 Iridochoroiditis following abscess, 1200
 Iris, cysts of, following dislocation, 1349
 ganglion cells in, 1090
 tuberculosis of, 476
 Iritis glaucomatosa, 1547
 Iridoplegia, 422
 Iron in chlorosis, 848
 rectal injections of, in chloro-
 sis, 911
 Irrigation, rectal, 596
 Irritation-exostosis, 244
 JACKSON, E. acute conjunctivitis, 481
 E. anisometropia, 1286
 E. credit to Marlow, 1564
 E. foreign bodies in eyeball, 289
 Jackson, A. antipyretic drugs, 1292
 Jane's method of irrigating ure-
 thra, 412
 Janeway, E. G., typhoid fever, 1223
 Japan, diseases of, 1238
 foreigner's status in, 1238, 1304
 James, W. K., infections of ear, of fever, 1524
 W. K. Klebs-Loeffler bacillus, 1099
 Jaundice which persists, 698
 jaw, amputation of, 97
 Arterial, 352
 dislocation of, 1034
 Jejunostomy, 746
 Jelks, J. L., appendicitis, 1041
 J. L., hemorrhoidal complica-
 tion, 977
 J. L. Rectal curiosity, 1421
 Jepson, S. L., flow Control Val-
 vule, 1590
 Wm., automatic drainage, 950
 Joachim, O., mastoid disease, 1493
 O., occluded nares, 1493
 Johnson, J. T. Address, 1615
 W., disinfection, 1223
 Joint (see bone).
 and bowlegs, 661
 disease and neurosis, diagnosis, 1220
 tuberculous, treatment of, 903
 joints, functional affections of, 227
 rheumatic, treatment of, 1076
 sprained, after treatment, 478
 Jones, F. A., pleurisy with effu-
 sion, 1422
 F. A., progress of medicine, 1419
 P. M., lupus, 162
 W. P., anesthesia, 670
 Journal, and Canadian Med. Assoc., 651
 Journalism, medical, and aims, 397
 Journalism for donation, 306
 Judgment, reverses, 1310
 Judson, C. F., pneumonia, 101
 Jurist, doctor as, 30
 Jury, should have been referred to, 928
 KAHN, S. G., hydatidiform mole, 413
 Kait suture in cataract extrac-
 tion, 30
 Keeley's cure, parabes must pay for, 303
 Keen, W. W., on appendicitis, 121
 W. W., members of profes-
 sion, 1618
 Kelper, G. F., cataporesis in trachoma, 219
 G. F., mastoid operation, 977
 Kelley, S. W., attitude in chil-
 dren, 892
 Kelly, J. C., extrauterine preg-
 nancy, 666
 H. A., poisonous serpents, 1494
 Kemper, G. W., a pathologic dermatomy, 504
 Keogh, P. S., autointoxication, 482
 Kern's sign, 1514
 Kern's sign, diagnostic value of, orthoform in, 1413
 Kern's sign, diagnostic value of, 73
 Kerr, A. A., hemophilia, 413
 W. W., purpura hemorrhagica, 1428
 W. W., typhomalaria, 1425
 Kidney cysts, three rare, 860
 diseases, 225
 floating, 352
 floating, simulating genital diseases, 1149
 floating, 344
 hydronephrotic, rupture of, 1352
 Incision and disease, 1488
 movable, 195
 movable, medical treatment of, 822
 surgery of, 1422, 1603
 tuberculous of, 474, 1650
 Kidneys (see degeneration, hemipar-
 taria, hyperemia, hyperne-
 phrosis), 191
 after occlusion of renal ves-
 sels, 910
 anesthetics and, see
 anesthetics on effects of, 1482
 cystic degeneration of, 722
 including parenchyma, influence, 601
 Kiernan, J. G., human face and jaws, 81
 J. G., maternal impressions, 1491
 J. G., mental and nervous as-
 pects, 483
 J. G., conservative sur-
 gery, 1041
 King, C., hysterical deaf-mutism, 1483
 Kissing honey, the, 160
 "bug," 220
 Klebs E. alpha-beta, 1520
 Klebs E. alpha-beta conditions
 W. N. which obstruct, 1099
 Knee extensor apparatus of, in-
 jury of, 1652
 joint, loss of, in diabetes mel-
 litus, 110
 Joint, Hew's derangement of, 98
 Joint, operative treatment, 474
 Knee-joint, tuberculosis, resection for, 373
 Knife-blade in orbital tissues, 1495
 Knopf, S. A., pulmonary tuber-
 culosis, 1445, 1482
 S. A., treatment of consump-
 tion, 1166
 Kohneke, L., pure food, 548
 Kolschler, G., face presentations, 1424
 Krausius vulva, 1215
 Krauss, Wm., a novel device, 214
 W. St. Joseph's hospital, 1419
 Kreuzmann, C., extrauterine pregnancy, 1426
 Kriebel, E. G., milk from tuber-
 culous cows, 1237
 Kyle, J. B., nasal cavities and dental lesions, 890
 J. J., nasal stenosis, 970
 LABA, elephantiasis of, 1215
 Labor (see abortion, cyst, face, hospital, pelvis).
 complications, 405
 constriction of membranes in, 403
 difficult, 1309
 disturbances, mental aberration and, 865
 early conception following, 1114
 first stages of, 1483
 in abnormal pelvis, 29
 indication for contracted pelvis, 124
 in pelvic deformities, 658
 management of, 1216
 posture in, 21
 premature, 157
 rigidity of soft parts during, 1552
 rupture of uterus during, 266
 uterus at onset, 278
 Laboratories, hygienic, 1223
 Laboratory hygiene, V., 97
 Ont., Board of Health, 155
 Laceration of uterus, vagina, etc., 288
 Lacerations of pelvic floor, repair of, 1450
 perineal, 659
 Lactic acid (see vaginitis).
 La rryne (see also influenza), 1461
 Laikes as health resort, 1540
 La Motte, strabismus, 1321
 Landry's paralysis, 169
 Language, international scientific, 661
 Lanolin in reduction of glands, 1143
 Laparotomy, nasal operation method in, 1665
 Laparotomies, adherence after, 929
 a thousand and one, 909
 Larynx (see tracheitis).
 diphtheria, intubation in, 1114
 Laryngology, X-ray in, 983
 Larynx (see pemphigus).
 angions of treatment, 476
 cancer of, statistics, 87
 glands in, dyspnea, from, 795
 syphilis in, secondary, 280
 tuberculosis of, manifestations of, 1608
 tuberculosis of, aetogenesis, movable (see tracheitis).
 laughing an aid to expectorating, 280
 Laufenbach, L. J., adenoids, 1261
 Lavage, abdominal, through vagi-
 na, 1053
 of blood, 1067
 Lavran boys and birds, 1545
 Lavender, W. R., pneumonia, 1425
 Law, anti-slipting, an enforced, 675
 judge-made, 1431
 Mich., "Christian Science," 1498
 repeated, Oregon, 239
 Texas medical, 1311
 laws, Michigan medical, 233
 Lawton, E. E., neurasthenia, 1116
 Laxative elixir, 394
 m., 344
 Lazard, Jules, transposed viscera, 1402
 Leal, J. J., typhoid from water-
 supply, 1250
 LeBeuf, I. G., unilateral hyper-
 drosis, 671
 L. G., visceral transposition, 102
 Leclithin, action of, 1042
 Lecture, 536
 on medical coups, 341
 Lee, Penj., camp garbage, etc., 1291

- Lee, Benj., on Pennsylvania health matters, 223
 Legislation, army, suggested, 1506
 ASSOCIATION committee on, 1237
 in Ga., 1659
 medical, 217, 361
 medical, uniform, 799
 National committee on, 1116
 Leich, M., milk supply, 1611
 Lenke, A. F., brain tumor, 282
 A. F., tuberculosis and intrapleural injections, 959, 1023, 1077
 Le Mond, R. F. eye work 481
 Lens and cataract formation, 1225
 diseases of, credit to Marlow, 1564
 opaque, rendering, 1616
 removal in high myopia, 1485
 removal in myopia, 145
 Leper home of La., 1291
 Lewis, emigration, 1113
 Lepra, infection in, 1633
 Lepride of palm, 1031
 Leprosy (see Hawaiian Islands, Leucocyte balance reports), and plaque, report on, 1310
 case of, 1427
 Cutaneous area in, 7739
 congress, French, 347
 contagious, 1651
 curable? 723
 in Madeira, 1037
 and syphilis and, 1048, 1239
 treatment of, 1160
 Lesas, intestinal, with operations, 1191
 Leucemia, acute, nature of, 790
 influence of infectious diseases on, 1547
 splenomedullary, 152
 splenomyelogenous, 794
 Leucocyte balance reports, 1476
 Leucocytes and bacteria-dissolving substances, 2221
 role of in immunization against typhoid, 1476
 Leucocytosis, history and pathology, 291
 Leucoderma, syphilitic, 1350
 Leucorhea, for, 1282
 lacteal acid in, 1780
 Leucostrophic syndrome, 1545
 Leucostrophic acid, 790
 Levy, R., laryngeal tuberculosis, 707
 Lewis, D., plea for the outcast, 559
 D., women and life insurance, 1635
 Libel, suits for, 1303
 Library of surgeon-general, 1377
 Licéno, E. L., yellow fever in Mex., 1222
 Licenses to physicians, 1437
 Licensure, medical, reciprocity in, 295
 medical, resolution on, 1226
 Lichen ruber planus, 794
 Lichty, J. A., uric acid and midline, 1046
 Lids, edema and pustula of, treatment, 1053
 Life expectancy and mental disorders, 1618
 Insurance (see Insurance), insurance and suicide, 177
 Life span of, 291, 401
 Lifter, automatic, 280
 Ligature (see sora, sutures), material, an absorbable, 99
 slipping of, 477
 Ligatures, 1166
 Light from walls, 716
 Lillith, I., purulent pericarditis, 1422
 Lime, chlorid of, externally, 1410
 Lincoln, C. W., antipneumococcus serum, 1046
 Lindsay, W. S., physician and druggist, 918
 Lindner, R., hemoglobin estimation, 19
 Lip, cancer of, 663
 Lipemia in diabetes mellitus, 1046
 Lipoma, 216
 Liquid air in medicine and surgery, 612, 477
 Liquor at students' banquets, 1627
 Listerine, unwholesome, 1441
 Litheric habit, 853
 Lithiasis, biliary, 346
 Lithology, 1615
 Lithopedion, 1046
 Liver (see ankylostomiasis, degeneration of, steatosis), abscess of, exploratory-operative process for, 603
 abscess of, topic, 34
 Liver, abscesses of, migrations of, 858
 affections, blood changes in, 1224
 and biliary tract, wounds of, 982
 cavities in, 1612
 cirrhosis of, ascites from, 222
 cirrhosis of, bronzing in, 1651
 cirrhosis of, etiology of, 675
 glyco-genic function of, 976
 insufficiency, diabetes from, 485
 insufficiency of, 797
 neoplasm of, 784
 resection of, 784
 sheep's injection in hemeralopia, 476
 Lochboeher, G. J., study of cobain, 1307
 Lockart, F. A. L., uterine fibroids, 1224
 Locomotor ataxia, 1355
 ataxia, complicated, 234
 ataxia, diagnosis of, 1282
 ataxia has no relation with syphilis, 630
 London letter, 304, 369, 432, 539, 618, 680, 742, 805, 1177, 1438, 1563, 1627
 Long, E. H., 493
 Long, E. H., U. S. pharmacopoeia, 1465
 Longevity, alcohol and, 988
 Longstre, H. W., shortening of round loganotes, 914
 Los Angeles notes, 1050
 Louisville notes, 115, 1181, 1502
 Love, J. N., appendicitis, 1042
 indeed blind, 1504
 Minnie C. T., hysteroclepsy, 290
 Lowman, J. H., gall-stone, 1359
 J. H., whooping-cough and ticks, 1255
 Lumbar puncture in meningitis, 273
 Lunacy and crime in Quebec, 1114
 Lunacy in Ontario, 1179
 Lung abscess following pneumonia, 1420
 abscess of, surgical treatment, 1224
 calculus in, 434
 carcinoma of, diagnosis of, 1417
 diseases, local treatment, 405
 fibroid, from duct, 1034
 gangrene of, 1034
 gymnastics, 660
 protecting action of, 731
 reflex, 1413
 surgery of, 36
 Lungs (see surgery), Edema (see thoracocentesis), 1418
 foreign bodies in, 405
 Lungs, removal in, 1410
 case of, 162
 erythematosis, 273
 hot air in, 152
 potassium permanganate in, 53
 treatment of, with fluorin, 654
 tuberculosis in, 1345
 Lyon, J. F., adenoma of urethra, 1211
 Lypsen, H. M., brain tumor, 281
 Lymph, Roberts' 716
 Lymphadenitis, surgical treatment of, 1095
 Lymphangiomas, swellings in, 477
 Lymphathic diathesis, 41
 Lymphemia, acute, 542, 1288
 Lymphema, tuberculous, 550
 Lyon, J. P., capacity of bladder, 1515
 McArthur, L. L., pancreatic cysts, 503
 McClunhan, H. M., constipation in infants, 943
 McClintock, C. T., enzymes and enzymes, 1046
 McCone, J. F., injections to locate fistula, 734
 McConnell, J. F., where send fistula, 702
 McCosh, A. J., gall-stones, 694, 871
 McCall, J. C., embryology and Cesarean sections, 224
 McCurdy, S. L., cleft palate operations, 1061
 McFarland, J., antipneumococcus serum, 1534
 McGill, J. D. traumatic neurasthenia, 224
 McGill's new professor, 743
 McMurry, L. S., address in surgery, 970
 L. S., recto-genital fistula, 1550
 L. S., temperature after operations, 1044
 McTae, F. W., abdominal surgery, 1615
 McLaughlin, J. O., recurring pharyngitis, 1385
 McVeay, R. E., gonorrhoea, 918
 MacLaren, W. S., drainage of appendix, 1265
 Magnesia, sulphate of, 1258
 Magnetic healing, 921, 930
 Mainegra, R. J., umbilical hernia, 734
 Makuen, G. H., defective speech in children, 1550
 G. H., treatment of vocal defects, 888
 Malady, Z. T., ligatures and sutures, 916
 Malacostoma, 1565
 (see children, meningitis, mosquito, phenocoll).
 and lime, 239
 at Camp Mount, 1603
 and eye disease, 1606
 comatose, 405
 double tertian and estivo-aural, 1000
 etiology of, 986
 expedition, report of, 973
 extermination of, 168
 expiration of, 220
 hamaema in, 1162
 hemoglobinuria, in U. S., 252
 in an infant, 274
 in Canada, 1115
 in children, 357, 96
 inoculation theory of, 33
 in Sudan, 232
 Koch's investigations of, 929
 mosquitoes and, 417
 pernicious, 823
 pernicious, hydrotherapy in, 541
 prophylaxis of, 1355
 quinia in, 248, 253, 1042
 treatment, 218
 treatment of chronic, 786
 Malariation, anemia, cachexia, guaiacol, hemoglobinuria, melania, toxemia), (see fever, hemoglobinuria), ever, pernicious convulsive, 159
 fevers, treatment of, 1346
 infection, chronic, 217
 Malignant (see sigmoid), disease (see nose), disease and removal of ovaries, 1346
 disease of digestive system, 342
 growths, Coley's serum for, 1350
 Malpractice, 1295
 Malta fever, and agglutinating substances, 857
 Mammary gland therapy, 1285
 inflammation, for, 593
 Mammitis, gangrenous, 476
 Mangoldt's method of grafting, 476
 Mania, acute delirious, 1602
 Manilla, medical news from, 303
 Marcy, H. O., hernia, 1229
 H. O., milk preservation, 716
 Marine-hospital changes (see public health reports), 116
 Marriage, dementia and, 1411
 gonorrhoea and, 487
 regulation of, 987
 Marshall, J. S., stonatitis, 1593
 Martin, E. H., grain of truth, 1419
 T. C., act of defecation, 37
 T. C., obstipation, 1041, 1421
 Mass, Stone, 1243
 Masson, E. G., spinal paralysis, 1203
 Massage (see glaucoma), and blood pressure, 34
 heat, 1438
 mercury bath for, 872
 of stomach, 53
 Masseu, intratympanic, 927
 Messy, G. B., cataphoric treatment of cancer, 626
 Mesititis, chronic, 410
 Mesitoid complications in children, 32
 disease, 481, 795, 1091, 1493
 operations, 977, 1168
 process, evulsion of, 1608
 wounds and ear disease, carbolic acid in, 661
 Nastic, 187
 fractured base with, 1189
 Matus, R., extrophy of bladder, 210
 R. Harris' uric segregator, 1160
 R. Intubation apparatus, 1550
 process, evulsion of, 1614
 Maternal (see impressions, in-ebriety).
 Maternal impressions, 96
 Mathews, J. M., rectal spasm, 37
 Matrimony, 725
 May, W. S., country practice, 1165
 Maydl's operation for esophyrosis of bladder, 246
 Mayer, E. B., hysteria in children, 945
 E., tonsils as portals of infection, 1381, 1491
 Mayo, W. J., stricture of esophagus, 243
 Measurements, value of, 166
 inspection, 806
 preservation of, 809
 red and white, 1430
 white and red in diet, 1486
 Medals, ASSOCIATION and Senn, 1108
 Medicinals, chronic cases, 221
 Medical (see act, advertising, contracts, education, examiners, heroism, licensure, practice, practitioners), confidences, 1431
 defense union, value of, 749
 education, progress of, 1570
 News, 49, 119, 175, 234, 297, 363, 423, 490, 555, 613, 677, 740, 801, 867, 923, 990, 1051, 1117, 1175, 1203, 1308, 1455, 1500, 1558, 1626, 1657
 officers, power of, 1178
 organization, 922
 practice decline of, III, 1497
 practice, druggists and, 1571
 practice, oversupply of, 740
 services, no pay, 175
 service of militia, 1026
 tribunal, 1164
 Medicine, 661
 (see specimens), advances in, 540
 advances in, recent, 664
 and surgery, progress in, 355
 and the public, black and, black ants in, 31
 "Cheap John," 737
 double stars of, 747
 evils of, 1042
 expansion of, 97
 in far East, 1238
 progress, problems, prospects, 462, 525, 588, 679
 modern, landmarks in, 723
 progress of, 1419
 Medicine-Chief, Faculty of Md., 1360
 Medical question, 490
 Meigs, A. V., cavities in liver, 1612
 A. V. endophthalmitis, 1362
 Melancholia, 341
 digestion in, 1159
 suicidal, in, 1613
 Melanin in blood plasma in malaria infection, 731
 Memorials, 806
 Melanos (general), 95
 Melvin, J. T., rural sanitation, 288
 Mendenhall, W. O., do we need to think? 1103
 Meninges, arsenite of copper in, 344
 cerebrospinal, 42, 102, 188, 558, 603, 621, 622
 cerebrospinal, antistreptococcal serum, 1538
 cerebrospinal, antistreptococcal serum in, 1416
 cerebrospinal, clinical histories, 341
 cerebrospinal, Credé's ointment in, 237
 cerebrospinal, diagnosis, 31
 cerebrospinal, epidemic, 1283, 1314
 cerebrospinal, epidemiology and bacteriology, 412
 cerebrospinal, eye and ear, in, 1416
 cerebrospinal, in Ontario, 618
 cerebrospinal, intrauterine epidemic, 662
 cerebrospinal, lumbar puncture in, 273
 cerebrospinal, nerve-cell changes in, 1416
 cerebrospinal, potassium iodid in, 274
 cerebrospinal, purulent, 412
 cerebrospinal, tetrag, micro, in, 1157
 cerebrospinal, unusual features, 187
 cerebrospinal, vs. malaria, 757
 forms of, 1608
 from typhoid bacilli, 1349
 Kernig's sign in, 151
 otitic, purulent, operation, 411
 otitic, treatment of, 1486
 virus, 1416
 Menopause (see hemorrhage), artificial and natural, 1161

- Menopausal, dangers of, 1156
disorders of, 340
Menorrhagia, treatment of, 1479
Menstrual disturbances, specific
for, 425
Menstruation and tuberculosis,
170
by ear, 365
cancer of, 539
following hysterectomy, 1349
in nursing woman, 409
Mensuration and capacity of
uterus, 132
Mental (see nervous).
aberration and labor disturb-
ances, 865
diseases and life expectancy,
1655
disorders, bed treatment of,
1653
disorders, functional, 1355
disturbance, rheumatic, with
chorea, 792
suggestion and charlatanism,
152
Menthol, vapor, 1093
Menthol-bath, 1093
Meyer, W., chest-piece for
stethoscope, 1620
Mercury, use heart, injections,
(see pills)
bath for massage of hand, 872
in urine, method of determin-
ing, 279
treatment, new method of,
1545
Metatarsal, two cases, 98
Metastasis, internal hemor-
rhoids, 796
Methylene blue in insanity, 796
blue in therapeutics, 160
Methylo, uterine sclerosis and,
1634
Metrorrhagia, ipsec in, 1477
Meyer, Peter von, 1629
Meyers, Hans Wilhelm, 357
Meyers, D. C., Jacksonian epi-
lepsy, 1495
Microbes (see health, society).
deaths in, 747
medical laws, 233
Microbe a factor in evolution, 652
Microbes and blood, 1483
in blood, frequency of, 412
Microcephalus (see cranioctomy).
Micrococcus, intertriginosus Ros-
bach, 1695
Microscopic demonstration, 1104
Midwife, a midwifery, 743
Midwife in check, 558
Migraine, 829
milky acid and, relation of, 827
Milibic, F. S., rhemoiditis, 1230
Milk, properties, 1622
Milk albumin a cheap food,
as carrier of infection, 1541
bacillus diptherie in, 856
diet in diabetes, 1546
from tuberculous cows, 1237
how modification of, 1218
hemolized, 561
mercury in, 1376
microbes in, 676
Milk, preservation of, 716
preservative, formaldehyde as,
1629
preservatives, 1416
separation of bacilli from, 535
serum in serotherapeutics, 410
supply, supervision of, 1611
toxic human, 1659
tuberculosis through, 988
Milked from, 1249
Mill, G. W., flexion and extension,
227
Miller, C. J., deformity at birth,
102
C. J., donche nozzle, 1104
C. J., ossified tendons, 1550
C. J., streptococcal fibroma, 2493
T. N., cerebrospinal meningitis,
188
Mink, A. E., cerebral localization,
103
Minneapolis notes, 1659
Minney, J. E., eye trouble, 1361
Mintz, E., Graves' disease, 1042
Miscellany, 53, 114, 175, 302, 367,
428, 494, 528, 622, 684, 746,
808, 874, 958, 994, 1053,
1118, 1183, 1249, 1360, 1376,
1411, 1504, 1556, 1632, 1661,
1670
Mitchell, G., multiple fibroid, 1361,
1429
G. tumor of uterus, 1361
H., address, 1223
Moeller, Thor., ventrosuspension
of uterus, 1677
Moffitt, H. C., leprosy, 1427
H. C., thyroid in myxedema, 414
Molluscum fibrosum, 792
Monstrosity, human, 1419
or double fetos, 131
Mordwilko, W., incubation
in syphilis, 482
E. B., typhoid in children, 1103
E. E., removal of ovaries, 751
H. H., Soc. for Prevention
of Consumption, 90
Montzambert, F., formaldehyde
disinfection, 1621
Moody on physicians, 988
Moore, A., monstrosity, 1419
Morbus, cerebri, 786, 1050
Morgan, F. C., purple indigo, 1225
J. B., angina pectoris, 22
Morphism on evacuation of urine,
482
transmissibility of, 1415
Morphism among physicians,
1155, 1173, 1304
chronic, treatment, 391
morphomania and, discussion
on, 591
cervical, 288
Morphomatia (see morphinism).
Morris, R. T., dermatoid fistula, 912
E. E., treatment of appendicitis,
117
Morse, W. F., waste disposal, 1202
Mortality statistics, Chicago, 1561,
1622
statistics of coming census, 1921
statistics, Phila., 54, 179, 302,
367, 718, 1625
Mosquito a host in malaria, 1420
origin of malaria, 748
Mosquitoes and malaria, 417, 908
extermination of, 1546
kerosene and, 369
Mouth (see disinfection, pen-
cillin, syphilitic)
and tongue inflammations, 93
Mouths, proposed examinations of,
1629
Movements of army and navy
medical officers (see public
service).
Moy, J. H., mental disease and
life expectancy, 1655
Mucligiosa, action of, 1097
Mucocoe (see sinus)
Mucosa, necrotic attaching,
method of, 1219
Mudd, H. H., resolutions on, 1374
Mumps, primary infection of soft
parts in labor, 1532
Mumps, primary testicular, 963
testicular, primary, 1114
Munich, C. F., mortality of diph-
theria, 1522
Murder trial, 1351
Murmur, subvalvular, 1032
Murray, see, 1421
after racing, 1421
anemic, 139
lesions of, 1251
functional cardia, 1215
systolic mitral, 139, 302
Murphy button, dangers of, 36,
130
hutton, modification of, 905
button, resection with, 1193
F. E., text-books on eye, 271,
401
operation, plasters in lieu of,
290
W. E., chronic indigestion, 1230
Muscr voltantes, 133, 337
Muscle affections, 31
cardiac, degeneration of, 1487
Myocarditis, 1250
Muscular development as cure of
hernia, 35
Muscle centers, localization of,
231
Mussou, E. E., glands, 1320
Myngria, for, 654
Myositis fungoides, 1250
Myositis, ephthalmitis, 153
Myocarditis, for, 1028
Myositis, for, 1620
Myodroma, ergot, morcellation,
etc., for, 452
Myoma, Cesarean section from,
103
Myomata, uterine, and pregnancy,
542
Myomectomy (see hysterectomy).
Myositis (see myositis)
Myopia, excessive, when operate,
1128
Myopic operations in, 145
high, lens removal in, 1485
high, surgical treatment of,
1467
operative treatment, 144, 220
Myositis, gonorrhoeal, treatment
of, 1280
hemorrhagic, 280
Myxedema, 982
Basedow's disease and, 1038
"colloid material" for, 98
Myxedema, early diagnosis of,
1957
thyroid extract in, 414
Myxomatosis (see degeneration).
NAPHTALIN on burns, 1477
Nail, ingrowing, treatment of,
1154
Narcosis, alcohol, 1652
Nasal, see, of, 279
chloroform, symptom, 494
new method of, 273
Naris, occluded, 1493
Nasal, (see asthma, catarrh, in-
fections, ocular and orbital
disease) and, 1654
nasal, polyp, septum, stenosis,
cavities and dental lesions, 890
chamber, anatomic variations of,
951
deformities, correction of, 94
mucosa, edema of, 273
septa, treatment of, deformed,
1498
septum, deflection of, treatment,
1531
Nasal, asbestos and, 176
Nasopharynx, tumor of, 1093
Nasopharyngeal (see adenoids,
eye), 482
Natal, 600
National expansion, 1108
Nausea, influenza with, 1086
to prevent, 1028
Navy (see army).
medical officers' movements (see
public service).
Nephritis, glomerular, 345
Necrology (see deaths and obitu-
aries).
Needle-holder, improved, 542
Needle, near Poupart's ligament,
1533
Negro, ear, nose and throat dis-
ease in, 1419
Nelson, D. T., shock, 1015
Neonatal life, physiology of, 1245
Neonatorum, cephalhematoma,
protargol for, 1154
Nephritis, cerebral, thyroid in,
406
Neoplasms, 659
Nephritis, acute, 113
cantharides in, 1154
chronic, 1251
chronic, malarial, 407
fatal from wood-sorrel, 346
heart in interstitial, 134
hematuria in, 1376
plastic surgery in, 220
tuberculosis and, 1326
without albuminuria, 537
Nerve-cell changes in meningitis,
157
Nerve-cells, fatigue on, 1219
lesions of, 1251
Nerve, depressor, relation of, 215
diseases, peripheral, functional,
83
radial, suture of, 1289
stimulants in pregnancy, 660
stretching, varicose ulcers and,
167
Nerve in infectious diseases, 43
peripheral, injuries to, 475
regeneration of, 972
Nerve, in fracture of, 1377
Nervous (see enteroptosis, gas-
tralgia).
agitation, for, 1028
Nerve, union of fractures, 99
disease, simulated mental and,
724
diseases, atypical features, 535
diseases, curability and thera-
peutics, 82
diseases, functional, 1351
diseases, pelvic disorders and,
853
diseases, treatment of medical,
397
disorder in children, reflex, 539
disturbances, gastro-intestinal,
1288
diseases, 799
husbands, nagging wives and,
673
reflex, 1022
system, 1032
system, disorders of, 147
system, gonorrhoeal disease of,
699
system in lead poisoning, 1609
system in tuberculosis, pathol-
ogy of, 663
troubles, suspension treatment,
35
Neuralgia, osmic acid in, 1353
epidemic, 1414
for, 493
forms of, 1421
intercostal, epidemic of, 1230
Neuralgia, ovarian, dysmenor-
rhea and, for, 601
Neurasthenia, treatment of, 305
exercise cure, 536
traumatic, 224
Neurasthenic headache, for, 238
Neuritis, fibrositis, 1376
hemiplegic from carbonic acid,
1633
peripheral, in diabetes mellitus,
410
spinal, 1024
Neurology and psychiatry, prog-
ress of, 308
lessions in, 217
Neuroses, functional, glycerophos-
phate of soda in, 1538
and psychoses, toxic origin of,
907
from oophorectomy, 970
gastric, for, 190
joint disease and, 1229
reflex, 904
with pharyngeal hemorrhage,
1498
Neurotic family element, 1364
Neurotic diet, 515, 680
Nevus, 1202
Nevus, hairy, removal of, 1553
New-born, morbid states, 1245
New instruments, 744, 808, 881,
927, 1242, 1308, 1376, 1630
Newman, H. F., extirpation of
uterus, 1457
H. F., Paris, 1112
H., galvanocauteric instrument,
1293
Newmark, Leo, springomyelia, 916
New names notes, 1560, 1625,
1659
New remedies, 474
New York City, notes, 241, 1181,
1205, 1375, 1436, 1501, 1502,
1626, 1659
medical items, 685
medical practice in, 94
Nicholson, W. P., gangrene simu-
lating appendicitis, 1615
Night sweats, camphoric acid for,
1028
sweats of phthisis, alcohol in,
1410
terrors, 537, 1091
Nihilism, causation of, 663
Niles, H. D., peculiarities, of
peritonium, 1009
Nitrite, therapy of, 1350
Nitrogen requirements of body, 95
Nitrogenous metabolism and with-
drawal of blood, 1547
Nomenclature, 1285
Norton, C. E., capillary circula-
tion in retina, 1334
Nose (see antrixia, electrolysis,
adeno-)
adenocarcinoma of, 726
and brain disease, 94
and throat, malignant disease
of, 84
bleed, early symptom of brain
softening, 743
bleed, treatment of, 905
inflammation of, and dipther-
ia, 1607
sarcoid of, 33, 406
Nuclein in tuberculosis, 407
Nuclein of alloxoric bases to, 629
Nucleus, contraction of, 1377
Nudity, climatology of, 600
Nurse as anesthetizer, 809
female, in army, 1432
Nurses, control of,
in typhoid, 1413
responsibility, 1556
Nursing, 319, 1179
Nursing bottle, cholera infantum
and, 51
bottle, death-dealing, 319
Nursing care, emergency, 790
injuries of eye, 928
teaching, 970
Obstetrics and heart disease, 1216
anesthetic, 908
diagnosis in, 93, 403
finger-cut in, 1036
prophylaxis in, 153
study and teaching of, 510
Obstipation, 1651
and parapneumonia, 1421
and radical treatment, 1041
Obstruction, intestinal after ab-
dominal section, 164
intestinal, following hysterect-
omy, 1098
intestinal, two cases of, 917
obstructions, intestinal, 723

- Occupation stress, degeneracy or, 229
- Ochsner, A. J., appendicitis, etc., 192
- A. J., fibroid of uterus, 916
- Ocular disease and nasal affections, 1654
- prosthesis, 481
- symptoms of sinus lesions, 408
- Oculist, general practitioner and, 294
- Officers, Am. Public Health Assn., 1292
- Am. Temperance Assn., 42
- Minn. State Med. Soc., 37
- of Am. Neur. Assn., 36
- of Del. State Med. Soc., 36
- Ind. Ter. Med. Assn., 36
- of N. J. State Med. Soc., 100
- St. Louis Med. Lib. Assn., 37
- Soc. for Prevent. of Consumption, 28
- Soc. Dak. Med. Soc., 36
- Tri-State Med. Assn., 36
- Ogston, Alex., medical services of army and navy, 604
- Ogston's criticisms, 866
- Indictment of army and navy, 680
- Ohls, H. G., empyema of antrum, 121
- Old age, liver, test of, 96
- Oil, see, 1036
- age and criminality, 1655
- Oliver, J. C., amputation in aged, 795
- J. C., treatment of aneurysms, 629
- R. A., surgical cases, 1421
- Ontario medical council, 475
- Operating, house-to-house, 912
- Operation, preparation of abdomen for, 1155
- Operations, abdominal, purgatives after, 239
- abdominal, siphon puncture in, 16
- abdominal, some, 95
- aseptic, bacteria in, 223
- intranasal, complications of, 852
- Intraperitoneal, temperature after, 1044
- rectal, complications from, 632
- surgical, complication following, 507
- Ophthalmia, gonorrhoeal, treatment of, 654
- neonatorum and blindness, 1566
- neonatorum, prevention of, 999
- Oxy-burn, 907
- suprarenal extracts in, 340
- sympathetic, operation in, 153
- contributions, 1351
- practice in Philippines, 1413
- Ophthalmitis, sympathetic, irritation and, 972
- Ophthalmology, (see congress), and general medicine, 217
- animal extracts in, 245
- price of, resolution, 427
- silver salts in, 404
- Ophthalmic, S., occupations and the pharynx, 1230
- Optic neuritis from miasmata, 541
- Optical diagrams, 271, 401
- Oral (see auscultation).
- Orbit, sarcoma involving, 1201
- Otitis, disease and nasal affections, 1654
- tissue, knife-blade in, 1405
- Oregon law repealed, 229
- Organize, unite, centralize, 1234
- Organism, defensive reaction of, 1182
- Organotherapy among ancient Greeks, 1504
- in gynecology, 274
- in medicine, 30
- Orthopedic cases, 490
- surgery, lectures on, 218
- Orthoform in keratitis, 1413
- Orthopneumia, (see, 1086)
- Oss, Imperforate, 968
- Oster, Wm., home treatment of consumption, 1860
- Wm. typhoid fever, 1165
- Osmic acid (see neutral).)
- Osmotic tension, 543
- Oswald, A. M., evils of medicine, 1103
- Ossicles, ovary, bone conduction and, 1074
- Osteoarthritis, spinal, 474
- Osteoma, muscular, 99
- Osteomalacia, masculine, 279
- Osteomyelitis, (see, 1020)
- of vertebrae, 1361
- semester from, 1309
- tubercular, 406
- Osteotome want to give medicine, 420
- Osteopathy, etc., 403
- In Ga., 1659
- Osteopathy in Ky., 1435
- Osteotomy, 1067
- Otis, E. O., tuberculin test, 1074
- Otitis, chronic, enzymes for, 1046
- contagiousness of acute, 701
- in influenza, sinusitis and, 1189
- media, 602
- media, abscesses following, 1181
- media, catarrhal, acute and chronic, 1588
- media, catarrhal, intumescent, 1584
- media, chronic suppurative, 599
- media in pneumonia, 409
- media, intestinal disturbances by, 470
- media, purulent, acute, 1583
- media purulent, chronic, 1584
- media purulents, complications, 1143
- media, tubercle, cirrhotic or atrophic, 1584
- media without pain, 1550
- of exanthemata, 97
- Otology (see congress).
- Otorrhea, formal in sinusitis and, 1409
- rhinorrhoea and, 1170
- Ott, I., diseases in schools, 26
- Ovarian (see Credé, hydromenorrhoea, parotid, tumor).
- Ovarian, treatment of, 238
- disease, parotid extract in, 402
- Ovaries (see ovaritis, sclerosis, tumor).
- and mammary glands, interaction of, 1037
- cancer of, 734
- cystic, unique case, 467
- cysts of, dermoid, 603
- does removal of exert beneficial influence, 751
- transplantation of, 596, 805
- transplantation of, uterus after, 731
- Ovariotomy, early, 512
- Ovaritis, degeneration of ovaries and, 752
- Ovary and sigmoid, carcinoma of, 852
- appendicitis and disease of, 192
- carcinoma of, 657
- colloid degeneration of, 1218
- dermoid cyst of, 983, 1489
- solid tumors of, 868
- transformation of, 105
- Overexertion, voluntary, 494
- Owen, E., ununited fracture, 479
- J., treatment of sewage, 1811
- Oxygen, acid and diabetic coms, 279
- as antiseptic for gas, 1149
- anal, stimulations of, 273
- habit, is there an, 1233
- therapeutic value of, 660
- with ether anesthesia, 93
- Ozena, 105
- Ozena and sinusitis, 791
- treatment, with citric acid, 719
- Ozone in tuberculosis, 81
- PACHYMENINGITIS, cerebral menorrhagic, 1088
- menorrhagic, 1088
- Packard, F. A., cerebrospinal meningitis, 1362
- G. R., affections of joints, 223
- Pain, chronic, 723
- and vesical spasms, for, 597
- gastric, for, 901
- anal, value of, 1109
- phenomenon of, 984
- Palate, cleft, operations, 1061
- soft, tuberculous perforations
- Painful, cone of, 680
- Palpitation, abdominal, treatment, 97
- Palpitations, abdominal, for, 594
- Painless, sensorimotor, 1688
- Palsy, artisan's, results, 215
- isolated, abdomen, 1613
- Painless, (see, 1086)
- alimentary glycosuria and, 1417
- disease of, 647
- syphilis of, 1417
- Painful, (see cysts, humor, rheg).
- Pancreatitis, 1350
- as a symptom, 1012
- Papillitis accompanying brain tumor, 1579
- Paralytic, experiments with, 729
- Paralysis actans, 156, 1540
- actans and sarcoma, 1215
- and sclerema, 1012
- concentric, general, 909
- diphtheritic, after antitoxin, 729
- facial, 1088
- facial, antenatal factor in, 1248
- facial, fractured base with, 1189
- Paralysis, facial, salicylate of sodium in, 492
- following aneurysms, 1093
- Laundry's, 169
- of arm from birth injury, 792
- of deltoid, restoration of function, 35
- of divergence, 340
- of external recti, 1202
- of insane, syphilis and, 998
- of insane, tabs and, 1651
- of third nerve, 1216
- post-herpetic, 546
- spastic spinal, 1293
- traumatic, 1220
- vascular, lesions of, 1634
- Paronychia, multiplex, 1541
- Paraplegia, Pot's, correction of spinal deformity in, 600
- Parasites (see blood, quinin).
- Parathyroidectomy, effect of, 911
- Parathyroids, location of, 543
- Parazanthin theory of poisoning, 91
- Paraxis and ataxis, varying type, 534
- Parietal region, bilateral diseases of, 1653
- Paris letter, 1112
- Park, National, in Minn., 556
- Parry, J. T., typhoid fever, 1185
- Parker, D. L., alopecia, 1596
- W. E., passage of sounds, 1549
- W. T., guild of the misericordia, 101
- Parotid gland in ovarian disease, 852
- Parotitis, periodic swelling of, 1163
- Parotitis, treatment of, 966
- Parsons, A. W., Mexico, 1630
- Passiflora incarnata, 559
- Pasture, operation, 358
- Pasteur treatment, hydrophobia and, 303
- Pasteur's work, 466
- Pateis, ankylosed, 917
- fractures of, 342
- fractures of, suture in, 1220
- Patent medicine, women's clubs and, 295
- Patented drugs and prescribing, 169
- Patechiesia, 341, 1090
- Pathologic department, a 1564
- Pathology, 355
- and therapeutics, fragments of, 84
- exhibits at meetings, 1353, 1630
- in art, 622
- neonatal, 1245
- Patient's estate not considered, value of, 671
- secret, the, 406
- Patrick, H. T., brain tumor, 282
- Patton, J. M., foreign body in bronchus, 350
- Paul, M., intestinal obstruction, 917
- Pay for treatment, father not to, 1648
- Pearl propositions, 684
- Pearl a urinary calculus, 558
- Pearce, F. S., epileptic automatism, 1613
- F suggestion in melancholia, 1613
- Peavy, J. F., treatment of tuberculosis, 1613
- Pech, H., cocain and eucalin, 643, 1226
- Pediatrics cases, 155
- Jochimsen, 3
- instruction in, 635
- statistics, 922
- progress in, 907
- Pediatrics, H. infant feeding, 354
- T. W., chicken-pox, 1361
- Peives, abnormal, labor in, 29
- Pelvic (see adhesions, articulations, blood, insanity, lacerations, nervous, perineum, rectum, suppuration, suprapubic, surgery, vaginal).
- organ, disease of, 221
- peritonitis, 24
- Pelvis (see labor, posture).
- contracted, 93
- contracted, labor inductions for, 601
- position, elevated, 928
- pus in, 1542
- why the, 1284
- Pemphigus, folliculus, Cazenave's, 843
- of air-passages, 542
- of larynx and mouth, 1482
- Pep's, ligations of dorsal vein of, 728
- Pennington, J. R., hemorrhoids, 308
- J. R., infating rectal speculis, 871
- J. R., speculum, 1376
- Pepper, William, 229
- Peppermint is rough on rats, 1053
- Perian (see burns), 655
- Peptono (see albumose, typhoid).
- Percussion, aspects of, 476
- dorsal, 902
- Pericarditis, 502
- of, 367
- nodosa, etc., 1500
- purulent, 1422
- Pericardium and heart, wounds of, 346
- Perichondritis, syphilitic, 33
- (see lacerations, tears).
- Perineum, incised, imperforate oss and, 968
- Pileic structures and lesions of, 1018
- repair of, 537
- Peristole (see caries, sepsis).
- Pertussis (see blood, quinin).
- Peritoneum, peculiarities of, 1009
- protecting, 119
- tuberculosis of, 982
- tuberculosis of, treatment of, 1163
- Peritonitis, acute, treatment of, 1487
- diagnosis of, 1603
- etiology of, 1603
- from biliary perforation, 1280
- from colic ulcer, cured, 1488
- general, 554
- general suppuration, 472
- in child, fibrinous, 215
- irritation in, 843
- septic, saline in, 1366
- suppurative, 96
- surgical treatment, 323
- tubercular, 1156
- tubercular, iodoforn in, 1230
- tubercular pelvic, 24
- tuberculosis, laparotomy in, 1164
- tuberculosis, gastrostomy and appendicitis, 800
- tuberculosis, intestinal treatment of, 641
- tuberculosis, treatment of, 1487
- Perkins, E. A., 481
- Pershing, H. T., vertigo, 289
- Perspiration of feet, for, 1280
- Pertussis, diagnosis of, 999
- therapeutic, of, 1433
- treatment of, 1213
- Peter, L. C. pseudomuscular hypertrophy, 102
- L. C., rupture of, 102
- Peters, G. A., implantation of uterine, 660
- W. H., musca volitans, 337
- W. H., in cyst complicating labor, 1425
- R., bernia of appendix, 1407
- Phalar, G. A., ulcerative endocarditis, 983
- Pharmacology in medical curriculum, 478
- Pharmacology, British, addendum to, 743
- revision of, 1134
- scope of, 1465
- shall its scope be increased, 1660
- standardization, 44
- U. S., 274
- Pharmacy in Germany, 684
- Pharyngeal vault, hypertrophies of, 30
- Pharyngitis, acute, for, 174
- membranous, 1385
- Pharynx, granulomata of, 1329
- operation, efforts on, 1230, 1649
- tuberculosis of, 382
- Phenic acid (see tannus).
- Phenol (see materials), 719
- Phenol (see cells).
- and indol, action of cells on, 169
- Phenoluria, indennurans, and, 156
- Philadelphia notes, 54, 115, 179, 1180, 1305, 4372, 1437, 1502, 1561, 1625, 1659
- Philippine evil, 467
- notes, 994
- and India, medicine in, 1360
- orthopaedic practice in, 1413
- racion in, 1442
- Phebitis, typhoid with, 1358
- Pilegmon, sphincter anal destroyed by, 159
- Phonation, center for, 729
- Phonetics, applications of, 791
- Phosis and aphosis, corporcular, 169
- Phosphorism, professional, 53
- Phosphorous compounds, action of, 1042
- Phosphorus, matches, dangers in, making, 742
- phrosis, 477
- Photography, color, and medicine, 1256

- Phototherapy, 1040, 1372, 1605
Pinsel's, 1037, 1049
Pinta, 218
(see chancr, gonorr, night sweats, ulcers, ulcers, ulcers)
altitude in, 273
chromol in, 278
clinical prognosis of, 100
cure for, 147
diagnosis of early, 405
extract of tubercle bacilli in, 405
light and air in, 277
open-air treatment, 359, 475
rest and exercise in, 400
sulfam treatment of, 34
serofolia and, 554
Physical development in America, 111, 136
Physician and druggist, 918
as beneficiary, 1327
ined, 1053
in Germany, 1034
potentialities of, 1066
priest and patient, 535
Physician's directory, 994
surgery, 1420
first duty, 495
Physiology, 1413, 1604
Pilocarpine, 154
Plicic acid (see borax)
Picture-taking in three dimensions, 93
Piles, L. S., surgery of kidney, 1422
Pills, capsules, tablets, 1250
Pilocarpin, uses of, 600
Pilocarpine, actions of, 989
Pituitary body, tumor of, 1543
Piperazine in zonyt, 1376
Pituitary gland, of Credé, 1506
previa, 970, 1157
transmission of tubercle bacilli through, 739
Plagium extractum, 1367
Plague, 418, 1177, 1560
(see marine-bubonic reports)
Plague, leprous, report on, 1310
bubonic, 1366
causes quarantine, 49
dog, pathology, etc., of, 1609
form of, dimorphic, 742
findings in, 178
in art, 1183
in Egypt, 172
infectious, of manner of, 797
in India, 172, 1112
in N. Y., 1376, 1132
in our epoch, 1038
in South Africa, notes on, 729
investigations, inoculation
against, 135
malaria, restrictions on, 114
mode of infection and symptoms of, 931
progress of, 1505, 1635
quarantine, 1625
recrudescence and Europe, 857
suppression and, 1621
symptomatology, pathology, etc., 908
will it reach America? 106
Plants, pharmacology of, 1037
Plaster of Paris, hardening, 1117
of Paris injections, 734
Plasters in lieu of Murphy operation, 290
Plastic restoration of urethra, 36
Plea for the outcast, 559
Pleuris (see surgery)
Pleural adhesions, diagnosis of, 36
Pleurisy, 502
drug treatment of, 1212
effusion, 1422
idiopathic, 1337
infective, 1417
pulsating, 31
Pleuritic effusion in childhood, 1062
Pneumonia, 101, 998
(see blood, lung, serum, typhoid)
nervous, 113
and typhoid, 404
atypical forms of, 787
in children, 1604
blood in, 428
cardiac asthenia of, 20
complications and sequelae, 441
complications of, surgical, 723
considerations on, 435
epidemic, 969
discussion on, 506
etiology and pathogenesis of, 1095
etiology and treatment, 1225
for, 848
hydratic treatment of, 725
in children, for, 342, 849
in infants, 1317
of age, 438
Pneumonia of children, 173
opis and earache in, 409
pathology and treatment of, 1005
prognosis of, 157
salt solutions and oxygen in, 470
symptom, 853
symposium on, 1423
therapeutics of, 1073
treatment of, 274, 1246, 1650
with diathesis, autovaccination in, 791
Pneumothorax, tuberculous, 1354
tuberculous, treatment of, 1609
Pain, 158, 1661
Pain, 58
Poisoning, acetanilid, 32
arsenic, 148, and, 1218
carbolic acid, 905
digitalis, treatment, 1333
epidemic of, 560
food, 1178
food, and metallic irritants, 1610
gas, 1362
lead, 806
lead, nervous system and, 1600
mercurial and iodoforn, 969
paraxanthin, therapy of, 91
protein, on transport, 1634
strychnin, apomorphin in, 594
Poliacephalitis and poliomyelitis, 1293
Pollack, S., blackmailing, 149
Pollution of rivers, 114
Polynesian, alcoholic, 103
Polynesian, 201
nasal, enzymes, in treatment of, 1146
Polynesian, nasopharyngeal, 1495
Polymorph, 1286
Pool, W. H., beta eucain, 977
Poor, homes of, surgery in, 805
medical attendance of, 806
Porter, W. D., labor induction, 1294
Porto Rico, public health in, 1442
Port, sanitation in, 421
Ricoit busts from stone age, 872
Posset, H., neuralgia, 1421
Posterior, pharynx, adenoids of, 1224
Posture, 804
influence of on size of pelvis, 632
Potassium iodid in acne, 1285
iodid in menicilia, 274
iodid, taste disguised, 301
permanente antidote for nux
vomica, 793
permanente in dysentery, 1154
potarganate in lupus, 53
Potatoes, solarin intoxication from, 1487
Pott's (see paraplegia)
Pott's disease, modern treatment, 534
Powell, R. D., advances in medicine, 664
Practice, Cal. S. C. (),
medical, 115, 170
in Ill., 177
in Japan, 1229
in New York, 94
of medicine, does it pay? 728
Practitioner and profession, medical, 1183
Pre-emptive state, danger signals, 471
Pregnancy, extruterine, 746
extruterine, repeated, 414
Pregnancy (see chorea, fibroids, strychnin, tumors, urine)
abdominal, case of, 660
albuminuria in, 1089
Bright's disease from, 405
complicated, case, 1350
conural, 906
ectopic, 115
extruterine, 666, 1426
in nursing women, 499
management of complicated, 563
nervous stimulants in, 660
ovarian, 804, 1294
proliferative in, 1604
tuberculosis and, 478, 1441
uterine myoma and, 542
vomiting of, 153, 1617
vomiting of, cocain in, 1411
vomiting of, for, 655
with fibromyoma operation, 452
Prepuce, Bihissis of, 159
Prescriptions, 'Inguis', for sinusitis, 123
metric system in, 785
physicians', 1512
with scientific quotations, 807
Pressee, reform of the, 553
Pressure, cerebrospinal, variations in, 728
Prevention of communicable disease, 288
Price, M., appendicitis, 1494
Prieto, I., study of yellow fever, 1222
Principality, an enviable, 806
Prison, a matter of, 47
Prison, tuberculosis and, 928
Privy vaults, regulation of, 170
Prize, 1634
Craig county, 1300
Jews memorial, 53
Prizes for architects, 1626
Priest, C. O., smallpox in Ohio, 1589
Pricerow's dynamic theory of therapeutics, 1243
Production, new method in, 1161
Profession, overcrowding in, 723
Profession in Mexico, 1629
enlarged, election in, 1637
Prolapse of uterus, method in, 1161
Prolapsus of genitalia, cure of, 543
Proprietaries, place for, 896
Prostate, Bottini instrument for, in India, 248, 253
mixture for children, 1153
Quinsy, for, 174, 238
Quack advertisements, no, 1309
Quackery, possible check to, 738, 870
Quadrangle and, 359
should end, 922
wins in law, 361
Quarantine, California, 921
of tuberculosis, 801
Texas, 1172
Quarries and iron mines, 55, 115, 179, 205, 309, 434, 498, 501, 622, 750, 809, 874, 922, 1055, 1182, 1211, 1276, 1307, 1630
Questions, H. H. medical, 423
Quinin (see gonor, hemoglobinuria, malaria)
and malarial parasites, 928
in affections of eye, 1408
in asthma, 424
in gonorr, 1488
in malaria, 248, 253
mixture for children, 1153
Quinsy, for, 174, 238
Rabies, inoculating animals with, 1053
control of, 599
with bacillus diptheria, 989
Rachford, B. K., Paraxanthin poisoning, 154
Radiation, air, gases and, 994
control of, 1163
Radius, fracture of, 155
fracture of lower end of, 726, 855
Railway employees, vision, etc., in, 1002
Rain, 1002
Raines, N. F., Management of insane, 1419
Raines, B. A., Cerebellar abscess, 1181
R. A., Typhoid with phlebitis, 1358
Rambold, J., Gall-stones, 788
R. J., Real stone, 918
R. J., Ruptured intestines, 1422
Ration, army, 1507
in Philippine war, 1442
Ravogli, A., Cutaneous cancer, 1264
Raynaud's disease, 1602
Rheuma, amorphous with, 728
dressing, posture in, 216
Robert, W., aduicenes pilae, 1613
Receptaculum chyli, obliteration of, 1481
Recklinhausen's disease with strabismus, 475
Rectal (see carcinoma, irrigation, operations, specula, strictures, ulceration, ulcers)
anatomy, 1650
disease, redex symptoms and, 785
diseases and life insurance, 1655
special observations on, 1195
speculum, 37
Recti, prolapsus, amputation, 1288
Rectum, anatomosis of bladder with, 1162
and sigmoid, cancerous, extirpation of, 792
and vagina, imperforation of, 1162
excision of, attaching skin after, 1219
excision of, for cancer, 1286
pelvic examination per, 911
Red Cross work, 1563
Reed, C. A., Lawson Tait, 875
Reilly, J. H., abscess of breast, 814
R. Harvey, resins, 1650
Refraction, errors of, 969
Registration, Dominion, 681, 925
Reilly, J. H., abscess of lung, 1420
T. F., neuralgia, 1230
T. F., acute bronchitis, 163
Reims, M., abscess of breast, 814
Remuneration of hospital attendants, 1053
Renal (see blood, blood-corporules, climate, lithol, insanity, insufficiency, kidneys, stone)
complications, 504
discussion, plastic surgery in, 220
Repetitions: a comment, 1300, 1567
Resection (see bowel, elbow-joint, bone, nose)
in children by, 1652
in non-specific urethritis, 1545
of sympathetic, 478
Resol., 424, 849

- Resolution of Chicago Physicians' Club, 1181
 on cancer, 1291
 on death of Dr. Chase, 1661
 on leucure, 1226
 on practice of ophthalmology, 42
 re. domestic registration, 925
 Resolutions Ill. State Board of Health, 177
 on Dr. H. H. Stone, 1291
 Respiration, Cheyne-Stokes, 789
 value of, 1108
 Responsibility, legal, alcohol and, 127
 Rest after operations on eye, 873
 Restaurants, temperance, 622
 Rest cure for consumption, 1284
 cure treatment, failure of, 625
 Resuscitation in asphyxia, etc., 1174
 Retinal seeping circulation in, 133
 Retinal (see arteriosclerosis, tropical).
 Retinitis, albuminuric, 663, 857
 Retraction theory, difficulties in, 784
 Revaccination, 216
 Reynolds, A. R., report on tuber-
 culosis, 38
 Rheumatic (see joints, mental).
 Rheumatic fever, 1412
 fever, etiology of, 155
 fever without arthritis, 857, 867
 Rheumatism, 599
 and erysipelas, 1352
 application in acute, 719
 bacteriology of, 1416
 bacterium of acute, 1610
 demineralization of, 1153
 gonorrheal, treatment of, 1228, 1279
 hot bath in, 1350
 rheumatism of chorea to, 541
 salicin in, 288
 rheumatoid (see arthritis).
 Rhininitis, 1600
 Rhinitis, fibrinous, 969
 of childhood, 969
 Rhinorrhagitis, chronic, for, 174
 in children, for, 593
 Rhinoplastics by Italian method, 413
 on metallic frame, 1163
 Rhinorrhea and otorrhea, cerebro-
 spinal, 111
 Rhinotomy, nature of, 970
 Richards, E. H., educational serv-
 ices, 1223
 Richardson, J. H., "Christian
 Science," 621
 M. H., gastric ulcer, 1166
 M. H., surgery of gall-stones, 1142
 Ricketts, etiology of, 729
 whooping-cough and 1358, 1622
 Ricketts, B. M., cholangiostomy,
 1229
 E. M., suppurative appendicitis,
 918
 E. M., appendix, 795
 E. M., house-to-house operating,
 912
 Riddle, H., orthopedic case, 1490
 Riesen, D., brain tumor, 983
 David, hydrocephalus, 42
 David, tumor of testicle, 42
 Right to appoint substitute, 303
 to ride on sidewalk, 404
 Ritter's disease, outbreak of, 475
 Ritter, M., region, 790
 Roegner, my. in incipient tuber-
 culosis, 789
 rays data, 1055
 rays data wanted, 873
 rays, ill effects of, 97
 Rogers, E. J., A., resection of in-
 testine, 226
 R. W., sterilization of instru-
 ments, 1527
 Robt, G. H., etiology of, 1223
 G. H., pneumonia of, 1553
 G. H., resolutions on, 1291
 Rosenthal, H., antitoxin studies,
 1521
 E., treatment of group, 711
 Rosenwasser, M., fibroids and
 pregnancy, 1160
 M., fibroids complicating preg-
 nancy, 1043
 Ross, J. F., W., chronic voluulus,
 ety., 823
 J. F., W., gall-bladder surgery,
 669
 J. F., W., rupture of uterus, 981
 Ross, J. C., yellow fever, 401
 Round ligaments, fixation of, 1035
 Ligaments, operation for short-
 ening, 914
 Ligaments, operations on, 1344
 Ligaments, suturing for retro-
 version, 1013
 Round ligaments, transplantation
 of, 1275
 Roush, L. F., typhoid fever, 580
 Roux, medical case in femoral hernia,
 239
 Royal College of Surgeons, 235,
 294, 309, 433, 1564
 Ruminal case, 161
 Runners, long-distance, heart in,
 142
 Runyan, R. P., pelvic troubles,
 1421
 Ruth, C. E., uterine retrodisplace-
 ments, 184
 Rykogel, H. A., leucocytosis, 291
 S
 SALTICIN in rheumatism, 288
 Saline (see injection).
 solution, 1284
 Salivarium, therapeutic utilization
 of, 747
 Salophen, 557, 1349
 Salpingitis, gonorrhoeal, treat-
 ment of, 909
 Salt cured meat and fish, 1220
 solution for weak eyes, 241
 solution in pneumonia, 470
 solution in septicaemia, 243
 Salt water bacteriologic investi-
 gations, 973
 Salves, egg yolk as excipient for,
 1408
 Sanarelli, Reed and Carroll's
 reply to, 735
 Sanarelli, radiography, 667, 925
 Sanatorium wanted, 1183
 Sanford, W. B., retrodversion of
 uterus, 1420
 San Francisco notes, 304, 432
 Sanitaria for tuberculosis, 972
 Sanitarium, Muskoka Cottage, re-
 sults of, 621
 treatment of phthisis, 34
 Sanitarium for consumptives,
 1053
 Sanitary conditions on vessels, 41
 hygiene in Chicago, 112
 improvements, 1438
 inspectors, 1224
 laws in Greece, 1243
 matters in Japan, 1054
 municipal organization, 1291
 sanitary dangers of, 611
 in ordinance, 3
 progress in Nova Scotia, 925
 Sanitation in Chicago, 172
 in Eng., 1291
 in Porto Rico, 421
 military, 1352
 modern, 1054
 of private houses, 471
 rural, problems in, 288
 sanitary, pathogenic, 362, 476
 Sanitaries of skin, multiple benign,
 1620
 Sarcoma (see choroid, epithel-
 ioma, ethmoid, orbit, paral-
 ysis involving brachial plexus, 475
 of bladder, case, 531
 of femoral artery, resection,
 530
 of middle-ear, 1612
 of nose, 53
 of nose, preliminary, 406
 of testicle, 228
 of thyroid, 154
 of tongue, 1061
 of uterus, 556
 Sawyer, J. P., digitoxin, 1072
 Sayre, R. H., joint disease, 1229
 Scabies, treatment of, 1349
 Scapula, fracture of, in inf., 50
 diplococcus, 1159
 skull bath in, 599
 streptococci in, 273
 Scarlat fever, 825
 fever associate infections of,
 1524
 fever, false reaction in, 280
 fever, diphtheria with, treat-
 ment of, 1537
 fever, diplococcus of, 273
 fever, etiology of, 661
 fever, for, 966
 fever, inoculation of, 727
 fever in school, 216
 Schaeffer, A., small-bone projec-
 tile, 1042
 Schaeffer, C., zoster, 1313
 Schenck's theory in practice, 295
 Schleich solution, report on, 1123,
 1243
 Schindler, T. E., high astigma-
 tism, 1471
 School children, inspection of, 32
 for tropical diseases, 308
 months for school, 127
 medical, an old 1560
 of tropical medicine, 215, 205
 public's health, analysis of, 1333
 seats, 1025
 strain of childhood, 485
 Schuler, L., appendicitis, 978
 Schools, diseases in, 26
 inspection of, 1499
 medical, 1176, 1177
 special, 474
 Schott exercises, 137
 Scintilla, for, 557
 Scintilla, for, 113
 ointment for, 1538
 Scleroderma, case of, 1488
 Scrofula, 1166
 Sclerosis, idiocy from, 1220
 lateral amyotrophic, 1613
 multiple, 354
 of ovary, 913
 paralysis and, 33
 uterine, and metritis, 1634
 Scrofula, Teschner method in, 970
 Scrofula, school strain of child-
 hood, 485
 Sir Walter, medical history of,
 1218
 Scrofula and phthisis, juvenile,
 554
 Scrofulosis, for, 719
 Scrofulum, puritius of, for, 1213
 Scurvy, fatal case, 218
 in infant, 1292, 1603
 Sea sickness, 746, 788
 Sea-water, production of larva of,
 1106
 Sea-water in corneal infiltrations,
 1616
 Secrecy, professional, legal as-
 pects, 458
 Secretion, to establish, 113
 Section, address, 477
 abdominal, intestinal obstruction
 after, 164
 Cesarean, 724
 Cesarean, account of eclampsia,
 1096
 Cesarean, indications for, 973
 Cesarean, indication for, and
 symphysiotomy, craniotomy,
 etc., 730
 perineal, 1412
 vaginal, 923
 Sections (see address, ASSOCIATION).
 abdominal, after-treatment of,
 508
 abdominal, fifty-nine, 1295
 Sedative mixture, 174
 Sedgwick, W. L., dust, etc. in
 cities, 1611
 Seismotherapy in gynecology, 858
 Senile diseases, 1359
 Sentinella, 1168
 medal, competition for, 1627
 N. St. Luke's Hospital, 1050
 Sepsis (see purpura, erysipelas,
 and shock, peritonial, 1097
 p o s -puerperal, indications,
 treatment, 447
 puerperal, 1422
 Septicemia, 357
 blood cultures in, 851
 enteric ulcers in, 1306
 in pulmonary infection, 410
 etiology, without thrombophle-
 bitis, 701
 puerperal, 906
 salt solution in, 843
 shock, hemorrhage and, 964
 Septicemic infection, serum,
 1056
 Septum (see hemorrhage),
 nasal, deflection of, treatment,
 1056
 nasal, pathology of, 1032
 Sera, toxic, anemia from, 543
 Serotaxis in diagnosis, 809
 Seroparapeutics, milk serum in,
 410
 Serotherapy among ancient
 Greeks, 1504
 in contractitis, 494
 with climate and hygiene, 64
 Serpents, poisonous, 1494
 Serum, antiphthieria, 1219
 antiphthieric, 886
 antiphthieric, in eye, 225
 antipneumonic, pneumonia and
 therapy, 1528
 antipneumococcus, Pane's, 1352
 antipneumococcus, in meningitis,
 1528
 antipneumococcus note on, 1534
 antistreptococci, in puerperal
 fever, 344
 antistreptococci, in puerperal
 infection, 851
 antistreptococcus, in septice-
 mia, 278
 antistreptococcus, meningitis
 cured by, 1416
 antituberculous tetanus and 988
 antituberculous treated with, 901
 for syphilis, 36
 Haven's in syphilis 1028
 immunizing, against epithelium,
 1691
 in acute psychoses, 1095
 Serum in inguinal hernia, 1287
 in whooping-cough, 1537
 in yellow fever, 471
 Marmorek's in erysipelas, 668
 therapy, 665
 therapy in Canada in 60's, 1439
 therapy in fever following de-
 livery, 1181
 therapy, progress in, 634
 thread formation in, 542
 treatment, 275, 543
 treatment with serum from hu-
 man convalescents, 602
 yellow fever, case treated with,
 600
 yellow fever, inefficacy of, 1566
 Seruma, intracranial struggles
 with, 1181
 normal and non-immunized, 93
 ized, 93
 Services, value of, 1635
 Sewage farm at Montreal, 619
 Irrigation, 1116
 microbe of, 278
 purification of, 1291
 treatment of, 1611
 Sewerage in New Brunswick, 925
 Sewers, method of ventilating,
 621
 Sex, determination of, 434, 724
 determination, theory of, 1054
 Sexual apparatus, adenomyoma of,
 863
 atony in women, for, 301
 hygiene, 1221
 peritonitis, in female, 542
 symptoms, meniscus of, 907
 Shear, J. P., puerperal eclamp-
 sia, 1292
 Sherman, W. N., new battery, 427
 Sherwood-Dunn, B., rectal dis-
 eases, 1195
 R., and proctorectomy, 1045
 Shields, E., guma, 795
 E., syphilis vegetans, 917
 Shinault, C. R., malarial comp-
 lica-tions, 1421
 Shock, 1015
 hemorrhagic and septicemia, 964
 in surgery, 276
 surgical, septicin in, 1544
 traumatic, 854
 Shoemaker, G. E., urethritis in
 children, 1292
 J. V., insomnia, 101
 Shortening of tibia and femur,
 1045
 Shoulder dislocation, habitual,
 478
 Sharley, E. L., contagiousness of
 typhoid fever, 1017
 Sick benefits, entitled to, 684
 Sickness after anesthetics, preven-
 tion of, 973
 Sight, defective, in merchant
 marine, 972
 evolution of lines of, 158
 not robbed of, 1302
 Simmonds, (see rectum).
 flexure, carcinoma of, 855
 flexure, disease in, 92
 malignant disease of, 32
 sinus, thrombosis of, 96
 Silver, H. M., esophageal stric-
 tures, 163
 thrombosis, operation for, 225
 Simulated affections, 159
 Singers' nodes, 1090
 Sinus, ethmoid, disease, 904
 frontal, abscess of, 1200
 frontal, empyema of, 1485
 skull, 909
 frontal, eidonasal treatment of,
 1633
 frontal, suppuration of, 1605
 lesions, frontal, symptoms, 408
 maxillary, disease of, and eye,
 1202
 maxillary, mucocoe of, 600
 maxillary, of typhoid and, 458
 sphenoidal, diseases of, and eye,
 1202
 maxillary, mucocoe of, 600
 thrombosis, operation for, 225
 Sinus, diseases of, 219
 empyema of, 909
 frontal and maxillary, 1283
 frontal, suppuration of, 1162
 nasal, air douche in, 1441
 Sinusitis (see otitis, otorrhea, otitis, otitis).
 acute catarrhal, 122
 acute frontal, 1283
 diagnosis of, 1616
 Leuzin's formula for, 123
 Siphon puncture, 99
 Sippy, R. W., muscular dystrophy,
 1691
 Skeleton, calcareous, 1630
 Skelegrams, distortion of, 536
 Skin, bronzing of in liver cirrhosis,
 1691
 clinic, 536

- Skin, defense of, against microbes, 1095
 disease, contagious, 535
 edema of, origin, 279
 flaps, sensibility of, 730
 grafting, 275
 grafting according to Thiersch, 102
 grafting, new method of, 1545
 hygroms of, 409
 study of, 1540
 study of sensibilities of, 602
 syphilis of, 1163
 Spleen (see Spleen, sinus).
 foreign body in, 1553
 lesions with middle ear suppurations, 155
 Skelly, R. B., appendicitis, 1229
 Slagle, C. G., convulsions, 1130
 Sleep and hypnotics, 158
 explanation of, 543
 sleeplessness and hypnotics, 220, 278, 344
 Smallpox, 1352, 1625
 (see marine-hostal reports).
 bicolor band in, 1412
 bicolor treatment, 1412, 1605
 diagnosis of, 360
 epidemic, 154
 epidemic, Hull, 1439
 falling to report, 1240
 in Chicago, 1377
 in Indiana, 49
 in Ohio, 1589
 outbreak, 1374
 vaccination, 472
 Smith, A. A., typhoid fever, 1229
 A. L., cancer of uterus, 1220
 A. L., floating kidney, 1149
 Chene, cut of broad ligament, 669
 Smoke nuisance, 241
 Smyth, S. F., vesical calculus, 1420
 Snow, S. F., epidemic influenza, 1231
 Societies, 36, 100, 160, 223, 251, 347, 412, 478, 534, 604, 621, 664, 732, 793, 860, 912, 976, 1016, 1098, 1147, 1222, 1290, 1325, 1418, 1489, 1548, 1610, 1653.
 Society, Miami and Shelby Co., 732
 pathology and medical, 1089
 Am. Proctologist, 37
 Bradford Co. Med., 732
 Brumley District Med., 1222
 Brooks Co. Med., 1222
 Butler Co. Med., 1610
 Central Ill. Med., 1222
 Central Mo. District Med., 1290
 Chicago Gyn., 1164
 Chicago Med., 39, 916, 1098, 1290, 1424
 Chicago Med. and Chicago Med. Exam. Assn., 1655
 Chicago Oph. and Otol., 1653
 Chicago Neurological, 281, 352
 Children's Aid, 1502
 Cleveland Med., 42, 164, 795, 1169, 1358, 1522
 Clinical, of Md., 1040
 Colorado, med., 225, 288
 Crawford Co. Med., 247
 Cincinnati Co. Med., 1040
 Iel. State Med., 36
 Denver and Arapahoe Med., 1163, 1613
 Des Moines Co. Med., 1355, 1418
 Douglas Co. Med., 793
 Great pathologist, 1222
 for prevention of consumption, Ill., 38, 90
 Franklin Co. Med., 1164
 Fresno Co. Med., 223
 Fulton Co. Med., 1041
 Grand River Med., 1610
 Grand Trunk Co. Med., 976
 Idaho State Med., 793, 1040
 Jackson Co. Med., 1098, 1169
 Jasper Co. Med., 54
 Johns Hopkins Hosp., 1610, 1494
 Kanakake Val. Dist. Med., 544
 1163
 Kansas City District Med., 223
 K. C. Oph., 1362, 1290
 Keokuk Co. Med., 1290
 Kings Co. Med., 1489
 Lancaster City and Co. Med., 732
 London School Nurses', 106
 Louisville Medico-Chir., 1489
 Marion Co. Med., 1610
 medical, 100
 Michigan State Med., 37, 101
 Minn. Valley Med., 1610
 Montreal Medico-Chir., 1419
 New Brunswick Med., 664
 J. State Med., 100, 224
 N. Y. State Med. and the code, 31
 Society, Nova Scotia Med., 644, 557
 of Internal Med., Chicago, 285, 350
 of Md., laryngological, 1655
 of Phys. and Surg., Stephenson Co., 1040
 of Va., Med., 913, 1164
 Omaha Med., 1423
 of Oreg. Med., Lynch, 1230
 Orleans Parish Med., 40, 102, 578, 671, 1104, 1493, 1610
 of Pa., Med., 1610
 Phila. Co. Med., 982, 1168, 1494
 Phila. neurological, 1612
 practitioners' Dallas, Tex., 1610
 Co. Med., 1610
 Phila. Path., 41, 983, 1362, 1610
 Phila. Pediatric, 101
 St. Louis Med., 100, 103, 1424, 1616
 Salt Lake Co. Med., 1290, 1610
 San Francisco Co. Med., 290, 666, 915, 1493
 So. Cal. Med., 1610
 So. Dak. Med., 36
 Southwest Minn. Med., 4778
 Tenth District Med., 1097
 Toronto Clinical, 1104, 1495
 Tri-County Med., 223
 Tri-State Med., 732, 1040, 1164, 1222
 Union Dist. Med., 1222
 Univ. of Md. Med., 1097
 Utah State Med., 1040
 Venango Med., 792
 Vt. State Med., 1097, 1165, 1224
 Wabasha Co. Med., 223
 Wash. State Med., 1497, 1295
 Washington Obstet. and Gyn., 1040, 1097, 1222
 Wayne Co. Med., 976, 984, 1164.
 Sodium, caecodylate of, 99
 chloride in gastric affections, 492
 salivary in facial paralysis, 492
 sulphate in catarrh of stomach, 492
 Soil and disease, 665
 Soldiers' and venereal diseases, 407
 Spahn, E. E., Sputum analysis, 1128
 Somatose and meat extracts, 1037
 Sound direction, determination of, 487
 urethral, complications from, 1549
 Whittich tracheal, 968
 South, deceptive fiction, 280
 South Carolina, practice in, 622
 Specialist, innocuousness of, 1660
 Specialism in medicine, 659
 Speech, dental, infating, 871
 Speculum, bivalve, 1376
 outside the office, 494
 Speech, defective, in children, 1550
 formation of, 1632
 ventricular band, 345, 361
 Spindel, Dr. Ectopic gestation, 917
 Spencer, J. C. Bottini prostatic retractor, 916
 Sphincter and destroyed by phlegmon, 159
 Sphygmographs, tracings of, 221
 Spina, treatment of, Pott's, 1448
 Spiller, W. G., lateral scleroma, 1613
 W. G., tumor of occipital lobe, 1162
 Spina bifida, 1495
 bifida treatment of, 1542
 Spinal (see cord, curvature, neuritis, paraplegia, tumor, caries).
 column, rigidity of, 1349
 curvature correction in, 1604
 curvature, dorsoconvex, 40
 degeneration, anomalous cases, 693
 spine (see arthritis).
 lateral curvature of, 855
 neurotic, 1434
 ossification, aspects of, 475
 Spivak, C. D., auto-intussusception of stomach, 1613
 Spleen (see ankylostomiasis, in, 24)
 function of, 176
 rupture of, extirpation of, 1288
 Splenoma, 1610
 Splenomenia, tuberculous, 239
 Splint, auto-extension fenestrum, 1421
 Spongy, a new, 1542
 Spondylolisthesis, 596
 Spotted fever in Idaho, 1157
 Spray for pharyngitis steala, 174
 Spray for Diabetes: who knows, 116
 Sputa, new granules in, 602
 Sputum analysis and tuberculosis, 113
 origin of eosinophilous cells in, 864
 Squibb's cholera mixture, 51
 Stach, E. A., The douche, 270, 845
 Staining method for blood, 477
 of red corpuscles, 176
 Stapes, ankylosis of, treatment, 1039
 sphenoidotomy of, 726
 Staphylococcus infection, 728
 Staphylococci, Facial fever, 1131
 Starch digestion, 97
 Stearns, W. G., Phases in psychiatry, 1272
 Stenosis of liver and necrosis, 1092
 Steele, J. D., Endothelioma, 1362
 Stenosis bronchial, roscopie symptom, 1488
 esophageal, cicatrized, 248
 laryngeal, and intubation, 1484
 laryngotome, 1328
 mitral, 1088
 mitral and tuberculosis, 1286
 nasal, 979, 1034
 Sterility in women, 723
 Sterilization of bodies, 791, 1031
 of instruments, 1627
 of living tissue, 406
 Sterilize, 1039
 Sterner, an appendix, criticism of, 119
 Stethoscope, chest-piece for, 1630
 Stewart, E. E., Am. Pharm. Assn., 1644
 Stillson, H. Subjectoscope, 717
 Stilling, H., X-ray for, 1219
 St. Louis notes, 55, 1273, 1503
 Stockton, C. G., Accidental albuminuria, 164
 C. G., Cholelithiasis, 831
 Stoddard, F. R., Aconitin, 1165
 Stomach (see cancer),
 affections, vomiting, sulph and iron, for, 557
 and uterus, 1034
 auto-intussusception of, 1613
 cancer of, 968, 1361
 carcinoma of, with involvements, 1362
 contents, tests of, 93
 dilatation, X-ray in, 600
 diet and motility of, 1163
 dilatation from compression, 487
 dilatation of, 1359
 dilatation of, fatal cause, 663
 diseases, chemical diagnosis of, 109
 disease, laboratory in, 341
 diseases of, 1161
 distended, 795
 examination of, 974
 excision of, 974
 insufflating, technic of, 1096
 masses of, 55
 operations on, 1414
 paralytic dilatation of, 1299
 perforating ulcers of, 165
 secreting power of, 1417
 traumatic affections of, 1039
 tube and douche combined, 494
 ulcer of, 1417
 ulcer, report for, 1557
 Stomach mixture, 174
 Stomitis, infectious ulcerative, 109
 Stone, operation for, choice of, 1480
 K. M., Schleich solution, 1123, 1243
 renal, cases of, 918
 Stork, why child strains at, 97
 Stork, J. A., Pure food, 548
 Stover, C. inertias and subintention, 1044
 Strabismus, 154, 969, 1690
 Stricture, correction of, 1321
 Streets, can block off, 684
 Streptococcal (see infections).
 Streptococci in scarlatina, 273
 Streptococcus in otyology, 29
 Stricker, L., Nutrition of lens, 1325
 Stricture of esophageal dilatation and esophagotomy, 246
 esophageal, impermeable, 244
 esophageal, Ochsner's method in, 24
 esophageal, recovery, 245
 Eustachian, symptom of, 1583
 of esophagus, cicatrized, 243
 of rectum, 325
 of rectum, syphilitic, 216
 of small intestine, 1486, 1640
 of urethra, treatment of, 475
 Strictures (see electrolysis, esophagus, intestines).
 of esophagus, 162
 of urethra, intubation, 717
 Stroch, D., communicable diseases, 1610
 Strong, A. B., Diphtheritic laryngitis, 1114
 Strontium bromid (see insanity).
 Strychnin, 1215
 (see heart, poisoning).
 Strychnin, value of, 901
 Stucky, J. A., Fractured base, 1189
 Students practice fraud, 679
 Stumpf, Geo., Bowel troubles, 41
 Stuver, E., Knowledge of the child, etc., 705
 Subintubation, treatment of, 104
 Suction, theophy, 71
 Sublimite solutions in eyes, 1477
 Sueden, G. H., Habits of child-hood, 608
 Sugar, test for, 1415
 Suggestion in internal medicine, 1039
 Suggett, O. L., Enteric fever, 1494
 Suicide, 790
 does life insurance lead to, 177
 suicides, prevention of, 747
 Sull, 1437
 Sulfadiazine, 808
 for damages, 1560, 1561
 masticrate, 1254
 Woodbury vs. Eddy, 1173
 Sulzer, A. W., Etiology of cancer, 1291
 Sulphocarbolates in typhoid, 1486
 Sulphonal, additional, 1481
 Sulphuric acid (see Basewood's disease)
 Summer complaints in children, 1039
 resorts, risks of, 1107
 Summers, F. D., Dermoids in gynecology, 1295
 J. F., Jr., Glorios or gauntlets, 63
 Sun fever, 1848
 Sunlight on bacillus icteroides, 1053
 Sunstroke, 1032
 Superstition, frauds and, 786
 Suppuration, cervical, 969
 pelvic, 1158
 post-typhoidal, cause, 42
 rarely, after shot-wounds, 974
 Suppurations of middle ear, 159
 Suprapubic vs. vaginal method, 1039
 Suprarenal capsule, 473
 capsule extract, 1349
 extract, 786, 907
 gland in chloroform accidents, 654
 glands, tumors of, removal, 1415
 Surgeons appreciated, 1298
 Surgeon-General's report, 1377
 Surgery (see bladder).
 abdominal, 1217, 1218
 abdominal and pelvic, 905
 abdominal, cases of, 1615
 abdominal, in homes, 1413
 address in, 970
 advances in, 357
 aseptic, fever in, 34
 conservative, 4504
 during hypnosis, 33
 internal remedies in, 274
 internal, phases of, 1642
 mechanical, 1039
 of ear, etc., suprarenal extract in, 481
 of lungs, 1441
 pelvic organs, 1225
 of pleura and lungs, 974
 of the brain, 1041
 open, 1563
 Otopneic, 1157
 osteoplastic, 538
 pelvic, points in, 1421
 points of, 457
 Surgical (see cases, operations).
 cases, 1421
 tolerance and results, 1042
 Successful (see immunity).
 Suspension-uteri ligament, structure, 268
 Sutures, intestinal perforation, 1641
 Suture closing of wounds, 536
 Suture, abdominal, methods of, 1359
 buried, removal of, 1221
 in cataract extraction, 30
 intestinal, right angle, 277
 of metal silver wire, 478
 material, an absorbable, 99
 muscular, without buried
 threads, 477
 tobacco-pouch, 411
 ligature and, 916
 Sutures not fall tender, 1633
 Swallowing, abdominal, 542
 of hands, for, 1538
 Switch-board, improved, 1427

- Spinal fluid, analysis, 106
- Spinal fluid, sections of, 99
- Symphysis, articular, 1458
- Symphysis, sections of, 99
- Symphysis, articular, examination after, 106
- of the ovary, plexus, 975
- Symphysis, 805 (see section)
- with an immobilization, 541
- Symphysis pubis, separation of, 51
- Synthetic, modern use of, 473
- Syphilis, 1537
 - (see issue, keratitis, leprosy, locomotor ataxia, proctitis, serum, throat)
 - antagonistic to tuberculosis, 543
 - causes of, 161
 - cerebrospinal, 1613
 - contracted after, 60, 858
 - incubation period in, 482
 - inherited, 1602
 - inherited, contagiousness of, 1415
 - in hereditary tuberculosis, 708
 - in surgery, 333
 - latent period in, 100
 - manifest by dementia paralytica, 346
 - nervous, diagnosis, 215
 - of eye, 345
 - of larynx in infants, 280
 - origin of, 973
 - prevention of, 601
 - prophylaxis of, 1907
 - primary, remittent fever in, 280
 - treatment of, 35, 1219
 - social danger of, 858
 - soluble mercury in, 654
 - special aspects of, 854
 - vegetans, 917
- Syphilitic affections of eyes, 542
- care of mouth in, 1421
- factor in diseases of women, 1162
- infection, limits, 278
- perichondritis, 33
- Syngomyelia, 916
- two cases, 98
- Tabes dorsalis, 1511
 - dorsalis, varieties, 411
 - early diagnosis, 1511
 - exercise treatment, 2776
 - gastric crises of, 1033
 - pain, sense in, 470
 - neuritis of, 1651
 - with unusual symptoms, 732
- Tabetic attacks, high fever of, 275
- clubfoot, 172
- laryngeal paroxysmal attacks, 858
- Tachycardia, paroxysmal, 969
- Tair, D., otopic testicle, 1102
- D., hydromeprosis, 1101
- D., sarcoma of testicle, 228
- Dudley, syphilis, 61
- Dudley, syphilitic epididymitis, 1125
- Dudley, treatment of hydrocele, 228
- Dawson, address on, 875
- Dawson, layman's view of, 54
- Talbot, S., intestinal gingivitis, 1490
- Talbot, C., otopie gestation, 795
- Talbot's titration method, 762
- Tapeworm, 1216
- Taste of potassium iodid dissolved, 501
- test case for, 728
- Taylor, H. M., typhoid perforation, 1615
- J. F., typhoid experience, 577
- S. B., ulceration of rectum, 977
- T. G., tetanus and antitetanus serum, 288
- Tears, perineal, 596
- Tebault, C. H., Jr., anchiylostomiasis, 544
- Teeth and empyema of nostrum, 122
- early decay of, 856
- unsound, and early recruit, 680
- Teething, diarrhea incident on, 50
- Telodermis, resorption, 1506
- Tenement disease, 1284
- Temperature, after operations, 1044
- control of, 1605
- abnormal, 1229
- Temporal bone, anatomy of, 984
- suture in new birth, 494
- (see also 1623)
- Tenement-house (Com. report of, 1437
- Tenon's ophthalmococcus in Manitoba, 619
- Tenon's (primary) to amputation, 40
- "Ten per cent. doctors, 873
- Tentage for tropics, 1352
- Tentative life for tent, 161
- Tetanus, testis, 1216
- tetanus, etiology of, 1608
- test for sugar, 1415
- test for tuberculosis and typhoid, 1053
- in diabetes, 159, 160
- of mixed-tint emulsion, etc., 96
- of red corpuscles, 176
- testes, misplaced, surgery of, 34
- testic, cystic tumor of, 42
- (see also 1421)
- tuberculous, tumor of, 1633
- sarcoma of, 228
- undescended, operation for, 773
- Testicles (see tumors)
- retention of, 474
- Testimonial and medical press, 677
- evolution of, a, 553
- Testimony, expert, 1544
- Testis, feratous, 1216
- testis, weighing, 161
- visual, 927
- Tetanus, 156
- and antitetanus serum, 288
- antitetanus, bacenic acid injections in, 860
- and intracerebral injections, 820, 221
- brain matter in, injection of, 280
- carbolic acid in, 671
- cured by injections of brain, 347
- experience with, 1116
- new treatment, 538
- neurotonic, 1542
- puerperalis, dural infusion in, 541
- treated with antioxin, 342
- treated with carbolic acid, 727
- treatment of, 113
- Tetany from sun, 1506
- Texas cattle, medical, 156
- Text-books, modern, 1047
- "The letter killeth," 1497
- Therapeutic agents, new series of, 907
- hints, 1213
- Therapeutics, 50, 113, 173, 237, 300, 306, 424, 432, 556, 593, 554, 719, 819, 848, 900, 963, 1085, 1152, 1212, 1279, 1343, 1498, 1476, 1537, 1599
- dynamic therapy of, 1243
- 1243
- rational, 1031
- suggestive, 575
- Therapy, modern, 30
- Thermic in typhoid, 908
- Thermic fever, microbe causation, 858
- Thiersch skin grafting, 102
- Thisle, W. B., Friedrich's ataxia, 1194
- Thomas, H. M., inhalation in tuberculosis, 1102
- O. F., sarcoma and epithelioma, 228
- Thomson, W. H., typhoid fever, 1229
- Throacocentesis (see lungs)
- Throat, 116
- Throat (see nose and throat)
- cough, 216
- Influenza, 216
- serologic bacteriologic examinations in, 1099
- syphilis in the, 905
- tuberculosis, 1099
- "Thrombophlebitis, pyemia following, 108
- septic, 1034
- Thrombosis, cranial, 97
- of sigmoid sinus, 96
- venous in chlorosis, 1653
- Thymic, boric acid sugar for, 1154
- Thymus, glands, 1418
- Thymus in therapeutics, 159
- Thyroid extract, 1348
- extract (see iodine, fibroma)
- for bone regeneration, 542
- gland, anatomy of, 1313
- gland, function of, 730
- gland, study of, 1608
- gland, uterus and, 1217
- in cerebral neoplasms, 406
- in fracture, 36
- treatment in fractures, 36
- tumors, accessory, 386
- Thyroids, accessory, 1091
- Thyroidomy for angiona of larynx, 176
- technic of, 1566
- Thibault, F. B., vomiting of pregnancy, 1617
- Thimble, A., excessive dryness, 1128
- Tissue, elastin, 1623
- Preservation, method of, 1089
- 1089
- To members of medical profession, 1018
- Tobacco, 405
- and alcohol, 95
- cause amyopia: 155
- causes of, 419
- Todd, F. C., infection through ear syringe, 949
- Toker, chloroform for, 1154
- Tomlinson, L. A., pelyc diseases and insanity, 527, 928
- Tongue, accessory thyroids at base of, 1421
- depressor, 1242
- inflammations of, 93
- tractious in asphyxia, 1287
- Tonsil, enucleation, 236
- Tonsil enucleation, 1552
- pharyngeal, hyperplasia and tuberculosis of, 610
- recurrence, 1482
- Tonsillar (see abscesses, injection, suppuration)
- hypertrophies, 1414
- ring, 1423
- Tonsillectomy, observations, 767
- Tonsillitis, prescriptions for, 1537
- Tooth, portals of infection, 1381, 1491, 1620
- adenoid, enlarged, and removal of, 221
- entry of tubercle bacilli by, 1209
- Streptococci on, 1355
- in nasal cavity, 216
- Toxinibivins, 968
- Toxemia, malarial, 597
- Toxic agents, action by, 3
- Toxin injections into brain, 35
- Trachea, foreign bodies in, 1033
- Tracheitis and laryngitis, 599
- Trachomatous in alphertha, 278
- Trachoma, 94, 905
- cataphoresis in, 210
- Tracy, E. A., treatment of fracture, 1209
- Training, effects of, 661, 728
- Transmission of acquired characteristics, 1209
- Transmissible disease, 1200
- Transval (see British)
- assistance, 1436
- service and supplies, 1563
- service in, 1627
- war, Canadian contingent, 1179
- nuclear, medical service for, 1501
- war, medical service in, 1111, 1177
- war, service in, 1370
- Trauma and phthisis, 1053
- of spleen, 160
- Treatment, medical and surgical, 858
- not evidence of improper, 175
- "Prepping for intracerebral injections, 35
- Tribunals, medical, 114
- Trichinosis, 1543
- Diagnosis of, 47
- Trochanter, supra, and, 1481
- Trochanter in retrocervical wall, 1493
- new, 974
- Trow, health of, 1303
- sanitary regulation of, 304
- sick-rates among, 53
- Tropical disease, retinal sequelae, 858
- Truss for cardiac asthma, 911
- Tube, Crookes', static machine and, 111
- Tubercle bacilli by tonsils, 1299
- bacilli, extract of in phthisis, 460
- bacillus, extract of, 160
- forming organisms, ray forms of, 792
- in various species, 1416
- Tuberculous (see peritonitis)
- infection, 543
- patients, where send and whom, 1018
- Tuberculin, 1284
- acid, toxic properties, 302
- a diacetic agent, 787
- in lupus, 1345
- test, 404, 1367
- test, value of, 1074
- Tuberculous, 33, 222, 470, 855, 1480, 1547
- (see amorrhoea, bacillus, children, consumption, congestive, gland, heredity, hyperplasia, ichtyoid, infection, nervous, peritoneum, phthisis, phthisis, poisons, pregnancy, tuberculous, testis, T. y. y. sputum, stenosis, syphilis, test, throat, tonsil, tuberculosis, Widal)
- Tuberculosis among cattle in Canada, 305
- and cattle, 420
- and defects in development, 975
- and pets, 47
- and pregnancy, 478
- and syphilis of eye, 345
- antagonism of syphilis to, 543
- arrest of pulmonary, 600
- blood spitting in, 222
- and human, 747, 1557
- bovine vs. human, 739
- bovine, significance of, 621
- chromic acid, 151
- acid, 56, 1086
- chemical treatment of, 1168
- congenital, 165
- contagiousness of, 1617
- control of, 1411
- creosote in, 221
- diagnosis, 156, 1413
- diagnosis and treatment of, 1482
- disinfection for, 218
- early diagnosis, 482, 537, 908
- early recognition of, 1445, 1492
- early sign of, 1544
- eradication of, 221
- etiology of, 727
- etiology, surgical, 1634
- fish water, 747
- in animals, 167
- in Canada, 56, 682
- in childhood, morbid anatomy of, 662
- in children, 1048
- in Iowa, 554
- incipient pulmonary, 787
- in dogs, 1499, 1651
- inhalation in, 1102
- in Japan, 1238
- injections of nitrogen in, 959, 1023, 1077
- in Italy, 1337
- joint, 405
- laryngeal, 1357
- laryngeal, prognosis of, 707
- in fever in, 412
- mental and nervous aspects, 483
- mitigation and, 170
- military of, 83
- mixed infection in, 1610
- nasal disorders and, address on, 246
- natural treatment of, 1291
- notification of, compulsory, 553, 611, 742
- in Italy, 1407
- of breast, 472
- of fascis, 371
- of hernial sac, 1600
- of intestine, 338
- of iris, 476
- of kidney, 474, 1650
- of knee-joint, restriction for, 373
- of lungs, manifestations of, 1608
- of larynx, serologens in, 1607
- of liver, 382
- of urinary tract, 94
- peritoneal, surgical intervention in, 1287
- prevention and remedy of, 1288
- prevention and treatment, 785
- prevention of, 855
- primary lesions of, 971
- problems in, 649
- prophylaxis of, 558
- pseudophthisic, 540
- pulmonary, lesions of, 108
- pulmonary, surgical treatment, 106
- report on, treatment, 240
- report on, 38, 1563
- 706 cases treated, 64
- spread of, 536, 1612
- state aid in, 165, 1351
- surgical, 852
- surgical, formalin for, 99
- in tubercles and, 1606
- transmission, 1555
- treatment of, 79, 725
- types and, 429
- unsolved problems in, 549
- with typhoid and pneumonia, 151
- Tuberculosis (see adentis, palate, peritonitis, pneumothorax) and public, plea for, 377
- appendicitis in the, 426
- and other problems, 1090
- osculation, 46
- process in children, 96
- Tuckerman, L. R., Association begins on, 1237
- Tuley, H. E., progress in pediatrics, 997
- Tumor (see bones, fingers, gynecology, nasopharynx, oblongo-ovary, pineal, suprarenal), brain, 281, 282, 983

- Tumor, brain, papillitis accompanying, 1579
cerebral, 941
cystic of testicle, 42
intravascular, hydronephrosis from, 1101
lymphatic, 917
meningeal, 1209
mucinous, of uterus, 1422
myomatous, volvulus from absorption of 223
of uterus and ovary, 1261
of iliac vein, 1548
of occipital lobe, 1612
of pituitary body, 1043
phantom, 533
spinal, 968
- Tumors, abdominal, pregnancy complicated by, 503
at base of tongue, 286
benign laryngeal, 904
cerebral, 1062
fibroid, 596
mammoth ovarian, 1041
of bladder, surgery for, 1633
of nasal fossae, treatment of, 1608
renal, 403
suprarenal, case, 980
tridemic, of ovaria and testicles, 910
works on, 115
- Tung, feeding middle, 969
- Turck, F. B., treatment of abdominal viscera, 880
F. B., treatment through colon, 119
- Tuttle, pruritus ani, 27
- Twain, Mark, and "Christian Science," 930
- Twins, united, 428, 746
Tyler, G. E., prevention of diseases, 288
- Tympanic cavity, the therapy of, 342
- Typhoid, 1357
antibiotic, antiseptics, chlorine, diet, diphtheria, hemorrhage, hospital, meningitis, necrosis, nurses, peritonitis, phlebitis, sulphocarbolates, test, thermal, ni-cers,
antibiotic bacilli, 1036
and drinking water, 1298
and malarial fevers, diagnosis of, 1298
and, 1500
and septic fever, 1364
antibodies, origin of, 1171
at U. S. hospital, 218
bacilli in urine, 563
bacillus cause of suppuration, 42
bacillus, extraintestinal lesions from, 675
bacteriology of, 1605
bone necrosis after, 227
duration one week, 559
discussion on, 584
disinfection in, 342
early differentiation of, 1504
fever, 32, 709, 1000, 1033, 1093, 1421, 1481
fever complications, celiotomy 129, 132
fever eruptions, 151
fever in late war, 151
fever propagation, 155
fever three cases, 473
from shell-fish, 743
from water-supply, 1290
in camps, 400, 1224
in children, 1103
in Newark, N. J., 1290
in the past, 1122
prevention of, 165, 1229
laparotomy for perforation in, 30
malarial fever communicating, 129, 149
medical treatment of, 1650
methods in Mass. Gen. hospital, 129, 149
mortality, 474
of unusual duration, 1162
peptone in, 1104
perforation, experience in, 1615
perforation in, 1285
perforation, operative treatment, 1172
pneumonia, 661
pneumonia and, 404
quarter of a century's experience with, 607
report of case, 409
role of typhus bacilli in, 1652
sero-membranous infection in, 856
statistics in Roosevelt hospital, 1229
therapeutic principles in, 580
transmission of, 1636
treatment and feeding, 1350
- Typhoid with complications, 1649
without intestinal lesions, 342, 970
- Typhomalaria, 1425
- Typhomalarial fever, 907
- Typhus, abdominal, enterorrhagia in, 169
bacilli in roseola of typhoid, 1652
fever at Phila., 1301
spotted, 622
- Ulcer, corneal, ichthyol in, 1480
gastric, 354
gastric, cases, 1166
gastric, operations in, 722
gastric, rector, feeding in, 1413
ichthyol in, 1480
of stomach and hysteria, 1417
of stomach, rest for, 1537
- Ulceration of rectum, 977, 984
- Ulcerations of cervix uteri, treatment, 35
varicose, new treatment, 346
- Ulcera, rural, plicic acid in, 1408
in septicaemia, 1366
of stomach, perforating, treatment, 165
rectal, 1136
rectal, 1169
varicose, and nerve stretching, varicose, of cornea to, 724
varicose, gelatin treatment of, 901
varicose, of leg, 155
ulvar, in typhoid, 728
- Ulcus rodens, 1269
- Undertakers, enterprising, 921
- Union, of comers to, 724
unification needed, 152
- University of Cal., med. dept., 684
of London, 531, 550
- Uranias, facts and fallacies of, 790
- Urea, importance of, 1216
in urine, termination of, 35
Uremia, for, 173
Ureterectomy, 1542
- Ureter, implantation of in bladder, 484
injury to, grafting in, 1278
Ureters, implantation in rectum, 669
in colon, implantation of, 1546
injury of, surgical, 1540
reflux of air into, 1211
Urethra, adenoma of, 1155
capacity of, 545
irrigation of, 412
normal anterior, 1120
plastic restoration of, 36
stricture of, excision and suture, 475
strictures of, electrolysis for, 1477
surgical treatment in old age, 723
stricture, 1121
stricture, 1342
Urethral (see anastomosis, calculus, catheterism).
diseases, instrumentation in, 472
- Urethritis, 537
in female, treatment of, 1228
in male, 112
prostatic abscess and, 1228
remarks on, 1228
treatment of acute, 1509
treatment of chronic, 1121
- Urethroscopy, simplified, 1119
- Urethroscopic appearance in disease, 1121
- Urethroscopy, technic of, 1120
- Uric acid (see circulation, mil-graine).
analyses, 61
acid diathesis, 155, 1081
acid theories, 59
Gricemia, optic neuritis from, 541
- Urinary, 342
of insufficiency of, 792
tract, tuberculosis of, 94
Urinary (see calculus, catheterism, acid, and frequent urination), for, 593
alkaline, for, 593
treatment of, 172
diazo reaction in, of phthalsic, 1221
elaboration of elements of, 1609
examination of, 903
female incontinence of, surgery, 35
incontinence of, 1282, 1349
in diagnosis and prognosis, 599
in pregnancy, 855
Iritides in, estimating, 1094
mercury in, determination of, 279
morphin on evacuation of, 493
nitrite of, 1121
secretory, Harris', 1104
toxicity of, 722
- Urine, urea in, method for, 35
- Uroporphyrin, 1452
- Uterine infection, 237
outward effects of, 1167
- Urticaria and odors, 176
for, 996
of mucous membranes, 1031
pigmentosa following chicken-pox, 1022
- Uterus, cervix, sacralizations of, 35
- Uterine deviators, 1283
(see cancer, diagnosis, displacements, fibroids, hroma, hematoxylin, insularities), 413
retrodisplacements, operation for, 184
inversion, ovaries, procidentia, prolapse, stomach, thyroid, ventrofixation, round ligaments, tumor), avoidance of ventrofixation, etc., 181
cancer of, 1283
cervix, prevention and treatment, 1320
carcinoma of, 414
displacements of, treatment of, 1275
entozoa-in, 1053
extripation of, etc., 1457
hemostasis in atony of, 1547
inversion of, 11, 1156
ossified, 1550
position at onset of labor, 278
pregnant, tolerance of, 403
puerperal, rupture of, 981
removal, effects of, 1353
retroversion of and functional incontinence, 338
retrodeviation of, 1420
rupture during labor, 266
sepsis, puerperal, extripation of, 925
subinvolution of, 95
surgery of, per vaginam, 935
uterus, fibroid removal, 34
ventral fixation of, 1543
ventrosuspension of, 406, 467
zinc chlorid injection into, death, 684
- VACCIN immunity, congenital, 1499
in eye, 153
virms, not, 1504
- Vaccinia, of eruptive type, 296
- Vaccinating a nation, 1414
- Vaccination, 289, 560, 1230, 1203, 1432
accidents of, 1291
and the public, 1224
appointment, 1178
enforced, 1291
history of, 1291
hypodermic in, 1004
imperfect, 221
in Nova Scotia, 1503
in tropics, 1243
responsibility in, 835
sores, 97
- Vaeoid, 1249
- Van Hook, W., rectal diseases and insurance, 1655
- Vagina, infection of, 1162
lavage through, 1053
- Vaginal (see celiotomy, cystotomy, douche, hysterectomy, incisions, section, suprapubic).
route in pelvic operations, 970
sepsis by, 359
- Vaginismus, for, 301
- Vaginitis, 158
falcic acid in, 719
Van D. T., malarial ring, 1423
- Valentine, F. C., urethroscopic diagnosis, 1119
- Valva, rectal, a fact and factor, 342
- Valvulitis, mitral and aortic, 983
Van Der Laan, J., cyst of pancreas following trauma, 77
- Varices, Durante's method in, 1409
- Varicocele, a rare, 94
treatment of, 975
- Varicose (see ulcerations, ulcers, veins).
relieve, 1541
- Variola, how shall we control, 1500
- Vasomotor, 1180
in P. H., center, depressor nerve and, 215
- Vascular conference, 1178
- Vena, cava, phlebotomy following thrombophlebitis of, 308
- Veneral (see conference, con-gress, infection).
disease, 47
diseases, soldiers and, 407
sores, 158
- Venesection and arterial pressure, 542
- Venetic, wound of, cured by suturing, 602
- Ventrofixation and delivery at term, 914
of uterus, shall we abandon?, 914
- Ventrosuspension, 1344
of uterus, 406, 407
- Vermiform, processus, anatomy, etc., 263
- Vertebral column, stiffness of, 413
- Vertigo, 289
aural, 471
paralyzing, 1037
of the head (see headache, pain).
Veterinary practice, 406
- Vineberg, H. N., experience with uterus, 1290
- Virehous's birthday, 1298
- Virile veteran, a, 53
- Viscera, transportation of, 102
Vision (see railway).
binocular, crisis in, 658
Visual sensations, some, 71
- Vital statistics, fallacies of, 108
statistics in, 173, 1371
- Vitale, F., Sanarelli's autobio-graphy, 295
- Vivification, regulation of, 1567
- Vocal defects, muscle training in, 888
- Voice, American, 295, 660
of the human sound of, 543
- Volunteer aid work abroad, 600
- Volvulus, 215
from absorption of tumor, 823
operation of, 1632
- Vomiting (see pregnancy).
fecal, after celiotomy, 94
in cholera morbus, to allay, 51
of pregnancy, 153
relieved by laparotomy, 1287
- Von Geison, L., correction, 625
- Von Virehous, K., 1210
- Vulvar (see ulcers).
- WADSWORTH, W. S., tumor of occipital lobe, 1612
Wainwright, J. H., shock, hemorrhage, septicemia, 96
- Wainwright, J. W., synthetic chemistry, 1399
- Waller, E. H., umbilical hernia, 1493
- Walker, H. O., profitable medical education, 687
S. J., memoir, 839
- Walking in hemiplegia, disturbances in, 279
- Wallace, F. E., disease of pancreas, 647
- Walls, F. X., nutritional aspects, 345
- War experiences, Spanish, 1032
late, typhoid in, 151
medical service of late, 101
- Warner, J. H., ichthyol, 1042
- Warren, W. J., X-ray in laryngology, 983
- Warner's, W. L., indigestion, 1360
- Warts, chrysoarobin for, 97
Washington notes, 544, 1241
Washington's death, 1430
Washington's illness of, 1655
Waste disposition, 1202
- Water pollution, 241
sepsis, purification of, 411
- Water-supply, toner, 1626
London's, 806
- Watson, W. H., surgery of uterus, 935
- Watkins, T. J., aspects of puberty, 415
T. J., intestinal obstruction, 1608
- Waxham, F. E., climatic treatment of tuberculosis, 1178
- Weaver, E. H., sore throat, 1090
- W. H., intratypic massure, 927
- Webster, C. L., needle near Pouter's ligament, 1553
G. W., accidental heart murmurs, 200
- Weichselbaum's coccus, infection by, 240
- Weeks, J. E., papillitis, 1570
Weight therapeutics, 1096
- Weichselbaum, J., hygienic laboratories, 1223
- Wells, E. B., bronchial calculi, 1641, 495
- Wendle, E., infant mortality, 1290
- Werder, N. O., ventrofixation and delivery, 914
- Wherry, F. C., pneumonia, 1073
- Wheaton, C. A., extrophy of bladder, 256

- Wheeler, J. B., surgery and pelvic organs, 1225
 Whisky consumption, 1178
 Whitehead's operation, modification of, 37
 White, J. A., eye troubles, 1203
 swelling, can it be cured, 1938
 Whiting, F., sinus thrombosis, 1063
 Whooping-cough, 341
 and ticks, 1258, 1622
 antidiphtheria serum in, 1537
 treatment, 556
 Wilda reaction in tuberculosis, 1090
 reaction one of defense, 553
 test, 623
 Wilda's test results, 217
 Wiggin, P. H., wounds of female bladder, 640
 Wilkins, W. T., malarial hemat-
 uria, 1420
 Wilkinson, C. P., leper home, 1291
 Willard, DeForest, osteotomy,
 1607
 Williams, C. H., examination of
 railway employees, 1002
 E., early use of forceps, 1420
 F. H., X-rays in diagnosis, 1207,
 1661
 Williamson's test in diabetes, 160
 Wills, aphasia and, 1498
 doctor and making, 1161
 Wilson, G. W., check to quackery,
 870
 Wilson, W. J., craniectomy for
 microcephalus, 671
 Wingate, U. O. B., Spooner bill,
 618
 U. O. B., what constitutes an
 epidemic, 1291
 Wire swallowed in bread, 1562
 Withrow, J. M., ovarian preg-
 nancy, 1294
 Woldert, E. A., urticaria pigmen-
 tosa, 1022
 Woman no longer conceive, signs,
 1416
 position of, 407
 Women doctors in Russia, 747
 examination of for insurance,
 1655
 Women's diseases, prolonged
 standing and, 856
 Wood, A. C., brain tumor, 983
 C. A., alcohol amaurosis, 1653
 C. A., ophthalmic section, 1
 Woodbury vs. Eddy, 1173
 Wood-sorrel, is it poisonous? 477
 nephritis fatal from, 346
 Woodward, W. C., malpractice,
 1295
 W. C., vaccination, 1291
 Wood and won, 1441
 Woolen, G. V., intranasal surgery,
 1641
 Word blindness, congenital, 1649
 Words, correct use of, 1237
 Work, H., toxic causes of insan-
 ity, 482
 Work, scientific research, still a,
 929
 Wounds, treatment of, new
 methods, 720
 Wright, F. W., contagious dis-
 eases, 1290
 J. W., diseases of eye, 1001
 J., nose and throat diseases, 84
 Wüdemann, H. V., high myopia,
 1467
 Wyeth's life of Forrest, 1234
 Wynan, H. C., appendicitis, 978
 H. C., tuberculosis of periton-
 eum, 983
 Wynekoop, F. E., diagnosis of
 diphtheria, 1100
 Wynn, F. B., exhibits at meetings,
 1436
 XANTHOMATA, nature of, 217
 X-ray and head injuries, 1482
 examinations in children, 219
 examination, one, enough, 175
 X-rays (see chest, laryngology,
 Roentgen, stomach),
 diagnostic utility of, 1498
 in lupus, 530
 in medical diagnosis, 1207, 1661
 renal calculi and, 470
 YEAST and levirin in furunculo-
 sis, 176
 Yellow fever, 361, 401, 474, 676,
 968, 1090, 1218
 Yellow fever (see marine-hospital
 reports, serum, Sanarelli),
 fever a controllable disease, 421
 fever and digestive tract, 554
 fever, arsenious acid a prevent-
 ive, 221
 fever at Soldiers' Home, 421
 fever, bacillus teteroides in, 537
 fever, bacteriologic study of, 36
 fever, bacteriology of, 1543
 fever, divided authority in, 89
 fever, fat in urine of, 239
 fever in Cuba, 96
 fever in Cuba, suppression of,
 1607
 fever in New Orleans, 787
 fever, localization of, 1289
 fever, microbe of, 672
 fever, nature and cause, 559
 fever, papers on, 1222
 fever, Sanarelli's serum in, 471
 fever, specific cause of, 725
 fever, symptoms and anatomy,
 367
 fever, treatment of, 97, 1285
 Young, A. G., formaldehyde in
 milk, 1290
 W. H., hypertrophied prostate,
 1360
 ZIEMANN'S method, 1055
 Zinc chloride in uterus, death, 684
 Zöpphilism and degeneracy, 735

INDEX OF DEPARTMENTS

BOOK NOTICES.

Abbott, A. C. Hygiene of Transmissible Diseases 619, 993	Abdominal Brain and Automatic Visual Ganglia 1242	Albuminuria and Bright's Disease 301	Albutt, F. C. System of Medicine 301	Allen, C. W. Handy Book of Medical Progress 993	American Pocket Medical Dictionary 926	Anders, J. M. Text-Book of the Practice of Medicine 1440	Annual and Analytical Cyclopaedia of Practical Medicine 1631	Archives of Neurology and Psychopathology 745	Asthma, Recent Developments in Its Treatment 926, 1307	Atlas of Diseases of Skin 42	Atlas of External Diseases of Eye 427	Baker, W. M. Kirke's Handbook of Physiology 1565	Barker, I. F. Nervous System and Its Constituent Neurons 1241, 1307	Bellini, A. Ingiene Della Pelle 1440	Bernard, C. Masters of Medicine 744	Bernard, O. Manual Hoepfli 1440	Books and Pamphlets Received 52, 301, 619, 1241	Bradford, E. H. Treatise on Orthopedic Surgery 1440	Brain in Relation to Mind 926	Brown, H. D. Brain and Other Scalp Affections: Their Cause and Cure 1241	Browne, J. L. Throat and Nose and Their Diseases 426	Bulletin of Ohio Hospital for Epileptics 745	Chirurgie De La Plevre Et Poupon 1307	Christian, J. Brain in Relation to Mind 926	Clinical Lectures on Neuroanatomy 1565	Cockley, C. G. Nose and Throat 926	Coblenz, V. Newer Remedies 426	Collins, H. D. Physiology 1565	Compend of Gynecology 1242	of the Diseases of Eye and Refraction 926	of Practice of Medicine 926, 1440	Crook, J. K. Mineral Waters of U. S. and Their Uses 302, 994	Cushny, A. R. Text-Book of Pharmacology and Therapeutics 620	Cyclopaedia of Diseases of Children 426	de M. S. Annual and Analytical Cyclopaedia of Practical Medicine 1631	Denver, E. Surgical Anatomy 993	Donders, F. C. Essay on Nature and Consequences of Anomalies of Refraction 1307	Electro-Hemostasis in Surgery 301	Elements of Vital Statistics 301	Enlargement of Prostate, Its Treatment and Radical Cure 926, 1631	Essay on Nature and Consequences of Anomalies of Refraction 1307	Fitzgerald, J. P. Prorrhea Alveolaris 302, 992	Fractures and Dislocations 1632	Fullerton, A. M. Surgical Nursing 926	General Pathology 619, 1182	Gordini, H. G. Minute Anatomy of Central Nervous System 619, 744	Gould, G. M. Compend of Diseases of Eye and Refraction 926	Gowers, S. Manual of Diseases of Nervous System 744	Grardin, E. H. Text-Book on Practical Obstetrics 426	Gross and Minute Anatomy of Central Nervous System 619, 744	Haab, O. Atlas of External Diseases of Eye 427	Hall, W. S. Text-Book of Physiology 1241, 1631	Halphide, A. C. Mind and Body. Hypnotism and Suggestion Applied in Therapeutics and Education 619	Handy Book of Medical Progress 993	Hardin, W. L. Rise and Development of Liquefaction Gases 926, 1307	Harrison, R. Paper on Stone, Prostate and Other Urinary Disorders 619	Heisler, J. C. Text-Book on Embryology for Students of Medicine 1631	Heitzmann, L. Diagnosis and Prognosis 426	Helfrich, H. Fractures and Dislocations 1632	Hedges, D. E. Compend of Practice of Medicine 926, 1440	Hygiene of Transmissible Diseases 619, 993	Ingiene Della Pelle 1440	International Clinica 620, 1241	Directory of Ophthalmologists and Otologists 426	Medical Annual and Practitioner 426	Introduction to Dermatology 1242, 1565	Text-Book of Surgery 1242	Intertrigo and So-Called Pyorrhea Alveolaris 619, 992	of Differential Diagnosis with Clinical Memoranda 1242, 1631	Kingscope, E. Asthma: Recent Developments in Its Treatment 926, 1307	Kirke's Hand-Book of Physiology with Clinical Memoranda 926, 1565	Knopf, A. Pulmonary Tuberculosis 301, 1182	Kyle, D. B. Text-Book of Dislocation of Nose and Throat 619	Laboratory Manual of Physiological Chemistry 1242, 1566	Work in Bacteriology 426	Lake, R. International Directory of Laryngologists and Otologists 426	Lane, L. C. Surgery of Head and Neck 427	Les Pteses Viserales 682	Lewis, W. B. Text-Book of Mental Diseases 175	Lovelness 1241	Lovatt, R. W. Treatise on Orthopedic Surgery 1440	Malvern, G. E. Practice of Medicine 1241	Manual Hoepfli 1440	Manual of Bacteriology 301, 1182	of Diseases of Nervous System 744	Material Medical Therapeutics. Medical Pharmacy. Prescription Writing, and Medical Law 1565	Massage and Original Swedish Movements: Their Application to Diseases of Body 426	Masters of Medicine 744	Mechanics of Surgery 301, 683	Medical Directory of New York, New Jersey and Connecticut 1565	Mind and Body. Hypnotism and Suggestion Applied in Therapeutics and Education 619	Minerals Waters of U. S. and Their Uses 302, 994	Minor Surgery and Bandaging 1226, 1565	Moullin, C. M. Enlargement of Prostate, Its Treatment and Radical Cure 926, 1631	Mracek, F. Atlas of Diseases of Skin 52	Muir on Herbs. Manual of Bacteriology 1182	Musser, J. H. Practical Treatise on Medical Diagnosis for Students and Physicians 1631	Nervous System: Its Constituent Elements 1241, 1307	Newer Remedies 426	Nevelme, A. Elements of Vital Statistics 1307	Notes on Modern Treatment of Fracture 1565	Novy, F. G. Laboratory Work in Bacteriology 426	Ostrum, K. W. Massage and Original Swedish Movements, Their Application to Diseases of Body 426	Over 1000 Prescriptions 1242	Pamphlets Received 1242	Paperson Stone, Prostate and Other Urinary Disorders 619	Phelps, E. S. Loveliness 1241	Physiology of the Body 1565	Poisonous Plants of U. S. 302	Practical Anatomy 620, 1565	Material Medica for Assays 426	Urinalysis and Urinary Diagnosis 1182	Practical Treatise on Medical Diagnosis for Students and Physicians 1631	Prescription Book of Infant and Children 1242	Modification of Milk 926	Progressive Medicine 426	Fryor, Wm. R. Treatment of Pelvic Inflammation Through Vagina 682	Pulmonary Tuberculosis 301, 1182	Purdy, J. W. Practical Urinary Diagnosis 1182	Pyorrhea Alveolaris 992	of the Teeth and Its Relations to Medicine 302, 992	Ringworm and Other Scalp Affections: Their Cause and Cure 1241	Rise and Development of Liquefaction of Gases 926, 1307	Ritchie, J. E. (See Muir and Ritchie.)	Roberts, J. R. Notes on Modern Treatment of Fracture 1565	Robinson, W. M. Diseases of Brain and Automatic Visual Ganglia 1242	Rockwood, E. W. Laboratory Manual of Physiological Chemistry 1422, 1566	Saville, T. D. Clinical Lectures on Neuroanatomy 1565	Schell, W. M. Medica and Therapeutics 926, 1565	Schott Methods of Treatment of Nervous Diseases of Heart 1242	Skene, A. J. J. Electro-Hemostasis in Surgery 301	Smith, H. W. Diseases of Infants and Children 926	F. J. Introduction to Outlines of Principles of Differential Diagnosis with Clinical Memoranda 1242, 1631	Sobel, J. Handy Book of Medical Progress 993	Spach, A. B. Prescription Book of Infant Diets for Home Modification of Milk 242	Stall, S. What a Young Husband Ought to Know 993	Stoney, E. A. M. Practical Material Medica 426	Summers, J. E., Jr. Treatment of Wounds 1440	Surgery of Head and Neck 427	Surgical Anatomy 993	Nursing 926	Talbot, E. S. Intertrigo and So-Called Pyorrhea Alveolaris 619, 992	Tarrier, F. Chirurgie de la Plevre et Du Poupon 1307	Text-Book of Diseases of Nose and Throat 426	of Pharmacology and Therapeutics 175	of Physiology 1241, 1631	on Embryology for Students of Medicine 1631	on Practical Obstetrics 426	of Practice of Medicine 1440	Thorne, W. E. Schott Methods of Treatment of Chronic Diseases of the Heart 1242	Throat and Nose, and Their Diseases 426	Tirard, N. Albuminuria and Bright's Disease 301	Transactions of American Microscopical Soc. 619, 745	of Indiana State Medical Society 1631	of Iowa State Medical Society 1632	of Soc. Surg. and Gyn. of Women 619, 745	Treatment of Pelvic Inflammation Through Vagina 682	Treatise on Orthopedic Surgery 1440	of Gergers 926	Tranax, Chas. Mechanics of Surgery 301, 683	Tuttle, G. M. Diseases of Children 1242	Twentieth Century Practice 682	Urinary Analysis and Diagnosis 426	Walker, N. Introduction to Dermatology 1242, 1565	Wasting Diseases of Infants and Children 926	Wells, W. H. Compend of Gynecology 1242	Wharton, H. R. Minor Surgery and Bandaging 926, 1565	What a Young Husband Ought to Know 993	Ziegler, E. General Pathology 619, 1182
--	---	--	--	---	--	--	--	---	--	--	---	--	---	--	---	---	---	---	---	--	--	--	---	---	--	--	--	--	--------------------------------------	---	---	--	--	---	---	---	---	---	--	---	--	--	---	---	---------------------------------------	--	--	---	--	---	--	--	---	--	--	---	--	---	--	---	--	------------------------------------	---	--	---	--	-------------------------------------	---	--	--	---	--	---	---	------------------------------------	---	--	------------------------------------	---	--------------------------	---	--	-------------------------------	--	---	---	---	-----------------------------------	---	--	---	--	--	--	---	--	--	---	------------------------------	---	--	---	---	--	-----------------------------------	--	---	---------------------------------------	---------------------------------------	---------------------------------------	--	---	--	---	------------------------------------	------------------------------------	---	--	---	-----------------------------------	---	--	---	--	---	---	---	---	---	---	---	---	---	--	--	--	--	--	--	--------------------------------	-----------------------	---	--	--	--	------------------------------------	---	---------------------------------------	--	---	---	---	--	---	--	--	---	---	--------------------------	---	---	--	--	---	--	---	--	--	---

DEATHS AND OBITUARIES.

Adney, W. M. 1116	Adair, Walter 683	Adams, Chas. W. 427	Allen, D. K. 1308	Aldop, W. N. 302	Ammon, J. 620	Antes, H. I. 1441	Armstrong, F. C. 1632	Armstrong, S. T. 1566	Arnold, J. 1691	Ayers, W. N. 745	Babeock, Geo. W. 302	Becher, J. 421	Brinkbridge, J. 1308	Ball, C. 1441	Balfour, W. J. 872	Barkode, Randolph V. 620	Barnes, H. T. 927	Boale, S. B. 1632	Boaman, J. J. 1441
---------------------------	-----------------------------	-----------------------------	---------------------------	--------------------------	-----------------------	---------------------------	-------------------------------	-------------------------------	-------------------------	--------------------------	------------------------------	------------------------	------------------------------	-----------------------	----------------------------	----------------------------------	---------------------------	---------------------------	----------------------------

GENERAL INDEX.

Beane, W. H.	1441	Barley, Wm. H.	1116
Benbrook, Otis B.	302	Harris, C. K.	872
Bennett, L.	1188	Harris, John S.	621
Bennett, W. H.	872	Harrison, J. B.	683
Benzing, A.	1440	Hartman, W.	1441
Binney, John	1504	Hartman, William D.	683
Blythe, E. E.	620	Hasslet, R. W.	683
Boyd, S. H.	1182	Hasselping, J. H.	1504
Boyer, P. A.	1116	Henderson, E. P.	872
Boydett, F. P.	1632	Henrichs, G. A.	1632
Brechin, W. P.	1632	Henrichs, Chas.	1632
Brinton, Daniel G.	808	Hill, Chas. Howard	302
Brown, Alfred	808	Hillman, J. L.	1441
Brown, Ira DeWitt	302	Hobbs, P. M.	1308
Brown, Joshua A.	1440	Hoffman, W. C.	1308
Brown, W. C.	1308	Holladay, R. J.	1116
Brundage, G. W.	1441	Hoopler, I. W.	1116
Bundy, S. H.	302	Hubbard, E. C.	745
Burdick, Burrows	872	Humphroy, H. S.	1632
Butler, Geo. M.	683	Hunter, Robert	306, 427
Caemermer, Whitam H.	1115	Ireland, John T.	493
Campbell, Jas.	1308	Isham, John W.	53
Caniwell, A. W.	1183	Jard, J.	1504
Card, D. A.	1566	Jackson, A. L.	1116
Carlisle, S. B.	1308	Jackson, J. S.	1183
Carroll, J. A. W.	872	Jacobus, William A.	621
Carter, E. P.	872	Jacks, C. K. R.	1183
Carr, G.	1504	Jacks, C. K. R.	302
Chapman, Clarence	302	James, T. D.	1632
Charbonnet, J. G.	1461	Jencks, H. L.	1441
Chen, Edward W.	1441	Jenks, T. L.	1183
Chenoweth, G. B.	1183	Johnson, J. E.	1116
Christy, S. S.	302	Johnson, P. M.	1116
Clark, L. A.	302	Johnson, James T.	493
Clendenin, Surgeon	1116	Johnson, R. H.	1441
Cleveland, Percy E.	1116	Johnson, D. E.	1441
Coblenz, Joseph	1116	Johnson, L. M. B.	1441
Cochran, J. H.	1116	Johns, Geo. H.	1632
Coker, Ira E.	1632	Jones, P. M.	493
Coker, S. R.	1308	Jones, T. R.	1441
Coleman, Hyron S.	1632	Judd, James F.	302
Coleman, B.	1632	Kelly, J. J.	1308
Cone, W. D.	1504	Kelly, J. J.	1183
Converse, Geo. V.	808	Kelly, J. H.	1504
Cook, J. H.	620	Ketch, S.	1632
Craig, Alexander	302	Ketch, S.	302
Cram, C. W.	493	King, A. H.	745
Crompton, R. T.	1441	Kistler, J. K.	1632
Crow, E. W.	807	Klamer, H.	808
Cruise, Robt. B.	808	Klme, Lynn	493
Culbertson, R. H.	1441	Kortright, James L.	620
Cunkle, L. A.	927	LaGrange, O. D.	1504
Curtis, Henry C.	994	Lanford, G. A.	1632
Cusack, Thos. Geo.	994	Latta, M. M.	1504
Cunkle, L. A.	927	Lawrence, Cyrus N.	302
Dale, J. W. H.	683	Leighton, Nathaniel W.	493
Daliam, Wm. H.	620	Leis, J. R.	1632
Davis, A. O.	427	Leitch, H. C.	1116
Deaths Abroad	175, 306, 621, 872, 927, 994, 1116	Lincoln, John J.	620, 683
Dederick, John W.	1183, 1275, 1441, 1566, 1632	Linthicum, D. A.	427
DeLoeff, E.	1183	Little, T. A.	1441
Daise, E.	1307	Lockman, W. A.	1566, 1632
Dixon, W. A.	174	Logan, J. M.	1632
Donovan, D. D.	174	Lomax, Joseph D.	366
Dorcas, Thos. J.	745	McAdams, Henry S.	1116
Drury, A. T.	1308	McClain, C. G.	493
Dunn, Ross	427	McClure, Robt. J.	745
Dutch, George Thomas	427	McConkey, Allen G.	53
Dwyer, Wesley Clark	52	McDonald, C. M.	1441
Eaton, H. P.	1183	McDuffie, W. C.	1440
Ellis, S. B.	1183	McEwen, Henry S.	1441
Ellivanger, Paul	1116	McFall, H. M.	1375
Erbman, M. S.	1441	McKnight, C. G.	1441
Evans, A. M.	1441	McLaughlin, M. A.	1375
Evans, George Frederick W.	175	McLennan, Samuel Brown Wylie	620
Farley, C. K.	1441	McMantry, D.	1441
Feely, Jas. F.	683	McNulty, John M.	1441
Felt, Francis J.	53	McTaggart, Jas.	1183
Fineke, Frederick H.	558	McTear, S. Veirs	872
Fischer, E. P.	1632	Maddox, Chas. J.	1183
Flitback, E. P.	620	Maddox, W. R.	1632
Fletcher, John M.	493	Maddox, Wm. D.	683, 1308
Foster, A.	1632	Martin, I. C.	1375
Foutch, N. S.	1441	Maxwell, J. C.	1632
Fricke, A. A.	1440	McIntosh, J. P.	1504
Fritz, P. L. H.	1308	Meador, M. A.	1375
Fuhrman, E. L.	53	Meador, M. A.	1375
Furass, A. I.	1375	Midd, H. H.	745
Garner, E. S.	175	Mirchod, H. W.	1116
Garner, Jan S.	392	Mohr, J. H.	927
Garner, W. A.	175	Mohr, H. H.	927
Gilbert, John H.	427	Murray, Henry	493
Gilmore, Samuel B.	620	Naylor, Robert	1632
Glynn, H.	302	Nelson, Wm. J.	302
Green, John M.	683, 745	Nelson, J. J.	302
Green, Nathaniel	175	Newland, T. J.	1441
Greene, Francis C.	1632	Noble, Frank F.	1504
Grimes, John T.	994	Norfolk, W. J.	1504
Groves, A.	1441	Northerly, Julius	620
Grove, S. M.	1632	Northrup, Katharyn N.	302
Grimes, John T.	994	O'Byrne, John M.	1632
Groves, A.	1441	O'Connell, Timothy H.	1632
Grove, S. M.	1632	O'Reilly, James H.	1632
Griffin, Jullian	745	O'Neil, John	302
Hall, J. N.	306	Oliver, R. E.	927
Hamilton, E. L.	175	Padon, W. F.	927
Hamilton, Geo.	1183	Pardee, Chas. J.	1375
Hamilton, John V.	366	Parker, W. A.	427
Hanser, Rudolph	872		

Pedigo, Emory	1116	Pennington, M. J.	621
Pennington, M. J.	621	Plunkett, F. C.	683
Phoha, Geo. S.	683	Porter, Henry N.	1441
Porter, Henry N.	1441	Pratt, Nathan	558
Prentiss, D. W.	683	Raid, M. D.	1504
Raid, M. D.	1504	Ransone, A. L.	872
Ransone, A. L.	872	Rea, R. H.	1632
Rea, R. H.	1632	Reed, C. R.	1441
Reed, C. R.	1441	Reeves, L. W.	620
Reeves, L. W.	620	Richardson, N.	927
Richardson, N.	927	Robbins, W. E.	302
Robbins, W. E.	302	Robertson, H. D.	1441
Robertson, H. D.	1441	Robertson, J. C.	872
Robertson, J. C.	872	Robinson, Chas. Thos.	1308
Robinson, Chas. Thos.	1308	Robinson, C. V.	1441
Robinson, C. V.	1441	Robinson, S. Q.	1116
Robinson, S. Q.	1116	Ropp, T. T.	872
Ropp, T. T.	872	Rosenberger, S.	1632
Rosenberger, S.	1632	Rosenthal, David	306, 427
Rosenthal, David	306, 427	Ruback, J. E.	683, 746
Ruback, J. E.	683, 746	Ryan, G. W.	427
Ryan, G. W.	427	Sayre, J. S.	1504
Sayre, J. S.	1504	Schapps, Cornelia H.	683
Schapps, Cornelia H.	683	Schenck, Dennis	1183
Schenck, Dennis	1183	Shen, P.	1183
Shen, P.	1183	Schmidt, Rendish H.	427
Schmidt, Rendish H.	427	Schrenk, Andrew	620
Schrenk, Andrew	620	Schurman, Irving C.	493
Schurman, Irving C.	493	Scott, Wm. J.	63
Scott, Wm. J.	63	Seville, Sheldon S.	994
Seville, Sheldon S.	994	Sevak, J. E.	1116
Sevak, J. E.	1116	Seaton, W. H.	493
Seaton, W. H.	493	Sellards, A. W.	1441
Sellards, A. W.	1441	Senkler, J. E.	1441
Senkler, J. E.	1441	Seward, J. J.	1183
Seward, J. J.	1183	Shaw, P. M.	1441
Shaw, P. M.	1441	Shepard, Edward T.	621
Shepard, Edward T.	621	Sheppard, M. J.	1116
Sheppard, M. J.	1116	Sherman, S. A.	1183
Sherman, S. A.	1183	Shields, Joseph	621
Shields, Joseph	621	Short, J. H.	1359
Short, J. H.	1359	Sigler, Chas. J.	302
Sigler, Chas. J.	302	Simpson, Edward B.	994
Simpson, Edward B.	994	Simpson, J. T.	1004
Simpson, J. T.	1004	Smith, G. M.	1504
Smith, G. M.	1504	Smiley, Jas. F.	994
Smiley, Jas. F.	994	Smith, C. G.	994
Smith, C. G.	994	Smith, Francis B.	1441
Smith, Francis B.	1441	Smith, G. F.	1441
Smith, G. F.	1441	Smith, Jos. H.	994
Smith, Jos. H.	994	Smith, M. M.	1441
Smith, M. M.	1441	Smith, M. J.	1375
Smith, M. J.	1375	Smyth, Jas. R.	994
Smyth, Jas. R.	994	Soorer, H. J.	306
Soorer, H. J.	306	Spencer, Henry G. P.	1116
Spencer, Henry G. P.	1116	Sprague, Edward	621
Sprague, Edward	621	Stafford, John T.	302
Stafford, John T.	302	Stallard, A. H.	138, 144, 842
Stallard, A. H.	138, 144, 842	Stankewald, H.	493
Stankewald, H.	493	Stangewald, H.	493
Stangewald, H.	493	Stockwell, C. M.	1632
Stockwell, C. M.	1632	Stone, James L.	621
Stone, James L.	621	Strong, D. H.	302
Strong, D. H.	302	Strugia, Russell	302
Strugia, Russell	302	Summers, Thomas Osmond	55
Summers, Thomas Osmond	55	Taggart, A. H.	53, 54, 111
Taggart, A. H.	53, 54, 111	Tamblyn, J. T.	1632
Tamblyn, J. T.	1632	Taplin, Wm. T.	53
Taplin, Wm. T.	53	Taylor, Wm. C.	1375
Taylor, Wm. C.	1375	Templeton, W.	1441
Templeton, W.	1441	Thom, J. Pembroke	620
Thom, J. Pembroke	620	Thomas, Francis A.	927
Thomas, Francis A.	927	Thomas, Frederick Smith	620
Thomas, Frederick Smith	620	Thorne, Max	620
Thorne, Max	620	Thornton, T. W.	1183
Thornton, T. W.	1183	Tilton, F. H.	1004
Tilton, F. H.	1004	Todd, S. S.	1182
Todd, S. S.	1182	Tracey, J. S.	366
Tracey, J. S.	366	Trout, Wm. F.	745
Trout, Wm. F.	745	Trout, Geo. H.	620
Trout, Geo. H.	620	Trubbs, Henry	302
Trubbs, Henry	302	Tucker, J. L.	1308
Tucker, J. L.	1308	Turner, Wm. H.	1441
Turner, Wm. H.	1441	Uetzel, Arnold	745
Uetzel, Arnold	745	Volker, H. A.	1632
Volker, H. A.	1632	Van Bach, C. L.	1116
Van Bach, C. L.	1116	Wade, J. G.	745
Wade, J. G.	745	Wallach, J. L.	1441
Wallach, J. L.	1441	Waters, C. F.	1632
Waters, C. F.	1632	Wayson, Geo. W.	927
Wayson, Geo. W.	927	West, J. H.	1440
West, J. H.	1440	Westerveld, J. D.	1632
Westerveld, J. D.	1632	White, Stephen Stewart	52
White, Stephen Stewart	52	Whitworth, E. M.	1004
Whitworth, E. M.	1004	Whitten, W.	1441
Whitten, W.	1441	Williams, F. W.	1504
Williams, F. W.	1504	Wilson, R. J.	1441
Wilson, R. J.	1441	Winnans, F. M.	620
Winnans, F. M.	620	Witherspoon, J.	302
Witherspoon, J.	302	Wolf, John F.	1632
Wolf, John F.	1632	Wood, J. H.	1632
Wood, J. H.	1632	Woodruff, D.	302
Woodruff, D.	302	Woodbridge, D.	1307
Woodbridge, D.	1307	Woodward, George	872
Woodward, George	872	Worthington, Prose C.	807
Worthington, Prose C.	807	Wright, Walter M.	53
Wright, Walter M.	53	Young, Israel G.	927
Young, Israel G.	927		

DISCUSSIONS.

Abbs, Robert	164, 1422
Abraham, Dr.	916
Albarran, C. J.	1363
Alldrich, Dr. J.	796, 1169, 1368
Alexander, A. S.	1359
Alexander, E. S.	58
Allen, G. L.	1293
Allsben, J. A.	918
Allen, Dr.	1307
Allen, Dr.	1085
Allen, S. E.	164, 2465
Allen, S. E.	773, 1146
Allport, Frank	1006, 1474
Amber, C. P.	1085
Anderson, J. R.	191, 507
Arnold, H. D.	835
Arnold, H. D.	22, 28, 144
Atwood, H. D.	835
Axtell, E. R.	28, 766
Ayers, Dr.	1327
Bacon, C. S.	1424, 3466
Baker, A. R.	950
Baker, C. H.	1146
Baker, Dr.	927
Baldwin, J. F.	268, 913
Balinger, Wm. L.	125, 977, 979
Bangs, L. B.	1293
Barab, J. H.	667, 668, 913
Barclay, W. F.	1101, 1427
Barney, Ida C.	1360
Barroll, J. F.	770, 1334
Bartholomew, J. N.	978
Baum, W. L.	349, 1168, 1227
Beck, J. H.	1227, 1263
Bell, Dr.	670
Bell, James	661
Benedict, A. L.	669, 765
Bernstein, E. J.	770, 773, 1101
Bettman, Henry	918
Bettman, H.	1359
Bevan, A. D.	317, 700, 776, 917, 1456
Billing, Frank	1101
Bishop, Leo	585
Bloch, G. M.	948, 977
Bloch, A. A.	1357
Bloch, Dr. C. G.	582
Bloom, G.	994
Bonfield, C. L.	456

Coulter, J. H. 771, 889, 1069
 Cox, Jesse 38
 Crawford, S. K. 1358
 Croft, T. J. 1043
 Crook, T. D. 592
 Crowley, C. C. 1426
 Crummer, B. F. 1423
 Currie, Dr. 164, 1422
 Curtis, E. F. 548
 Cusachs, P. L. 1427
 Cuthbertson, Wm. 1427
 Dalton, T. S. 41, 548, 677
 Dalley, Eleanor S. 1423
 Dalrand, Judson S. 21, 255, 413
 Deacon, Dr. 766, 834
 Dana, Dr. 1356
 Dendridge, N. P. 918
 Davis, N. S. Dr. 285, 287
 Davis, W. E. B. 701, 914, 939
 Deaver, J. B. 164, 318, 942
 De Lee, J. B. 1424
 De Schweinitz, G. E. 1255, 1687
 Deason, Dr. 1363
 Dewey, Richard 354
 Dick, Dr. 180
 Dock George 22, 256, 507
 Donnellan, P. S. 766, 834
 Dorsett, Walter B. 208, 209, 566, 912, 942, 1012, 1043
 Doud, Wm. H. 268, 861, 862
 Duff, John M. 913, 914, 942, 982, 1043
 Dufield, Wm. 709
 Dugan, R. C. 776, 896
 Dugan, E. B. 451
 Dunn, J. C. 1599
 Dunning, L. H. 861, 862
 Duquapier, E. M. 871
 Dungey, S. H. 7223
 Dyer, Isadore 671
 Earle, F. M. 1423
 Eastman, J. B. 380, 951
 Earnest, J. G. 1614
 Eastman, B. D. 1360, 1361
 Eastman, Jos. 186, 862, 929, 982
 Eastman, J. R. 263
 Edsall, D. D. 766, 883
 Edson, E. E. 766, 164
 Elder, Dr. 669
 Elliott, A. R. 139, 765, 767
 Ely, Robert 1103
 Epstein, E. M. 1103
 Eschner, A. R. 983
 Evans, Dr. 824
 Evans, G. H. 415
 Evans, W. M. 38
 Ewing, Dr. 949, 1136
 Fair, G. A. 232
 Fairchild, D. S. 813, 951
 Faith, Thomas 1654
 Farber, Jas. H. 508
 Farth, H. B. 508
 Ferguson, A. H. 1219
 Fiedler, F. S. 823
 Finner, E. D. 700, 817, 817
 Flexner, S. 1362
 French, P. 1406
 Fritz, Prof. 452, 453
 Frutkin, T. 1143
 Foster, Dr. 1143
 Frederick, C. C. 126
 Freeman, L. 413, 631, 817
 Fryer, O. T. 186
 Freiberg, A. 162, 795, 918
 Friedman, I. 1358
 Friedman, T. 1169
 Fry, R. D. 1169
 Fitcher, T. B. 191, 835
 Garrison, Harriet E. 842, 944, 948, 949
 Gehrman, A. 1223
 Gessner, H. B. 548
 Gibson, J. D. 1357
 Gibson, J. D. 209
 Gifford, H. T. 1065, 1327, 1582
 Gilliam, T. T. 209, 210, 1043, 1043
 Gitting, J. C. 101
 Gleason, E. B. 3357
 Gleason, J. Riddle 342
 Goldspohn, Albert 185, 186, 452, 1455, 1457
 Goodkind, M. L. 286
 Gould, Geo. M. 1226, 1227, 1454
 Grandle, H. 111, 218, 818
 Grant, James 668, 870
 Gray, T. B. 1049, 1063
 Greene, D. M. 1070, 1130, 1323
 Gnyard, Dr. 1362
 Gillingham, Dr. 1255
 Gilman, W. D. J. 210, 566
 Hall, Dr. 1360
 Hallberg, C. S. 1328
 Hale, A. L. 134, 1474
 Hall, C. L. 977
 Hall, Ernest 668, 870
 Hall, Ernest 668, 870

Hall, R. B. 186, 566, 862, 913
 Hamann, C. 164, 796
 Hamilton, H. P. 1423
 Hamlin, Dr. 592
 Hammond, C. M. 1355
 Hancock, J. 1423
 Hamonic, Dr. 1363
 Hare, H. A. 42, 253, 508, 1362
 Harrington, A. J. 1423
 Harris, C. 380, 776, 819, 1457
 Harrison, Dr. 668
 Harrison, C. H. 1423
 Hartford, Johnson 668
 Hartman, R. E. 978
 Hawley, C. W. 1257
 Hawkins, V. 978
 Haycraft, F. 959, 943
 Henry, R. H. 138
 Henry, W. O. 1012
 Herrick, J. E. 323
 Herrington, Dr. 584
 Hingston, Wm. 669
 Hoeg, J. C. 1424, 1454
 Hohes, W. J. 1424
 Hollinger, J. 286
 Hollister, J. H. 1256
 Holmes, Dr. 773, 1207
 Holmes, C. R. 388, 773, 950, 1145
 Holmes, T. K. 669
 Homach, R. 1424
 Hoover, C. F. 795, 1359
 Horwick, H. B. 1222, 1223
 Horwitz, Dr. 1228
 Housh, G. 917, 1654
 Houne, A. F. 164, 328
 Howard, W. T. 212
 Howard, W. 912
 Hubbell, A. A. 1473, 1582
 Huddleston, J. H. 1293
 Hughes, C. H. 591, 592, 845
 Hulings, Dr. 212, 1582
 Hulen, V. H. 291
 Humiston, W. H. 164, 185, 965, 796, 862, 912, 1012
 Humphrey, J. 978
 Hunkin, S. J. 415, 846, 1142
 Huntington, T. W. 1101, 1162
 Hurst, C. 1223
 H. Edward J. 1213
 Iloway, H. 978
 Ingals, E. Fletcher. 561, 862, 385, 917, 1358
 Ingersol, J. M. 1358
 Ingraham, Dr. 668, 1478
 Ingraham, Edward 1006, 1475
 Jacobs, A. 1165, 1292
 Jacobs, Dr. 983
 Jenkins, Dr. 139, 585
 Jepson, Wm. 951, 1127
 Johnson, F. S. 255
 Johnson, W. 1223
 Johnson, A. F. 378
 Jones, H. I. 40
 Jones, H. 291
 Jones, S. S. 163, 291
 Judson, Dr. 826
 Keen, Dr. 212, 1006
 Keller, G. F. 212, 1006
 Keller, T. F. 1263
 Kelly, S. W. 548
 Kelly, Dr. 1427
 Kelly, H. A. 818, 938
 Kerr, Dr. 1426
 Kiernan, J. G. 1226, 1274, 1275
 Kilsch, Dr. 1425, 1142
 Kollischer, G. 1425, 1142
 Koplik, H. 1226
 Kronen, V. 843
 Krentzmann, H. 1427
 Krotzkymer, Z. 291
 Koh, Dr. 282, 1085
 Kyle, D. B. 984, 978
 Lancaster, T. A. 978
 Lanchester, T. A. 978
 Larnie, F. A. 542
 Lawrence, L. J. 1263, 844
 Lawrence, M. 844
 Lawrence, A. I. 946, 286
 LeBeuf, L. G. 1063
 LeBeuf, F. 1222, 820
 Lee, E. H. 820
 Lenka, A. F. 282, 1085
 Leonard, Dr. 944
 Lewis, W. M. 1293, 1356
 Lett, Dr. 668
 Levin, Zephaniah 667
 Lewis, R. 1359
 Levings, A. H. 813, 1292
 Levy, Robert 385, 709, 1231
 Lewis, C. J. 1103, 1164
 Lewis, Dr. 1425
 Lewis, Dr. 317
 Lewis, H. F. 1425
 Lewis, Dr. 844
 Licenzrutz, A. 1426
 Lippincott, J. A. 1474
 Losh, H. 709, 770, 801
 Longshore, D. 1361
 Longyear, H. W. 862, 1044

Lord, J. Prentiss. 380, 631, 773, 818
 Lowman, J. H. 1358, 1359
 Lyman, H. M. 281
 McKee, L. 1423
 McArthur, L. E. 776, 917, 1406
 McAllister, J. C. 770
 McBurney, Chas. 1422
 McCreary, John H. 1423
 McClanahan, H. M. 1423
 McCune, J. P. 1427
 McCondy, S. P. 228, 315, 1088, 913
 McCondy, S. L. 1063
 McGuire, Dr. 1614
 McMurtry, L. S. 861, 862
 McQuay, W. G. 813
 McTear, F. W. 328, 816, 819, 1014
 MacLair, J. Jr. 1423
 Macdonald, W. G. 914, 946, 951, 982, 1456
 Martin, F. H. 1456
 Magruder, M. J. 671
 Malsburg, J. O. 891
 Malsburg, J. O. 978, 1103
 Manley, T. H. 327, 382, 456, 776, 818
 Marcy, Henry O. 453, 776, 818, 817, 818, 943
 Marillet, L. O. 88
 Marshall, Dr. de 668
 Martin, Thos. Chas. 633, 977
 Mason, Dr. 1423
 Masser, G. D. 452, 565, 566
 Matthews, J. M. 813
 Matthews, L. I. 584
 Matthews, S. A. 287
 Maxwell, T. 385
 Mayer, E. 949, 1143
 Mayer, Emil. 385, 888, 1252, 1263
 Maynard, O. T. 1358
 Maynard, C. B. 1423
 Means, W. J. 363, 319, 380
 Meyer, Willy. 163
 Miller, Dr. 1475
 Miller, F. N. 192
 Miliken, S. E. 775, 818
 Mills, Dr. P. 338
 Allen, C. H. 128, 584
 Minner, J. E. 918, 1065, 1361
 Minor, C. L. 706, 1043, 1084, 1123
 Moffit, H. C. 415, 733, 734, 1426
 Montgomery, D. W. 162, 163, 228, 113, 488, 733, 734, 1101, 1423, 1427, 1593
 Montgomery, L. H. 1422
 Montzantier, F. 1427
 Moore, J. E. 378, 701, 819
 Moore, I. C. 944, 1423
 Morris, R. C. 700, 913, 982
 Morey, Harold N. 287, 978, 979, 1274, 1361
 Munn, C. E. 1361
 Murphy, J. B. 317, 318, 327, 700, 813, 819, 939, 1127, 1422
 Murrell, Dr. 826
 Murrell, J. H. 190, 596
 Musson, Emma E. 1331, 1357
 Myers, Wm. H. 982
 Myers, J. H. 1357
 Nelson, L. 1427
 Newman, Henry P. 1456
 Newmark, Leo 1013
 Niles, H. D. 1013
 Noble, C. P. 566, 940
 Norbury, F. P. 320
 Norton, C. 154, 906
 O'Brien, M. C. 1293
 Ochsner, A. J. 318, 326, 327, 819, 1063, 1069
 Olsver, J. C. 102
 Olsver, Wm. 1165
 Packard, F. A. 1357
 Padlock, C. E. 185
 Palfrey, E. 453
 Parham, F. W. 671
 Park, W. H. 1165
 Parker, D. L. 1327
 Patton, J. M. 351, 352, 1103
 Patrick, H. T. 282, 284, 286, 1042
 Pearce, F. 287, 288, 353, 844, 1042
 Pearce, F. 1227, 828
 Peck, A. H. 1227, 1228
 Pennington, J. R. 633, 977
 Perry, D. L. 1423
 Perkins, W. M. 548
 Peters, Dr. 669
 Peterson, R. 1456
 Pettit, George 671
 Petry, N. H. E. S. 592
 Pierce, John E. 1227
 Porter, Dr. 318
 Porter, M. F. 209, 328, 701
 Pousson, Dr. 1425
 Power, D. L. 668
 Pressay, A. J. 692, 693
 Price, J. J. 1169
 Probst, C. O. 983, 1103, 1593
 Pulton, John 1103

Purdy, Chas. W. 286
 Pyle, W. L. 1582
 Quinn, F. J. 709, 769, 891, 1263
 Rainald, Dr. 941
 Ransom, B. A. 801, 950, 1006, 1146, 1190, 1357
 Ranshoff, Jos. 701, 918
 Ranshoff, A. 1223, 1592
 Rayburn, Dr. 452
 Reamy, T. A. 150
 Reed, Dr. 210
 Richards, Dr. 795, 862, 941, 942
 Reed, C. R. 186, 208, 566
 Reed, R. H. 776, 820
 Reynolds, D. S. 1005, 1252, 1264
 Reynolds, D. S. 1005, 1252, 1264
 Richards, Dr. 1190
 Richards, Ellen H. 1223
 Richards, Geo. L. 709, 1143, 1147
 Ricketts, B. M. 913, 918, 1063
 Ricketts, Edwin. 565, 566, 862, 1012
 Rice, Emil. 456, 941, 1451
 Risley, David 891
 Risley, S. D. 1254, 1475
 Robb, Homer 164, 1359
 Robertson, Dr. 983
 Robertson, H. D. 667
 Robinson, F. C. 1223
 Robinson, W. 126
 Robinson, W. 701
 Rogers, F. T. 1473
 Rogers, H. W. 1359
 Rosenthal, Dr. 1293
 Rosenthal, Dr. 896
 Rosenthal, Edwin 712, 944
 Rosewater, N. 1456
 Rosenwasser, M. 164, 965, 982, 1359
 1044, 1169, 1359
 Ross, J. F. W. 185, 961, 962, 982
 Ross, L. V. 1423
 Roosevelt, Chas. 1423
 Roubach, L. F. 585
 Ruth, C. E. 186, 819
 Sacco, G. L. 1366
 Sager, E. E. 1358
 Sailer, Jos. 442
 Savage, G. C. 1473
 Schaefer, F. 338
 Schaefer, F. C. 456, 776, 978, 1320
 Schamberger, J. F. 1597
 Scheraga, J. J. 104
 Scott, Dr. 191, 584, 767
 Scott, H. S. 413
 Scott, B. 1359
 Seiberick, G. L. 1612
 Shambaugh, G. E. 125
 Shepherd, Dr. 668, 669, 701
 Sherman, H. 1103
 Sherman, H. M. 373, 734, 896, 1102
 Sherwood-Dunn, B. 185
 Skinner, C. 1615
 Skinner, C. M. 882
 Skinner, C. M. 1103
 Slagle, C. G. 848, 849, 895, 944, 1143
 Smeck, J. T. 1222
 Solly-Cohen, S. 983, 1169
 Solly, S. E. 709
 Spence, H. 1424
 Spence, H. 795
 Spencer John C. 915, 916
 Starr, M. A. 1223
 Starr, W. M. 1327
 Starr, M. A. 1356
 Stearns, W. J. 1275
 Stein, O. J. 1013
 Stein, O. J. 979
 Stenzel, A. 844
 Stern, A. E. 138
 Stern, A. E. 138
 Stoenberg, G. M. 1593
 Stoenberg, G. M. 254, 507, 767, 836
 Stout, C. C. 773, 891
 Straight, H. S. 709
 Strong, Mary. 1423
 Stuckey, W. A. 667
 Stucky, J. A. 770, 772, 1145, 1147, 1190, 1263
 Sudduth, W. X. 1274, 1275
 Starkey, W. L. 1327
 Tait, D. 162, 228, 483, 734, 1102
 Taylor, A. E. 1101, 1102
 Taylor, H. M. 977
 Taylor, H. M. 977
 Teaball, C. H. Jr. 671
 Tenney, Dr. 1475
 Tenney, W. A. H. 815, 1222
 Tenney, B. 291
 Theisen, C. F. 385, 1146, 1262
 Thistle, W. E. 1104
 Thomas, Dr. 671
 Thomas, H. M. 1103
 Thompson, J. H. 1253, 1327
 Thompson, W. H. 378
 Thompson, W. H. 318
 Timmerman, A. J. 1069, 1070, 1475
 Todd, F. 950
 Tomlinson, L. 1423
 Tuckerman, L. H. 592, 843, 1123
 Turck, F. B. 1104, 1406
 Tyler, Dr. 1168
 Valentine, F. C. 1123

- Vance, H. M., 102
 Van Seydelwitz, Dr., 103
 Veasey, C. A., 1255
 Venize, H. A., 671
 Vetter, 747, 1042
 Wagner, Dr., 318
 Wagner, John, 291
 Wahrer, C. F., 191, 313
 Walker, Dr., 1425
 Walker, H. O., 976, 977
 Walker, S. J., 844
 Warner, Frank, 747, 981
 Warren, L. H., 1042
 Wathen, W. H., 452, 942
 Watkins, T. J., 1457
 Webster, J. C., 1042
 Webster, J. C., 1457
 Weeks, J. E., 1583
 Weid, R. F., 1422
 Welch, W. H., 1223
 Wells, E. F., 139, 287, 351, 508
 Wendt, E., 320
 Wenzel, 42, 705, 706, 1359
 Werder, X. O., 861, 862
 Wertz, T., 1070
 Whiting, Fred, 1070
 Wilder, 456, 1013
 Whitson, W. H., 1473
 Williams, C. P., 1222, 1223
 Williams, J. C., 1457
 Williams, O. H., 1006, 1552
 Williams, S., 1168
 Wilson, J. C., 190, 255, 333
 Wilson, J. C., 746, 1338
 Witherspoon, J. A., 584
 Wolfer, Albert, 41
 Wood, Geo., 1359
 Woodbury, F., 1357
 Woolen, G. V., 770
 Woolsey, George, 1143
 Wright, A. H., 413
 Work, J. A., 944, 1143
 Wurdehann, H. V., 1476
 Wyeth, A. H., 985
 Wyman, H. C., 978
 Young, Dr., 1474
 Young, Philip, 917
 Zinke, Gustave, 917
- EDITORIALS.**
- Acromegaly, pathogenesis 674
- Action of hepatic, renal and other cells on phenol 1106
- Adenomyoma of female sex-organ apparatus 863
- Advance in psychopathologic study 1232
- Alcohol and longevity 988 and misrepresentation 1365 as a beverage 1233 food value of 46
- Ameboid chylata in disease 987
- Antisipping law, enforced 675
- Antitoxin in treatment of disease 1174
- Antivivisection bill in Congress 1556
- Aphasia and Writing 1496
- Army Medical Department 1496
- Arthro-neuralgia 1069
- Artificial disease, super-heated air in 1621
- Artificial production of normal larvae from unsterilized eggs of sea-urchin 1106
- As others see us 611
- Assocarrax and Senn medals 1178
- button 669
- Autointoxication, facts and theories 230
- Bacilli, typhoid, in urine of typhoid patients 358
- Bacteriologic relations of bile 174
- Bacteriology, a novel theory of 107
- Battle of the clubs 107
- Biologic demonstration of bacillary infection 1431
- Biology of Bacillus Tubercu-losis 1497
- Blisters, of cancer 1428
- Bleeding, internal 1047
- Blood count, altitudes and 612
- Bonds, should physicians give? 1305
- Braint weight as index of intelligence 486
- British medical association, 1919 681, 419
- Bronchitis, eosinophilous 798
- Bubonic plague 1366
- Burton, manner of life 797
- Cancer statistics, N. Y., 1300 treatment by its own toxins 1657
- Carcinoma of digestive or- gans, diagnosis 422 methods of study of 1057
- Castis, visceral formation of 1105
- Cats, and quackery 1107
- Cells lining peritoneum, changes in 104 origin of 864
- Cerebral rhinorrhea and otorrhea 1170
- "Cheep John" medicine 737
- Check, quackery 738
- Cheyne-Stokes respiration, diagnostic value of 1109
- "Christian Science" and med- ical practitioners 1049 and death certificates 1657 and Michigan law 1408
- folly 1421
- immorality of 1299
- phases of 297
- Club doctoring again 1557
- Commercialism in Sweden 1173
- Commissions 1173
- Congenital vaccin immunity 1409
- Congress of professional med- ics 1172
- Conscientious objections 420
- Consumption, new cure for 987
- Consumption, short way 1433
- Contagious disease, notifica- tion of 490
- Contemporary advertisements il- legit 1172
- Convulsive attacks, cerebro- spinal pressure with 738
- Cornel, strategy 1233
- Correction 675
- Covering, cells, weight and number 550
- "Covering" in Ohio 1365
- Cysticercus of fourth ventri- cle 296
- Cystinuria, form of 362
- Cytology, modern 1046
- Death-rate, influenza and 612
- Degeneration, of occupation 229 stress 229
- Degeneration 107
- Delusion, aggressive 107
- De minimis 48
- Department of public health 551
- Devil as a healer 489
- Diabetes mellitus, sugar 1656
- Diagnosis of malarial and ty- phoid fevers 1298
- Dilation of stomach due to con- tractile anastomosis, oesoph- odo-jenital junction by mesenteric artery and root of mesen- tery 487
- Diphtheria bacilli in the healthy 800
- treatment of, with anti- toxin 1554
- Diplexia, cerebral, etiology 1656
- Diploma-mill, Chicago 106
- Educational exigencies 1050
- "Divine healing" homicide 1621
- Doctor in literature 1300
- Doctores in law from medi- cine 1431
- Doctor's bills 47
- Druggists' responsibilities 1507
- Education, of 805
- Eighth commandment 422
- Elastic tissue under normal and pathologic con- ditions 1623
- Elephantiasis a sequel of re- moval of inguinal glands 109
- Endocardial benign and ma- lignant 609
- Enemata, nutrient 613
- Ephraim, as a name 1173
- Etymology and probability of arsenical origin 989
- Equestrienne reforms 1234
- Experimental typhoid 110
- Experimental lesions of nerve-cells 1231
- Extraintestinal inflammatory lesions caused by ty- phoid bacillus 675
- False etymology 1557
- Fatalities of Fourth 233
- Gaugreine in child, spontane- ous 170
- Gastric ulcer, pneumo- coccus septicaemia in guinea-pig 1366
- Glandular, in- gular, pleural gland 989
- Headache 1618
- Health officials unreasonable 553, 611
- Heart disease, valvular, prog- nosis 419
- Infraction of 939
- Hemochromatosis and bronzed diabetes 420
- Hereditary transformation in fiction 920
- Hospitals, public accusation against 800
- How much should be re- ceived 799
- Homburg va humbug 613
- Hypertension and hyper- trophy of pharyngeal tonsil 610
- Hysterical misalliances 168
- Immunologic natural 1208
- Index, the 1656
- Index Medicus Novus 1107
- Inebriety, disease of 504
- infantile convulsions, night terrors and epilepsy 1109
- Infection by telephone 1168
- Infection, new cure for 1234
- Infectious diseases, distur- bances of circulation in 292
- Injustice, apparent 1430
- Insanity, new cure for 1234
- Intervale of gynecology in 488
- Intercellular struggles and anticellular serums 1555
- International medical bibli- ography 987
- Intracellular injections 107
- Is birth-ratio in the United States decreasing 554
- Is child homicide legalized? 733
- Is there an oxygen habit? 1233
- Italian, new cure for 1431
- Journal and Canadian Med- ical Association 675
- Juvenile scrofula and pthi- sis 559
- Kissing boys 164
- Lack of appreciation of med- ical education 1367
- Lauder's paralysis 1063
- Liquid air in medicine and surgery 612
- Liver, etiology of 675
- Insufficiency of etiology 1297
- Local and national reproach 1299
- Localization of musical cen- trum 231
- Locomotor ataxia with can- cerum oris as fatal complication 234
- Lymphatic constitution in idiopathic epilepsy 728
- Magnetic heaters 981
- Malaria, etiology of 1880
- extermination of 1680
- in Soudan 232
- Malpractice suit, novel 1234
- Marriage, regulation of 987
- Medical bibliography 362
- confidences 1431
- in France 1188
- inspection of pupils 1232
- inspection of schools 1499
- legislation, uniform 730
- unethical 1022
- organization 922
- political clubs 922
- products, overmultiply of 740
- Members of medical profes- sion in U. S. 1618
- Menstruation and tuberculo- sis 170
- Mental aberration and labor disturbances 865
- Michigan medical laws 233
- Military projectiles 1622
- Moody, D., criticized physicians 380
- Morchia ceruleus 1050
- Morphism among physi- cians 1173
- Mosquitoes and typhoid 417
- Mortality statistics of com- ing census 921
- Nagging wives and nervous husbands 1347
- National department of health 233
- Nation, etymology of 1108
- Necrosis, hepatitis with 1432
- Nerves, peripheral, in infec- tious diseases 43
- Neurotic etiology 1362
- Nurse, female, in army 1432
- Nurse's responsibility 1556
- Oestrogenic treatment 866
- Oper-air treatment of pthi- sis 1239
- Oranzule-unite-centralize 354
- Osteomyelitis, as a way to give med- icine 420
- Ovary, transplantation of 168
- Oversold, etymology of, origin 168
- Oversight, editorial 489
- Overstudy of ministers and doctors 1049
- Pain, money value of 109
- Painless capital punishment 737
- Patented drugs: should physi- cians prescribe 160
- Perlarthritis nodosa, etc. 1369
- Pharmatropics 1108
- Pharyteritis 1049
- Physical development in America 1366
- Plagiarism, extraordinary 489
- will reach 106
- Polynephritis and pomye- litis 552
- Principality, enviable 866
- Priori, etymology of 46
- Pseudoreligion and quackery 359
- Psychology, physiologic, ad- vance in 675
- Psychiatry, sensational, ism 294
- "Pure foods" 1108
- Pyemia following thrombo- phlebitis superior vena cava 108
- Quackery should end 922
- wins in Iowa 351
- Quarantine of tuberculous 801
- suggested California 921
- Rabies with isolation of bac- teria 989
- Reciprocity in licensure 295
- Recrudescence of barbitum 293
- Red and white, etymology of 1430
- correlation of feces stim- ulating presence of blood in sputum 1620
- Reed and Garcia's reply to Snaarelli 735
- Reform in English General Medical Council 553
- Reform in progress 553
- Renal disease, blood corpus- cles in 1432
- inefficiency 736, 863
- Repeaters 1390
- Resuscitation in apparent as- phyxia or drowning 1174
- Rheumatic fever without arthritis 867
- Right to die 1049
- St. Luke's Hospital 420, 1049
- Saline irrigation for general septic peritonitis 1366
- Sanatogenic 377
- Sanitary officials, danger of 611
- Sanitary regulations of bar- itum 369
- Sarcina, pathogenic 1492
- Sarcoids of skin, multiple 1620
- Schenk's theory in practice 295
- School teachers and tubercu- losis 1622
- Septic fever and typhoid in- fection 1364
- Smallpox 108
- State, school nurses' 196
- Sound direction, determina- tion of 105
- Standardization, needed 44
- Stomach, paralytic dilatation of 1299
- Summer resort, of 1299
- Superstition and the plague 1621
- Surgeons appreciated 1298
- Syphilis and leprosy 1045
- Switzerland 1497
- The Letter Killeth 1497
- Testimonial and medical evidence 675
- evolution 553
- Texas quarantine 1172
- To members of medical profession 618
- Tonsils as portals of entry of bacilli 1299
- as portals of infection 1620
- Traumatic 1296
- character 1296
- Trichinosis, diagnosis of 47
- Tubercle, fatal risk of 1347
- Tuberculosis and cattle 420 and life insurance 1429
- bovine vs human 799, 1557
- concomitant, notifica- tion of 553, 611
- congenital 168
- in animals 1497
- in children 1048
- in pets 47
- location of primary le- sion, problem 8
- solved and work in 549
- of dog 1490
- of stomach and duode- num 165
- pulmonary, lesion of 108
- pulmonary, mixed infec- tion 1619
- surgical treatment 106
- through milk 988
- through placenta 736
- transmission of acquired 1536

GENERAL INDEX.

xxvii

	PAGE.		PAGE.		PAGE.
Tuberculous oculation.....	46	Ulcers of stomach, treatment	165	Ventricular band speech in	361
Typhoid antibodies and ag-		of	165	hysteric aphonia.....	361
glutinins	1171	Undertakers, enterprising ..	321	Virchow's .. seventy-eighth	
Typhoid fever and drinking		Uniform medical legislation, 790		birthday	1298
water	1298	Vaccinia, generalized, of		Vital statistics, fallacies of, 108	
perforation, operative		eruptive type	296	in Indiana	1173
treatment	1172	Vaccination, enforced	322	Voice, American	295
Typhus fever, case of at Phil-		Venerent disease and Brussels		Washington's death	1430
adelphia	1301	confereuce	866	Whooping-cough and rickets.1022	
				Women's clubs and patent	295
				medicine	295
				Woodbury vs. Eddy.....	1173
				Wych's Dr., "Life of For-	
				rest."	1234
				X-rays, diagnostic utility of.1498	
				Yellow fever	361, 421, 676
				as a controllable disease 421	
				microbe of	672
				Zoophilism and degeneracy..	735

INDEX OF TITLES OF AMERICAN MEDICAL LITERATURE.

- Abdomen, colloid cancer of. 1030
 injuries to from blunt force 533
 pistol-shot wound of. 850
 preparation for operation 1154
- Abdominal (see aneurysm, cancer, celiotomy, contusions, dress, electrode, fibroid, pregnancy, sections, surgery, symptoms.)
- Abdomino-perineal pectosigmoidectomy 850
- Abortion (see also abscess), 902, 1410
 and insanity. 1411
 criminal. 338
 justifiable, when indicated 1214
 missed, case of. 323
 sequene and treatment. 902
 tubal, case. 850
 with "dying declaration" 1252
- Abscess (see appendix, encephalitis, hip disease, ossification, pectoraria, peritonsillar, perityphilitis, thrombophlebitis).
 abscess of pyosalpinx after abortion 1214
 antrals, asthma from. 902
 brain, acute bilateral. 850
 brain, with peculiar symptoms 850
 cerebellar, case. 532
 cerebral in child, complicated 339
 cerebral, in new-born. 1347
 hepatic, etiology, diagnosis, treatment. 272
 ischio-rectal, case. 902
 hip, fourteen cases. 1155
 mammary 783
 of sigmoiditis 1155
 of lung. 1282
 of uterine wall. 1648
 otitic brain, operation 469
 of parotid gland. 150
 palmar, operations in. 469
 pelvic, after abortion. 1214
 pelvic, in woman. 150
 pelvic, peptonuria in. 492
 peritonsillar 339
 perityphilitic, case. 1281
 pharyngeal following tonsillotomy 903
 psos, open method in. 1601
 subphrenic 1281
 temporal, removed through attic. 272
 tonsillar and circumtonsillar 902
 tubercular, of cheek. 1539
- Accident, remarkable. 1087
 unusual 1347
- Acetabular head of femur in middle epiphyseal fracture 1020
- Acholia (see bile).
- Acid, acetic (see cellulitis, maorold, poisoning, scarlet fever).
 hydrochloric and starch digestion 1282
 Acme, lodid of potash in. 92
 nature and treatment of 1410
 vulgaris, treatment. 1155
- Acid. 339
 case. 93
 case and eye symptoms. 1030
- Actinomyosis in man. 1029
 in man, in America. 1281
- Action, physical, equivalents 783
- Addison's disease, case. 150
 disease in infancy, etc. 1029
 disease, suprarenal extract in. 903
- Address. 92, 721, 902, 1649
 Am. Laryng. and Rhinol. and Otol. Soc. 338
 Am. Neur. and Surg. Assn. before Charity Hosp. Alumni Assn. 468
 Canadian Med. Assn. 967, 1214
 chairman's 656
 commencement. 28
 Confer. Med. Col. 902
 delectate 902
- Address, historian's. 92
 in medicine. 967
 Kingston M. S. S. Soc. 1214
 Med. Soc. of Colo. 272
 Socio-Chir. Col. 1347
 Soc. of Med. Sci. 469
 N. Mo. Med. Assn. 469
 of welcome. 28
 Ohio, State Med. Soc. 92
 President's M. S. Soc. 20, 151
 president's, Am. Derm. Assn. 656
 president's A. M. S. 28, 469
 272, 468, 469
 to Col. of P. & S. 338
- Adenitis, tuberculous, remarks on. 1088
 cervical, tubular. 1478
- Adenocarcinoma (see nose).
 Adenoids (see diphtheria, ear trouble, hemorrhage, respiration, tonsils).
 influences of. 402
 neglected, and results. 1410
 Adenomas, rectal. 1649
- Adenosarcoma (see septum) in ngress. 1539
- Adhesions, intrapelvic. 1154
 intestinal, in pelvic dissection. 1478
- Advertising, medical, policy, ethics, etc. 656
- Africa, life in west. 29
 aged, diseases of. 1153
 Agnaphia, case of. 1478
 Agr, entrance into circulation. 1282
 hot dry, therapeutical of. 903, 1411
 liquid, clinical uses of. 533
 liquid, in medicine and surgery at. 272
 Air-passages, foreign body in 595, 902
- Albumin (see urine).
 quantitative determination of. 656
- Albumins, test for. 1539
- Albumuria (see eye, hemorrhage, nephritis, pregnancy, diagnostic symptom. 783
 febrile. 1539
 observations on. 1154
 Albumose peptone, value of. 1478
 Albumosuria (see urine).
 Alcohol (see usefulness, action and alcoholism).
 drinking of. 1649
 is condemnation just. 338
 on the mind. 1281
 operations without. 1087
 (see amblyopia, blindness, congress, epilepsy, schools).
- Alcoholism. 1155
 and mortality. 522
 pathology of. 502
- Alexander's method of technique of. 532
 operation on uterus. 1601
- Allergic, problems of. 783
 Allergoids and curacy. 907
- Allopecia arcata, two epidermic 783
 circumscribed. 92
- Altitude, see blood changes, consumptive, heart disease.
- Amalgam fillings and mercurial poisoning. 1215
- Amanorosis after use of dynamite 595
- Amblyopia, locomotor, case. 150
 from methyl alcohol. 150
 locomotor, railroad employes. 1154
 Ameba, ciliata in disease. 903
 ciliata in disease. 907
 Amenorrhoea. 1347
- Ametropia and heterophoria, prevalence of. 52
 significance of. 902
- Amputation, 783
 of the term abolished. 29
 tenotomy preferred to. 378
- Amrygdalitis, bacillary acid in. 1088
- Anal surgery, rectal, progress in. 1540
- Anastomoses of alimentary tract. 967
- Anastomoses, vesico-rectal. 1030, 1155, 1601
- Anatomy teaching, defects of our 1214
 visceral, study of. 1601
- Anemia (see arthritis, spine).
 in form of. 656
 iron in. 1410
 pernicious, blood examination in. 272
 pernicious, cases. 1154
 progressive pernicious. 1411
 Anemias of intestinal origin. 902
 Anemic conditions, peptomangan in. 1411
 Anesthetics. 721
 Anesthesia. 1347
 and anesthetics. 1281, 1601
 and anesthetics, surgical. 1539
 by suggestion. 305
 local 783
 nitrous oxid, ether, etc. 492, 92
 oxygen with ether for. 92
 paralysis following. 1088
 Schleich, in 110 operations. 1601
 technic of. 1468
- Anesthetic, beta-eucin as 1088, 1347
 ethyl bromid as. 657
 ethyl chlorid as. 902
- Anesthetics, comparative safety of. 903
 comparative of. 1539
 discussion on. 1478
 effects on kidneys. 903, 1347, 1478
 eighty-six cases of. 1601
 how to give. 29
 in obstetrics. 903
- Anesthetization, blood examination and. 214
 Aneurysm 967
 abdominal. 1087
 arteriovenous in Scarpia's hernatoma simulating. 1088
 of arch, early diagnosis. 1539
 of aorta. 721, 967, 1601
 of aorta, retracted. 1154
 of aorta, unusual. 28
 of coronary artery. 721
- Angina, Ludwig's and cervical suppuration 967
 Ludwig's, cases. 150
 pericarditis, aortitis and. 1214
 Antidotes, 1281
- Animal doctors and patients. 595
 Anriods, total, cases of. 1649
- Ankylosis of hip-joint. 721
 Anomia and paranoimia. 1601
- Anthonem, the. 595
- Anthrax affecting man. 1087
 in Ontario. 1214
- Antinosis (see nosoph, ulcers).
 Antipyretics in children. 272
- Antisepsis, gastro-intestinal. 214
 Antisepsis in peptic practice 656
 intestinal. 1214
- Antitoxin (see serum)
 Antitoxin, diphtheria, intubation, tetanus). 150
 Board of Health and. 656
 diphtheria, hypodermically. 903
 dry, value in diphtheria. 272
 in diphtheria. 338, 595
 in light of intubation. 1154
 treatment of diphtheria. 1030
- Antivenene (see leprosy).
 Antral disease, study of. 92
- Antrum, maxillary, chronic of perforating. 468
 Anura, case. 1029
 of the hours' duration. 1539
 post-operative notes on. 1281
- Anus, artificial, cure of. 902
 artificial for three weeks. 92
 diseases of rectum and. 1649
 imperforate with fistula. 902
- Aorta (see aneurysm).
 Aortic regurgitation, etc. 1539
 Aortitis (see also angina). 215
 Aplasia in typhoid fever. 1539
- Apoplexy, treatment of. 1601
 Appendicitis (see also hernia, lead lines, fracture). 902
 1087, 1410, 1539, 1649
- Appendicitis, acute. 903
 a medical and surgical 656
 and country doctor. 214
 cases of. 903, 1087, 1155, 1347, 1410, 1601
 complications of. 468
 considerations of. 1478
 early operation in. 1282, 1347
 infection from treatment. 1602
 ment, case. 967
 left-sided. 902
 leucocyte count in. 849
 Meckel's diverticulum 469
 simulating 1287
 pathogenesis of. 1348, 1411
 pathology of. 1540
 plea for early operation 1478
 present status of. 850
 real conservatism in. 1410
 recurring 1539
 review of. 1411
 shall we operate in? 1155, 1281
 simulated 1649
 sixty-one cases of. 215
 the term. 1478
 treatment. 932, 721
 treatment and rule for operation 214
 treatment, non-operative. 1347
 treatment, surgical. 1214
 with perforation. 849
 with unusual course. 721
 why some recover with out operation. 469
- Appendix, abscess posterior 339
 drainage in. 1155
 hernia of. 596
 involved in tubal pregnancy 902
 pin in. 338
 why fail to find. 272
- Appropriations to private institutions. 1478
- Archer, John, sketch 902
- Arecolin, note on. 721
- Arm, crushed by locomotive, saved. 1087
- Army, 469
 navy, medical 469
 corps, seventh, work of 1029
 medical service improvements 533
 ration 1539
 the 150
- Arteries, cerebral, trauma and. 1029
- Arteriosclerosis, retinal disturbances from. 595
- Arthritis, 595
 joint 595
 deformans, spinal, case. 1154
 deformans, terminating in aneurysm. 903
 rheumatoid, clinical features 1347
 rheumatoid, electrostatic currents in. 1478
 rheumatoid, in ear disease 1410
- Arthritis electric currents in 783
- Arthropathy, multiple, case. 150
- Artillery practice and the 903
- Ascariasis, Baur's, 850
 construction from. 28
- Asepsis and antiseptic in surgery 92
 in childhood. 338
 sloughing and. 595
 in emergency. 1601
 in minor operation. 595
 perfection of. 1029
- Asexualism, case. 469
- Asocializing, a crime of crime, etc. 1282
- Aspirin, experimental study 1347
- Association, Valley Med., notes from. 1347
 pickings at. 1281
 S. H. Med. 902
 Texas State Med. visit to 150
 Astasia-abasia, case. 150
- Asthenia, cardiac, in pneumonia 28

	PAGE.		PAGE.		PAGE.
Asthma (see colicula, eczema, ethmoid).		Blood	532	Cancer, pathology and therapy	402, 1215, 1281, 1282, 1348
medic manifestation	902	copular richness of	1347	recent literature	903
treatment	92, 468, 595	examination and clinic work	215	treatment by its own toxins	1649
Astigmatism charts, new	1410	examination of stained specimens	273	uterine, cause and prevention	595
extraction	1478	examination of nasal discharges	1478, 1479	uterine, importance of diagnosis of	850
lacrimation of	1411	examination of stained specimens	273	uterine, importance of diagnosis of	850
Asphyxia neonatorum, prognosis and treatment	1478	examination (see also, examination of nasal discharges, gynecology).		uterine, importance of diagnosis of	850
Ataxia, Friedrich's, case	1154	from clothing, to remove	465	uterine, importance of diagnosis of	850
paralysis and varying type	152	in septicaemia	849	uterine, importance of diagnosis of	850
Albino, pathology of	592	in sick, circulation of	28	uterine, importance of diagnosis of	850
Athletes and the heart	1214	morphology and preparation for operation	1347	uterine, importance of diagnosis of	850
Atresia (see uretra, vagina).		status and intrapelvic conditions	902	uterine, importance of diagnosis of	850
Atropia (see atropia, eye, ophthalmias).		vitality, integrity, purity	1029	uterine, importance of diagnosis of	850
Aural (see ear).		Blood-corporules, degeneration of, red	1649	uterine, importance of diagnosis of	850
Auricle, lacrimation of	468	Blood-vessels (see tuberculosis).		uterine, importance of diagnosis of	850
apophyllid perichondritis of	20	Bone (see joint disease, typhoid).		uterine, importance of diagnosis of	850
auricular	378	non-tuberculous process in	1030	uterine, importance of diagnosis of	850
aurist and facial nerve	1087	Bones, inflammatory diseases	214	uterine, importance of diagnosis of	850
autohypnosis, case of	1087	Boroforn, clinical cases	903	uterine, importance of diagnosis of	850
autohypnosis (see also, drugs, epilepsy, fever, intestine)	210	Boston clinic in mental diseases	903	uterine, importance of diagnosis of	850
fever and throat	150	cases	903	uterine, importance of diagnosis of	850
autopsies, medicolegal	1282	Bottle operation (see prostate).		uterine, importance of diagnosis of	850
Bacelli's method (see syphilis, tetanus).		Bowel, obstruction of	1214	uterine, importance of diagnosis of	850
Bacillus (see colic, diphtheria, yellow fever, typhoid).		Brace, proct	1214	uterine, importance of diagnosis of	850
aerogenes capsulatus isolated in life	468	surgery	1410	uterine, importance of diagnosis of	850
alcaloides	850	Brain (see abscess, fore brain, knife-blade, tumor).		uterine, importance of diagnosis of	850
alcaloides controversy	967	acute injuries of	656	uterine, importance of diagnosis of	850
influenza, conjunctivitis from	1601	accidents of business men	532	uterine, importance of diagnosis of	850
influenza, endocarditis due to	1478	adipose, nasal	92	uterine, importance of diagnosis of	850
new spore-producing	214	inflammation of	121	uterine, importance of diagnosis of	850
Bacillus (see colic, diphtheria, yellow fever, typhoid).		wood imbedded in	338	uterine, importance of diagnosis of	850
aerogenes capsulatus isolated in life	468	breast, cancer of	1281	uterine, importance of diagnosis of	850
alcaloides	850	carcinoma of	92	uterine, importance of diagnosis of	850
alcaloides controversy	967	clinical cases	907	uterine, importance of diagnosis of	850
influenza, conjunctivitis from	1601	hypertrophy of	1214	uterine, importance of diagnosis of	850
influenza, endocarditis due to	1478	hypertrophy of unilateral	1087	uterine, importance of diagnosis of	850
new spore-producing	214	breathing apparatus, impaction of	1410	uterine, importance of diagnosis of	850
Bacteriology and general practice	902	Bright's disease (see nephritis, pregnancy).		uterine, importance of diagnosis of	850
the professor of	1601	disease, morbid	215	uterine, importance of diagnosis of	850
Bacterium coli, infection of	1347	disease, etiology of	1539	uterine, importance of diagnosis of	850
Bact. Naehum treatment, features of	1478	disease, treatment	1155	uterine, importance of diagnosis of	850
Ballooning rectum, method for	339	Bronchial obstructions	532	uterine, importance of diagnosis of	850
Baltimore for post-graduate study	1214	Bronchitis, treatment, a symptom	469	uterine, importance of diagnosis of	850
Bandage, emergency hip	29	Bronchocele, symptoms and treatment	1281	uterine, importance of diagnosis of	850
Baselows disease, resection of sympathetic in	468	Bronchopneumonia (see bronchopneumonia, children).		uterine, importance of diagnosis of	850
Bassini's operation	1135	Bronchus, foreign body removed from	903	uterine, importance of diagnosis of	850
Bath, medicinal vapor	1088	Burrs, suppurating, treatment	1029	uterine, importance of diagnosis of	850
Baths, hydrothermal, in variola	1410, 1601	Burnt wounds, diagnosis of	656	uterine, importance of diagnosis of	850
Beef extracts (see extract).		Burnt and scalds	28	uterine, importance of diagnosis of	850
Beladonna in bronchopneumonia	28, 783	Cutaneous treatment	28	uterine, importance of diagnosis of	850
Berberi	532	Bursa, inflammation and excision	214	uterine, importance of diagnosis of	850
Beta-eucalin as a dietic in eye, nose, etc. work	1347, 1649	Buruli, retrocaecal	468	uterine, importance of diagnosis of	850
Bicycle as a therapeutic factor	1214	Calculus, renal, X-rays and	840	uterine, importance of diagnosis of	850
Bicycling and other diseases	849	biliary, intestinal obstruction	1601	uterine, importance of diagnosis of	850
Bile-duct, cancer of	849	removal of	1478	uterine, importance of diagnosis of	850
rupture of	1214	vesicle, in female	1410	uterine, importance of diagnosis of	850
new incision for	656	Calcutra vs. yellow fever	783	uterine, importance of diagnosis of	850
perforation	656	Calculus, renal, X-rays and	840	uterine, importance of diagnosis of	850
Bile in intestinal acholia	967	Calculus (see pyelitis).		uterine, importance of diagnosis of	850
Bilious diseases, what are they	272	biliary, intestinal obstruction	1601	uterine, importance of diagnosis of	850
Biological history of human	967	removal of	1478	uterine, importance of diagnosis of	850
research, influence of	1091	vesicle, in female	1410	uterine, importance of diagnosis of	850
Black arts in medicine	402	Calcutra vs. yellow fever	783	uterine, importance of diagnosis of	850
Blackwater fever	402	Calculus, renal, X-rays and	840	uterine, importance of diagnosis of	850
Bladder (see cystotomy, extrophy, resection).		Calculus (see pyelitis).		uterine, importance of diagnosis of	850
drainage	783	biliary, intestinal obstruction	1601	uterine, importance of diagnosis of	850
drainage bodies	902	removal of	1478	uterine, importance of diagnosis of	850
surgical cases	783	vesicle, in female	1410	uterine, importance of diagnosis of	850
trouble in old men	1539	Calcutra vs. yellow fever	783	uterine, importance of diagnosis of	850
Blastomycetic dermatitis	595, 902	Calculus, renal, X-rays and	840	uterine, importance of diagnosis of	850
Blind, how nature utilizes	903	Calculus (see pyelitis).		uterine, importance of diagnosis of	850
Blind, early	29	biliary, intestinal obstruction	1601	uterine, importance of diagnosis of	850
Blindness from methyl alcohol	967	removal of	1478	uterine, importance of diagnosis of	850
bysteric	783	vesicle, in female	1410	uterine, importance of diagnosis of	850
in Miss. school	800	Calcutra vs. yellow fever	783	uterine, importance of diagnosis of	850
monocular, case	533	Calculus, renal, X-rays and	840	uterine, importance of diagnosis of	850
quinin	902	Calculus (see pyelitis).		uterine, importance of diagnosis of	850
Blood, alkalinity	338	biliary, intestinal obstruction	1601	uterine, importance of diagnosis of	850
changes and altitude	338	removal of	1478	uterine, importance of diagnosis of	850
changes, importance of recognition	272	vesicle, in female	1410	uterine, importance of diagnosis of	850
changes, recognition of	215	Calcutra vs. yellow fever	783	uterine, importance of diagnosis of	850

Chloroform (see anesthesia, labor, etc.)

Chlorosis, our knowledge of. 1029

Chlorosis, sanguiferin in. 1087

Chlorotic condition, correction of. 1214

Cholecystitis, acute. 1347

Cholera, see suppurative, etc.

Cholera, clinical study of. 168, 1691

Cholera, etiology and treatment. 92

Cholera, of nasal origin. 1029

Cholera, treatment. 1347

Choreic movements. 1214

Chorion, vesicular degeneration of. 338, 532

Choroid ossification of. 595

Coloboma of, case. 1154

Colic, rupture of. 29

Colic, strabismic. 1030

Choroiditis tuberosa, or "singers' nodule". 469

"Christian Scientists," what to do with. 92

Chrysalis for worms. 92

Circumcision. 215, 1085

Cirrhosis, practice, evils. 596

Cirrhosis of liver. 1691

Cist of liver, of the. 215

Clavicle, congenital malformation. 468

Clavicles, congenital deficiency in both. 1030

Climate and renal diseases. 783

Clinic and kidney diseases. 1602

Clinic of the Superior region. 1410

Clinical cases, and their value as a rhinologygic. 1539

Cases seen at. 721

Clinical groups. 850, 1281

Clinical memoranda. 1085

Notes. 595, 1088

on diseases of children. 159

on laboratory research. 1087

Clinics, Politzer. 1087

Clinfbot, congenital. 783

post-operative treatment of. 1479

Cocain in measuring heterophoria. 1478

Code of ethics, shall it be abolished? 1154

ethics, N. Y. State Med. Soc. and. 29

Cod-liver oil, mixed fat emulsion, and test, of. 1214

Cold, quick method to cure a. 92

Colds

Cody's treatment of malignant growths. 1347

Colleges, use of Columbus. 1085

Collema, asthma as symptom of. 1155

Colitis, strabismic. 1601

Colloid degeneration of ovary. 1215

Colobopropionic nerves, without that of tract. 595

Colon bacillus, diplococoid

idiopathic dilatation of. 849

rupture of, cases. 468

treatment of viscera (Crawford). 1549

Color-blindness in. 308, 919

cases. 150

Color, testing. 967

Colorado, concerning. 967

needs of physicians of. 595

prevention of disease in. 272

Colorado

Comptometer, vaginal, in Pelvic disease. 902

Compendium in medicine. 1214

Commissioner of health, vassing, surgical. 1282

Conception, ethics and prevention of. 492, 1478

Concusson and compression of cord. 849

of spine, literature on. 532

Congress on abuse of alcohol. 532

Conjunctiva (see melanosis, coma, tumor)

Conjunctivitis, acute, treatment bacteriology of. 1087

catharrhal, bacteriology of. 338

folliculosa and trachoma. 595

infectious, therapeutics of. 1155

infections, therapeutics of. 1649

membranous, from bacilli. 783

in influenza. 1601

Constipation (see cascara, proctologist)

of. 566, 1087

and treatment. 1214

as a symptom. 1347

chronic, treatment. 533

of children, and non-medical treatment. 150

in infants and children. 850

treatment. 1087

Consumption (see cancer, phthisis, tuberculosis)

light and air in. 273

treatment of. 721

treatment of chronic. 1087

treatment, rational. 656

of tubercle, symptoms of. 657

Consumptive, altitude for. 272

poor, how deal with. 1214

Consumptives, state care of. 1155

state sanitarians for. 1029

Contagious (see diseases), infectious, use they synonymously. 783

Contusions, abdominal, diagnosis of. 29

of children. 505

Convulsions of children, therapeutic. 150

Convulsive. 721

Copper arsenite in meningitis. 1088

arsenite in typhoid. 1088

Cord, injury to from fracture of spine. 783

nutritional diseases of. 1539

spinal, all groups in. 721

spinal, treatment of injuries to. 465

Cornea, ulcer of and counter-surgery. 338

Corneal suppurative, cassaripe in. 1411

Coroner and undertaker. 721

Corpuency, cases. 150

Corzya, treatment. 1214

Cough, reflex. 402

heroin in. 1478

throat. 214

Coughing. 1649

Coughs, extrapulmonary, points in diagnosis of. 468

Country, day in, and general practitioner. 28

of the province of. 1411

doctor (see appendicitis, asepsis, e, c, l, a, m, p, i, a, practice, surgery)

Crania, (see meningitis)

Cranioctomy for idioy. 1539

Crawford, John, sketch of. 902

Creosote, method of administration. 1601

Criminal and their characteristics. 214

Juvenile. 595

Cryptorchidism. 1347

Psychology. 532

Croup, diphtheritic. 29

cases. 29

Cryptorchidism. 773

Cuba, yellow fever. 92

Cuneiform bones, dislocation of. 1411

of. 1411

Curative agents, action of. 850

Curette (see gynecology, placenta)

Currens (see electric), in medicine and in electrostatic, in arthritis. 1478

electrostatic, in locomotor ataxia, etc. 1540

Curvature, lateral, correction in. 850

Cutaneous (see diseases, electrolytic)

Cyanosis, chronic, without cause. 1540

Cyclophosphus, specimen of. 1030

Cystadenoma (see carcinoma)

Cyst of ovary, dermoid, in child. 903

of uterine. 1154

ovarian. 783

ovarian, with twisted pedicle. 1281, 1282, 1411

retroperitoneal. 1411

Cystitis, acute, treatment. 902

cause and treatment. 215

due to uric acid in urine. 1347

favosita. 150

in women, local treatment. 595

in women, points in. 1478

lithemic and treatment. 1539

resources in. 656

Cyatocele after menopause, treatment. 1281

Cystonitis, eversion of in operating. 150

Cystoscopy, instrument for. 338

in woman. 93

Cystostomy, suprapubic and perineal. 214

suprapubic, for calculus. 1478

vaginal, for irritable bladder. 849

Cysts, hydrated. 92

Cysts, dermoid tubal pregnancy and. 1215

kidney, and. 1478

of ovary, dermoid. 907

pancreatic, case. 1214

vaginal incision and drainage for. 402

Dactylitis, hereditary syphilitic. 721

Deaf-blindness. 1215

Deafness, catarrhal, bacteriology of. 215

catarrhal, prognosis. 468

of. 850

Death, right to natural. 1339

Defecations Illustrated. 339

post-paralytic. 1281

of spinal meninges. 1410

Delirium, post-febrile. 1155

study of. 273

Dementia, pseudo. 783

Demented, diagnosis. 721

and treatment. 721

senile, and marriage. 1410

Demology in medical practice. 850

Dental decay, significance of. 1154, 1539

surgeons in armies and navies. 902

Dentist and general practitioner. 3411

Dermatitis, blastomyetic. 849, 1281

following use of ethioform. 1478

herpetiformis, congenital, case. 3029

herpetiformis, psoriasis and. 1601

salicylic acid, case of. 1539

Dextrose and toxin production of diphtheria bacillus. 214

Diabete bronzes illustrated. 1649

Diabetes, acute. 533, 1281

of. 783

melittus, pathogenesis of. 1649

melittus, treatment. 1029

treatment. 468

Diagnosis, the art of. 907

blood examinations and. 272

and record. 1029

progress in medicine. 850

rational. 492

requisite to correct. 338

value of complete. 272

Diaphragm, paralysis of case. 1282

Diarrhea, acute dyspeptic, treatment. 1347

feeding in relation to. 656

in children. 532

infant feeding and. 1087

infantile. 783

in infants. 215

in infants, treatment. 595, 902

of infancy, treatment. 402

potassium permanganate in. 533

summer. 721

summer. 721

summer. 721

treatment, rational. 595

Dietetics in diseases affecting nutrition. 92

Diets, influence on elimination. 532

Digestion, starch, hydrochloric acid and. 92

Digestive case, examination of. 1155

practice, limitations of. 967

system, malignant disease. 339

tract, hand, surgery. 1281

Digitalis and circulatory disease. 1539

Digitalis and heart disease. 215, 1155

succedaneum to. 215, 595

Diphtheria (see antitoxin, calomel, dextrose, intratracheal, surgery, etc., p, b, y)

adenoids and. 469

and serum-therapy, in Cuba. 1601

antitoxin in. 1601

bacillus, production of. 849

complications of. 1601

diagnosis and therapeutics. 214

essential treatment. 151

etiology, diagnosis, prophylaxis. 903

from lower animals. 1649

in Pittsburg institutions. 967

prevention of spread of. 214

serum, use of. 1601

thirty-two cases of. 1410

treatment. 29

treatment other than antitoxin. 967

Diphtheric (see croup)

Diphtheroid sore throat. 1478

Diplococcus scarlatina, new only, not. 1155

Dipsomania, peculiar cases. 1347

Disease, odd types. 339

only, not. 273, 339

produced, how. 215

Diseases, catarrhal. 783

contagious, prevention of. 656

contagious, prevention of. 272

cutaneous, contagious. 532

most common. 92

skin, contagious. 1478

skin. 967

skin, staphylococous in. 722

Disinfection, formaldehyde. 1214

fungi, etc. 338

of rooms. 1649

throat and nose. 850

Dislocation (see coniform, hip, jaw, shoulder-joint)

Dinnetic, asparagus of. 902

Divergence, paralysis of, bearing. 338

X-ray correction of. 532

Divine healing (see "Christian Science")

Doctor a medical jurist. 28

and dentist, relation of. 468

and literature, the. 1087

as a teacher. 902

as a carrier of disease. 151

Doctors and the law. 214

Does it pay to be a teacher. 596

Derche, use and abuse of. 902

Dranaculus medicus. 1030

Dress, abdominal organs and. 902

Dressings, use of. 595

surgical, wood pulp of. 402

Drug cases, curability of. 29

habit following operations. 1214

habits an interference. 92

Drugs, antiointoxication aggravated by. 1154

Duct, salivary, tetanus. 1281

nasal, probing the. 339, 902

Duodenotomy (see carcinoma)

Dupuytren's contraction, history of. 1029

Dysentery, acute. 272

acute, treatment. 1029

cases of. 468

Dysmenorrhea, causes of. 1539

suggestions in. 1649

Dyspepsia, nervous. 1539

Dysphonia, relief by galvanic current. 722

Dyspnea in adult. 533

in child, fatal. 1087

Dystocia, cases of. 967

short umbilical cord as cause. 1214

following ventrofixation. 1478

Dystrophy muscularis progressiva, case. 1154

Ear (see exostis, eye, menin-					
gias, physician, sar-	PAGE.				
coma, throat)					
affections, cold in.....	1410				
anatomy and physiology					
of.....	302				
disease, suppurative com-					
plications in.....	468				
diseases of.....	740				
of cholesteatoma.....	1410				
inflammations, brain le-					
sions and.....	656, 967				
inflammations, cerebri					
treatment in.....	214				
middle, catarrh of after					
the gripe.....	338				
middle, inflammation of					
low treat.....	1030				
middle, physicians and.....	783				
new method of inflating.....	1213				
nose and throat diseases.....	1478				
of new born infant.....	1478				
relation of meningitis to.....	1601				
rheumatoid arthritis in					
disease of.....	1410				
semicircular canals.....	468				
trouble, adenoids and.....	657, 849				
Earaiche.....	1649				
gelatoglycerin bougies					
in.....	468, 902				
Ear-wax.....	783				
Echinococcus.....	1410				
disseminations on.....	1410				
Eclampsia (see also ery-					
thema, hospital, sal-					
ubation.....	150, 214, 1649				
cases.....	150, 595, 783				
etiology.....	1087, 1134				
etiology and diagnosis.....	402				
convulsions and.....	468				
induction by premature					
labor.....	656				
puerperal.....	1281				
puerperal, case treated.....	1281				
puerperal, in country					
practice.....	1214				
puerperal, puerperal					
treatment.....	402				
puerperal treatment.....	595, 902				
puerperal, with complica-					
tions.....	596				
treatment.....	656				
Ectopic (see gestation).....	1088				
Eczeema, asthma and.....	1539				
chronic, at Babies					
Wards.....	1029				
treatment.....	595, 1087				
treatment, notes on.....	532				
Edema (see also genitalia).....	1029				
angioneurotic.....	339				
angioneurotic, allied					
conditions.....	402				
angioneurotic, four cases					
533					
angioneurotic, involving					
larynx, etc.....	1029				
in hemiplegia.....	721				
of nasal mucous mem-					
brane.....	272				
pulmonary, of cardio-ne-					
urotic origin.....	469				
starvation.....	1282				
Educative system in.....	1087				
medical, a profitable.....	1087				
medical, in the South.....	1087				
methods of.....	151				
physical.....	151				
Educational requirements,					
standard of.....	1410				
Emissions, hemorrhagic, into					
arteries.....	582				
Elbow-joint dislocation, oper-					
ation for.....	1164				
fractures involving treat-					
ment.....	1478				
Electric current, death from					
current, electromagnet					
multiforma.....	339				
currents in cancer.....	1649				
currents in catarrh.....	1214				
of eye see ophthalmology,					
sterilization.....	1029				
outfit, new portable.....	1478				
Electricity (see also cardiac,					
gynecology, neoplasms)					
for general practitioners.....	1029				
death by.....	1649				
static effects of.....	533				
Electric, abdominal.....	783				
Electrolysis, cutaneous.....	92				
in urethral stricture.....	92				
Electromagnet (see electric,					
articles)					
Elephantiasis (see also gen-					
italia, penis),					
cases of.....	595, 1088				
Embolism of arteria ventralis					
fat case of.....	1029				
pulmonary, deaths from.....	1478				
Embryo at six weeks.....	402				
Embryology and two Cesari-					
an cases.....	1155				
Emergency cases, remarks on.....	1155				
Emmetropia, axial myopia					
and.....	656				
Empyema, of the diaphragm					
with.....	696				
of lids following frac-					
ture.....	1410				
Empuric in salt.....	1214				
Emulsion in Mo.....	150				
Empyema (see also gall-blad-					
der, sinuses)					
between heart and lung.....	1029				
from surgical standpoint.....	721				
of accessory cavities.....	596				
Encephalitis and cerebral ab-					
stractus in new born.....	1347				
purulent.....	721				
Endocarditis.....	1649				
cerebrospinal meningitis					
with.....	657				
due to bacillus influenzae.....	1478				
traumatic.....	1214				
Endocardial complications of					
mitral.....	1087				
Endometritis, acute purulent,					
case.....	1029				
Endometrial treatment.....	632, 967				
Endoscopic (see urethra)					
Enferocollitis, treatment.....	29				
Enferocollitis, indications for					
granite in post cham.....	1411				
Enuresis.....	469				
nocturna in female.....	468, 595				
Eosinophilia, trichinosis with					
defects and cure.....	1539				
Epidermization surgically					
considered.....	214				
Epididymitis, treatment.....	1282				
Epiglottitis (see pharynx)					
Epilepsy.....	595				
alcoholic drinks and.....	1281				
and auto-intoxication.....	783				
and hysteria, sensory dis-					
turbances in.....	1347				
and hysteria, hemicrania					
and.....	1410				
atropin in.....	273				
in					
cerebral arterio-sclerosis					
in its forensic aspect.....	1087				
hemiplegia, ataxia, etc.....	462				
manifestations.....	772				
newer pathology of.....	532, 783				
paraxanthin poisoning					
cases of.....	29				
peripheral causation.....	1347				
resection of sympathetic					
in.....	408, 1411, 1601				
traumatic, trephining for					
treatment.....	215				
Epileptics in colony treat-					
ment.....	92				
Epiphora of watery.....	469				
Epiphysal separation.....	783				
Epithelioma, cas.....	967				
of eyelid.....	773				
probable origin.....	721				
Epithelium, studies in.....	215				
Ergot (see obstetrics)					
Erection, of penis, studied					
by sklagmens.....	469				
Eruptions, dermatic.....	656				
facial, from intracranial					
disease.....	533				
figured.....	722				
in typhoid anomalous.....	159				
Erysipelatous, in child.....	339				
complicated.....	1602				
of face.....	1602				
of nose, complicated.....	1601				
treatment, case.....	159				
332					
Erythema induratum and ne-					
crotic granuloma.....	214				
multiforma, ecclampsia					
with.....	1023				
Erythema Indure des sero-					
leux.....	211				
Erythema, poisoning from.....	967				
Esophagismus of gouty origin					
721					
Esophagoscopy, two cases.....	967				
Esophagotomy for impacted					
teeth.....	783				
case of external.....	1601				
Esophagus, body in, of cus					
foreign body in.....	463				
stricture of, electrolysis					
in.....	1155				
stricture of unusual cases.....	1154				
Either (see anæsthesia, hos-					
pital)					
Ethics (see advertising, code,					
specialism)					
Ethmoid region and asthma.....	1155, 1281, 1347				
bone and nasal catarrh.....	1601				
sinus disease, symptoms.....	902				
Euphthalmium: a new mydri-					
atic.....	1155				
in ophthalmology.....	902				
mydriatic action and					
use.....	150				
Equinum, notes on.....	532				
European medicine of 1799.....	213				
Erythema, of face.....	1755				
Examinig, boards of.....	1155				
Exanthematous, of.....	1154				
Exanthematata (case of mastoid,					
otitis).....	721				
Exfoliation, case of.....	721				
Exostosis, removal from audi-					
tory canal.....	850				
of foot, irritation.....	539				
Experience, judgment and					
luck.....	721				
Exstrophy of bladder.....	783				
Extract, suprarenal, in Addi-					
son's disease.....	903				
best, worthlessness of.....	783				
Eye (see ph or a, gall-bladder,					
headache, instruments,					
meningitis, nasal, neu-					
ralgia, nervous system					
embolism, neoplasms,					
ophthalmia, touludin					
(see tannic acid),					
albuminuria and disease					
of.....	967				
and ear cases, report of.....	1411				
and involvement in					
meningitis.....	215				
atropin in and dangers.....	1087				
cases in railway practice.....	160				
defects and cure.....	1649				
defects and cure with					
glasses.....	1347				
dioptric, misapprehen-					
sion on.....	1478				
dioptric, of Dr. Jackson.....	1478				
diseases, diagnosis.....	1348				
disease, malaria a factor					
in.....	1602				
locating foreign bodies					

	PAGE		PAGE		PAGE
Founders from Maryland.....	20	Hemianopia, etiological question of.....	1478	Gynecology, electropneumatic current in.....	338
Fracture (see also burn, cord, etc.)		of orbit.....	1478	electricity in.....	636
of mandible, femur, fibula, navilla, nerve, phallos, ribs, splint)		of optic, structure of tube and muscles.....	1347	glioma therapy in.....	1282
Colles' approximation.....	339	extraocular muscles.....	1087	iodoform in.....	967
in new born.....	1282	Gland therapy (see extract, gynecology, obesity).....		iron peptone in.....	338
during delivery.....	1281	therapy, parotid, in.....	849	mistakes in.....	92
of base, with.....	532	of ovarian disease.....	402, 505	progress in.....	151
of base of skull.....	1214	of thyroid, cases of accessory.....	4088	recent advance in.....	1029
of cranial vault, unusual.....	533	of thyroid, in obesity.....	272	rectal irrigation in.....	535
of cranium, appendicitis.....	449	of thyroid, relation to.....	1214	report on.....	1087
of malleus and tympanicus.....	468	of thyroid, sarcoma of.....	150	surgical, technic of.....	1401
of skull, recovery.....	788	of thyroid, sarcoma of.....	150	unusual cases in.....	1347
united.....	782	Glanders, case.....	1087	Hallucinations of dying, sig-	
Fractures.....	532	Glands, enlarged, in children.....	1029	of Hallux valgus, cure of.....	215
compound, results of.....	783	Lymphatic, action of extracts of.....	214	Harris, Robert P., memoir of.....	216
of femur.....	402	mesenteric, tuberculosis of.....	92	Harvard University crew's	
of nail or wire suturing of.....	1601	Glasses, worn by young wearers.....	29	training.....	922
of extremities, osteoplastic surgery in.....	533	Glaucoma after neuralgia.....	783	treatment of.....	657
of forearm, radius and ulna.....	1601	excision of sympathetic.....		treatment of radical.....	903
of skull.....	721, 1088	of eye.....	92, 408, 1141, 1154, 1601	Hend and eye, effects of.....	830
treated by wiring.....	1155	excision of ganglion for.....	595	injuries, X-rays and.....	1478
treatment.....	1601	massage and eye strain.....	1214	pistol-shot wounds of.....	1154
Frauds, healing.....	783	with herpes zoster.....	1411	evidence on.....	1215
of frog, growing of.....	1478	sixty-three eyes affected with.....	1478	from intranasal disease.....	339
of man.....	1601	warnings of.....	783	mental element in treatment.....	533, 850
of science.....	1539	with herpes zoster.....	1411	new treatment for.....	722
Frost-bite, effects of.....	1539	Gleet (see potassium).....		ocular.....	1411
Fumigation at health resorts.....	215	Gloves in surgery.....	29, 502, 1164	of reflex origin.....	1478
Fungus foot and manna, case.....	967	Glycerin a sterilizer of.....	1281	powders, dangers of.....	903
Funnel-chest, case of.....	1282	Glycosuria and albuminuria.....	532	Headache, causes and treatment.....	1281
Gait, variations in.....	957	beginning in mental insufficiency.....	1154	due to eye strain.....	1215
Galenicals and guess-work.....	161	in diabetics, notes on.....	1601	from ocular origin.....	1154
Gall-bladder and bile-ducts, surgery of.....	1029	with cerebral hemorrhage.....	339	for.....	1539
empyema of.....	1029	Glycochymol, notes on.....	272	Health resorts, fumigation control at.....	215
eye changes after ligation of.....	1087	Golter, thyroid extract in.....	468	Heart (see also athletics, bicycling children, digitalis, obstetrics, and circulation, influenza etc.).....	1410
the.....	1348	treatment.....	1281	cases, three.....	1088
Gall-stone infections, observations on.....	902	exophthalmic, operation on symptoms of.....	1601	clinical relations.....	1134
obstruction, perforation surgery.....	532	exophthalmic, resection for.....	1411	congenital disease of.....	903
surgery.....	532	Gonococcus, two new stains.....	272	diagnosis, altitude and.....	215
treatment.....	721	unusual lodgment.....	1029	congenital disease of.....	903
four recent cases of.....	1478, 1601	Gonorrhea, etiological variation and cure.....	656	disease, altitude and.....	215
in common duct.....	1154	infantile.....	783	diseases in childhood.....	1030
medically and surgically treated.....	402	in female.....	28	disease, interesting case.....	1281
132 removed without operation.....	532	Janet treatment.....	1155	disease, observations on.....	303
pathology of.....	92	mercurial in.....	1478	disease, prognosis in.....	1539
report of cases.....	1347	method of using protargol in.....	214	diseases, valvular, rheumatism and.....	272
scop, new.....	1411	of external genitalia.....	92	displacement in lateral luxation.....	903
surgery, present position of.....	1478	prostatitis in.....	150	failure, shock or.....	1347
surgical treatment.....	1029	treatment, clinical reports.....	1088	fatty.....	272
Galvani, current (see dysphonia, etc.).....	1478	Gonorrheal patients, advice to.....	215, 1478	foreign.....	656
Ganglia, cervical, surgery of.....	92	to.....	215, 1478	functional diseases of.....	272, 1155
Gangrene of testicles.....	1478	Gout and calculi, causes.....	150	lesions, case of.....	1601
Gastralgia, diagnosis and treatment.....	505	and lithemia, thermal.....	468	location of borders.....	92
Gastric (see paraplegia) and intestinal diseases, treatment.....	468	and uric acid diathesis.....	468	lungs and pleura, diseases of.....	332
diseases in children.....	1029	newer teaching.....	272	rupture of, cases.....	1214
Gastritis, chronic asthenic.....	595, 1135, 1281	study of the pathogen.....	468	tonsils.....	151
chronic asthenic, prognosis and treatment.....	902	Grain of truth, etc.....	1601	Heat, dry, in therapeutics (see also electric (fever).....	155, 1478, 1539
chronic asthenic, treatment of.....	1410	Granuloma, necrotic, erythematous and.....	214	Hephephrenic case.....	1087
Gastroenteritis, acute.....	1029	Gravel, cases treated.....	1479	Hematokrit and technic, new.....	1347
Gastro-entostomy (see in saraceni).....	1601	Griels in infant feeding.....	202	Hematology, introduction to.....	1601
case of successful.....	1601	Guaiacal carbonate in respiratory diseases.....	902	Hematomy, ovarian, appendicitis with.....	783
of gastric neoplasm.....	401	Guanitama, action and peptics of.....	850	peripheral.....	1087
Gastro-intestinal affection, children.....	402	Gummatia (see pelvis).....		simulating aneurysm.....	967
disorders, tannopin in.....	656	Gunsath perforation of intestines.....	402	Hematocrit, case of.....	169
therapy.....	1155	of femoral artery and vein.....	1411	lowing trial.....	1347
Gastrostomy.....	903	wound of abdomen.....	1214	Hematopsiphix from ocular luxation.....	1154
Gastrotomy (see peritonitis).....		of thigh.....	1029	Hematuria, vaginal.....	783, 1601
Gelatin in hemostasis.....	1478	wounds in civil practice.....	468	Hemicrania and epilepsy.....	1410
Genital edema and elephantiasis of.....	1214	wounds, healed.....	1029, 1347, 1539	Hemiplegia, postapoplectic.....	1649
Genital, congenital limitations.....		Gynecic disease, nervous disorders and.....	656	Hemiplegia (see also child, edema).....	
Gentle, medicinal limitations.....	29	Gynecology, etiological question of.....	1478	acute infantile.....	1281
of.....	1348	of.....		infantile, relief of constipation.....	1088
of.....	783	of.....		traumatic, case of.....	1539
of.....	1348	of.....		two cases.....	532
of.....	783	of.....		Hemorrhage, alveolar, etiology.....	1029
of.....	409, 850, 1410	of.....		after treatment.....	150
of.....	1214, 1282	of.....		after anastomosis.....	1411
of.....	1088	of.....		and menopause.....	1478
		of.....		cerebral, cyanosis ending in.....	1540
		of.....		cerebral, following labor.....	1539
		of.....		cerebral, glycosuria with.....	339
		of.....		cerebral, type of.....	1411
		of.....		cerebral, whooping-cough with.....	1214
		of.....		cerebral, eyes lost from.....	1478
		of.....		during labor.....	532
		of.....		extradural spinal.....	595
		of.....		following adenoid operations.....	272
		of.....		from gastritis, anastomosis.....	1601
		of.....		from septum, three cases.....	902
		of.....		from ulcers, surgery of.....	1029
		of.....		intestinal.....	1347
		of.....		nasal.....	1347
		of.....		of celiotomy, post-operative.....	1478
		of.....		of newborn.....	783
		of.....		post-mortem, treatment.....	1348
		of.....		pulmonary, following excision.....	532
		of.....		ploratory puncture.....	902
		of.....		after.....	1601
		of.....		uterine, accidental.....	402
		of.....		for.....	1087
		of.....		uterine, notes on.....	1029
		of.....		uterine, no neoplasms nor pregnancy.....	988
		of.....		Hemorrhages from pharynx, necrosis with.....	402
		of.....		Hemorrhoids, etiology and their treatment.....	1539
		of.....		complications, causes.....	1281
		of.....		internal, surgery of.....	1088
		of.....		modern surgery of.....	1601
		of.....		new operation.....	272
		of.....		old treatment of.....	1539
		of.....		operations for.....	595
		of.....		post-operative treatment.....	1087
		of.....		surgical treatment of.....	1347
		of.....		rest operation for.....	1539
		of.....		treatment of.....	1539
		of.....		with pruritus ani.....	676
		of.....		Hemostasis in intrapelvic surgery.....	258
		of.....		gelatin in.....	1479
		of.....		in tubo-ovarian pedicle.....	1478
		of.....		Hepatic torpor, cases.....	150
		of.....		Hepatitis complicated with gall-stones.....	902
		of.....		Heredity causative of line.....	281
		of.....		psychic.....	1411
		of.....		Hernia.....	92
		of.....		adipose tissue a factor in.....	1601
		of.....		after abdominal operations.....	214, 1347
		of.....		after appendicitis operations.....	402
		of.....		and operative treatment.....	1029
		of.....		congenital diaphragmatic case.....	532
		of.....		congenital, radical treatment.....	532
		of.....		difficulties in diagnosis.....	1281
		of.....		diaphragmatic of 14 years standing.....	29
		of.....		double inguinal, unique case.....	1601
		of.....		Ferguson's operation in.....	595
		of.....		hemorrhagic, following operation for.....	1601
		of.....		imbrication operations for.....	1281
		of.....		in aged, treatment of.....	1410
		of.....		inguinal, anatomy and cure.....	1029
		of.....		inguinal, and femoral anatomy of.....	1281
		of.....		inguinal, new method in.....	29
		of.....		inguinal, observations on.....	1029
		of.....		inguinal, operation of.....	783
		of.....		inguinal, surgery of.....	1601
		of.....		internal, strangulated.....	1029
		of.....		Kocher's operation for.....	1478
		of.....		new operation for.....	402
		of.....			

PAGE.	MAGR.	PAGE.	PAGE.
Hernia of pregnant uterus, 1155	Hydrogen dioxide in surgery, 272	Infants (see children, diarrhoea, gruels), 1539	Intestinal obstruction from ascariides, 28
of vermiform appendix, 596	peroxid in surgery, 783	and children, indigestion, 1539	obstruction from biliary calculi, 1601
orchidoplexy complicated by, 532	peroxid, notes on, 1539	artificial feeding of, 92, 656	obstruction in newborn, 273
post-operative, 214	Hydrenephros (see kidney), 151	artificial feeding in, 656	perforation, 469
radical cure for, 402, 721	Hydrophobia, 533	care and feeding of, 468	perforations from within, 272
strangulated, 850	dothias in, 1281	feeding, weight, 402	perforations, experiences in, 1214
strangulated, method of reduction of, 1539	early cured, 273	increase of, 1029	rupture, point of, 1601
strangulated, through abdominal wall, 1347	Hydrophobia, 533	Infection by diplococcus in (see influenza), 238	therapeutics, 1601
umbilical, congenital, 1215	Hydrophobia, 533	malarial, aspects, treatment, 468	Incision (see gunshot, hospital)
umbilical, operating for, 1087	Hydrophobia, 533	puerperal, 1649	bullet wounds of, 1030
umbilical, with, 1411	Hydrotherapy for insomnia, 272	puerperal, phases of, 1649	discharges of, not due to infection, 1030
Hernia, operation technic for, 1539	Hygiene, alimentary, 1214	sources of, 532	excision of, 1087
Hernia, 1347	of bedroom and bedclothes, 92, 1214	thoughts on, 783	Intestines, carcinoma of, 1214
efficacy of, 1155	Hymen, imperforate, 1214	Infections, enteral, chronic, 1214	multiple, pistol-shot wounds of, 151
in cough, 1155	Hyoscin, 214	Infectious diseases, insects and spread of, 850	rupture of, 657
Herpes zoster, supra-orbital, 1478	Hyperaerthria and derangements of stomach, 28	Inflammation of bursa and hyaline cartilage, 214	inoculation from toxalbumins, etc., 967
zoster ophthalmicus, with glaucoma, 1411	Hyperemia, toxic, and kidney inflammation, 1478	Inflammation of bursa and hyaline cartilage, 214	Intracranial disease, symptomatology, 468
Heterophoria, bearing of paralytic on, 1378	Hypermetropia, 1029	of pelvis, prevention and treatment, 92	Intranasal (see splints), 272
cecilia in measuring, 1478	Hypertrophy, 1029	pelvic, prevention and treatment, 92	Operations, complications, 850
strabismus and, 67 cases, 404	Hypostosis cranii, 595	Infuenza (see lagrippe, cholecystitis, myelitis, otitis, etc.), 1281	Intrapelvic surgery, hemostasis in, 273
Hiccup, 783	Hysterectomy (see gestation, menstruation, myomectomy, uterus), 1411	clinical side of, 1029	Intubation and diphtheria, 250
during puerperium, 1282	abdominal, at 79, 1602	effects on eyes, 469	epidemic in diphtheria, 150
obstinate, 1467	sigmoid, technic of, 1478	Epidemic in Philadelphia, 533	and antitoxin in diphtheria, 1154
Hip, congenital dislocation of, 911	division of, decision, 1155	on heart, effects of, 1410	epidemic in diphtheria, 214
disease, abscess, 402, 967	week after, 338	for malignant disease, 338	laryngeal stenosis following, 1479
disease, cause, diagnosis, treatment, 272	Intestinal, obstruction after, 1601	Intestinal, obstruction that first, 338	technic of, 1154
disease, diagnosis, 150	total, choice of method in, 1478	total, choice of method in, 1478	intubations, two hundred and seventy-six, 1649
disease, management of deformity of, 903	Intestines, 1649	Hysterectomy by vaginal section, result, 338	Intussusception, 783, 850
Disease, salient points, 402	Hysteria (see also epilepsy), 272	and nervous disease, 1088, 1474	Inversio uteri complicating placenta previa, 92, 272
excision of, skiagraph, 1030	and neurasthenia, diag., 850	and the ear, 1410	Iodoform, do we need?, 849
Hip-joint disease, mechanical treatment, 272	case from fright, 29	and nervous disease, 1088, 1474	notes on, 1539
disease, diagnosis and pathology, 272	restations and anal manipulations, 1410	and neurasthenia, diag., 850	trideceton for cataract extraction, 1539
shortening in tubercle, 845	recovery after prayer, 229	and the ear, 1410	Iris, foreign body in, 450
traumatic effusions of, 92	Hysterical phenomena, 721	case from fright, 29	ganglion cells in, 1087
tuberculosis of, 1601	Ichthyol internally, 595	restations and anal manipulations, 1410	cataract extraction, 469
History and treatment of three cases, 1088	In cornual ulcers, 1478	restations and anal manipulations, 1410	Iritis, tuberculous, 595
of medicine, ancient, 850	Idiocy, craniotomy for, 1539	restations and anal manipulations, 1410	in syphilis and rheumatism, 1411
Hodgkin's disease, 533, 1281	Ileocolitis and dysentery, 395	restations and anal manipulations, 1410	Iron albuminate, 1281
disease showing lung metastases, 1478	Ileus, case of, 1087	restations and anal manipulations, 1410	Jaundice, infectious, 1087
Holocin, use of, 967	Iliac vessels, fibrosarcoma of, removal, 1281	restations and anal manipulations, 1410	Law (see osteomyelitis, sarcoma), 1087
Homeopathy, why I am not a, 656	Illegal practitioners, medical profession and, 721	restations and anal manipulations, 1410	dilatation of reducing, 1029
Hospital at Indianapolis, 1539	practitioners, what to do with, 1601	restations and anal manipulations, 1410	Jenner, Edw., tribute to, 902
Boaton City, ether in, 967	Immunity, acceptibility and, 402	restations and anal manipulations, 1410	Job, to make clean with a, 532
Boston Lyng-in, eclampsia in, 1282	and non-immunizing serums, 92	restations and anal manipulations, 1410	Joint disease, bone and, 1155
Charity, 1877-1894, 496	and use of serums, 92	restations and anal manipulations, 1410	and bone fixation, 657
clearing-house, 468	Impotence, 1478	restations and anal manipulations, 1410	disease and traumatic neurosis, diagnosis, 1540
for chronic disease, 1478	observations on, 902	restations and anal manipulations, 1410	disease, tuberculous, early diagnosis of, 1649
for consumption, 849	Incision, abdominal, cloae of, 903	restations and anal manipulations, 1410	Jurors, psychologic study of, 1088
for tuberculosis, first in U. S., 1155	division a week after, 338	restations and anal manipulations, 1410	Keratomy, cause of, 1411
Howard, gynecology at, 1347	exploratory, cases illus., 532	restations and anal manipulations, 1410	Keratosis, suppurative, 1087
Johns Hopkins, constricted pelvis in, 92	trating, 532	restations and anal manipulations, 1410	orthiform in, 1411
London Temperance, 532	Incompetability, law of, 1411	restations and anal manipulations, 1410	Keratococcus, 1411
work of, 967	Indecent, value of determination of, 1087	restations and anal manipulations, 1410	Kidney, congenital cystic, 1029
Mass. Gen. gastric neoplasm, 1088	In digestive intoxication, 151	restations and anal manipulations, 1410	cysts, three rare, 1478
Mesa, Gen. nephralgia, 468	Indigestion, diarrhoea of, treatment, 402	restations and anal manipulations, 1410	diagnostic signs, 98
Mass. General typhoid at new military, 850	Indigo group and internal medicine, 150	restations and anal manipulations, 1410	diseases amenable to surgery, 1347
organization, 466	Inebriate, legislation for, the pauper, status, care, etc., 532	restations and anal manipulations, 1410	diseases of, surgery, treatment, 1601
today's surgery in, 1155	Inebriety, 532	restations and anal manipulations, 1410	device for washing pelvis of, 938
Roosevelt, typhoid at, 1282	maternal, effect on offspring, 1281	restations and anal manipulations, 1410	phrosis and hydrophrosis, 150
St. Bartholomew's, visit to, 532	nature and treatment of, 272	restations and anal manipulations, 1410	floating in women, 1214
St. Thomas', rupture of intestine in, 468	peric, observations on, 478	restations and anal manipulations, 1410	horshoe, 339
U. S. A., blood examinations in, 1411	treatment, 1347	restations and anal manipulations, 1410	horshoe, 339
University, celiotomy at, 1087	Infancy, convulsions in, 1214	restations and anal manipulations, 1410	ter ib., 1030
West Side, training school, 1281	Infant, acetanilid poisoning in, 29	restations and anal manipulations, 1410	hydronephrotic, rupture, 1348
Hospital, European, 1281	feeding, 726, 902	restations and anal manipulations, 1410	hydronephrotic, 1282
ing for knife in, 215	feeding, home modification of milk for, 1215	restations and anal manipulations, 1410	movable, 783, 1281, 1539
Hot air in lupus vulgaris, 1155	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
Hot Springs, trip, 1281	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
House, home operation, 1281	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
Hunter, John, anatomist and surgeon, 1563	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
Hydratim, deperate, 1347	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
Hydratim, uterine, 1411	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
Hydratidiform mole, 1087	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
Hydrantioia, 532	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
Hydratic effects in disease, 721	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
Hydroceles, 28	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
Hydrocele, operation, 1601	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
Hydrocephalus with spinal paralysis, 1030	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, hydronephrosis with, 1281
	Infant, mortality causes and prevention of, 850	restations and anal manipulations, 1410	movable, 783, 1281, 1539
	Infant, mortality causes and prevention of, 850		

- Kidney, inflammation of, toxic hyperemia and 1478
 surgical dissection of 1088
 "Kissing-bug" wound, treatment 245
 Kuse, dislocation, congenital 819
 Knee-join, fracture, callage in 29
 Inflammation of 967
 Knife-blade in brain, removal 378
 Knowledge in practice 596
 Korner's plastic operations, modification of 850
 Kraus's tubercular, forcible straightening of 850
- Labor (see eclampsia, face positions, hemorrhage)
 abnormal conditions in 532
 albuminuria and induction of 903
 anti-streptococcal serum in sepsis in 29
 breech, management of 1214
 cephalic version after beginning 469
 chloroform in 214, 903
 complicated with neuritis 1155
 hour-glass constriction in 1347
 in abnormal pelvis 1347
 induction of premature 151
 infection during and after management of 523
 metectomy 1479
 obstruction to 967
 operative treatment of complicated 402, 656
 paralysis after 656
 separation of symphysis during 1479
 slow first stages of 28
 treatment in abnormal pelvis 28
 unusual case of 538
 with convulsions in 1281
 with malproposition 1281
- Laboratory of hygiene, Vt. 965
 of pathology, Denver 1195
 of physiology, Philadelphia 550
 Lacerations, obstetric 595
 of cervix, significance 1087
- La grippe (see ear, influenza, influenza, pneumonia)
 150, 272, 849, 1281
 manifestations, etc. 967, 1067
 Laminitis in animals 533
 injuries 533
 Language for scientific men 657
 Laryngotomy, artificial anus 92
 saturation method in 1602
 Laryngeal (see intubation)
 Laryngectomy for epithelioma 273
 technique of 214
 Laryngitis 656
 treatment 656
 membranous 215
 tubercular 850
- Laryngologic literature, remarks on 29
 Laryngology, address on 523
 general 657
 X-ray work in 1215
- Larynx, innervation of in breathing 328
 hysterical case of 1478
 protargol in disease of 432
 stenosis of, by intubation 1509
 Law and medicine 1643
 Lawyer and doctor 1643
 Laxative by mouth, mechanical 339
 Lead, acute minkera for appendicitis 1029
 Leaves from physician's diary 215, 1601
 Lecture 328
 Cavendish 93, 151
 clinical 532
 Legal relations of physician to patient 595
 results of medical legislation 656
 Legislation, notes in medicine 1347
 medical 150
 method 214
 Lens and cataract formation 1478
 foreign body in, removal of 1601
 Lepidre of pain 1029
 Leprosy of Calmette's anti-venene in 1155
 curable in 721
 in St. Mary's hospital 214
 nail deformity in 656
 pre-Columbian 721
 scenery simulating 1347
 surely contagious 1645
- Leucocythemia, case of 1539
 Leucoderma, syphilitic, simulating paralysis 1347
 Leporrhine and treatment 92
 pathology and treatment 402
 treatment 721
 Leukotaxia, splenic myelogenous 150
 Levator ani 378
 Libraries, medical 902
 Lichen ruber acuminatus, ruber 215
 ruber (see plaids) 1030
 Lids (see eyelids)
 Life expectancy, rectal diseases and, insurance 532
 insurance (see insurance)
 Ligaments, round, result of shortening 38
 round, operation for shortening 1478
 Ligature, in intraperitoneal slipping of 408
 Ligatures and sutures, preparation and preference 1478
 Light sense in retinal diseases, etc. 595
 1539
 Lip, lower, restoration of 656
 Lipoma of neck, operation 215
 Liston, Robert 1282
 Literature, advertising, laryngologic, rhinologic, tuberculous 1539
 notes on recent 1539
 Lithemic habit, the 850
 Lithiasis 1601
 Lithotomy, suprapubic, in child 783
 Lithopedion, specimen and report 1601
 Liver (see cirrhosis, neoplasms and disease) 1281
 floating 783
 resection of 783
 resection for tumors, cases of 1539
 rupture of, case 29
 steatosis of 1088
 Localities, center studies in 1411
 Locomotive, arm crushed by, saved 1030, 1087
 Locomotor ataxia, tabes dorsalis 1411
 ataxia, beginning in cord 1411
 ataxia, diagnosis 272
 ataxia, diagnosis 1029, 1281
 ataxia, pain sense in 468
 ataxia, pathology and treatment 1214
 Longevity, relation of build to 272
 lunacy, judicial errors in 1047
 Lung, carcinoma of 902
 diseases, local treatment 402
 fever (see pneumonia), general 1029
 gymnastics of 657
 pathology of foreign body in 402
 reflexes, study of 1411
 tack in 1029
 Lupus erythematosus, case of 272
 vulgaris 150
 vulgaris, hot air in 150
 Lymphadenitis, acute 903
 Lymphatics, surgical importance 1281
- Macroactylism, congenital 1539
 Malaria and mosquito 721, 1347
 comatose 462
 complicating puerperium 1029
 crescent, in boy of 469
 estivoautumnal with crescents 469
 gnaiss in 595
 in children, atypical 783, 903
 inoculation theory 468
 manifestations of 783
 meningitis vs. 783
 parasite and pathology of 28
 pen pictures of 1281
 perils of 849
 subnormal temperature in 1347
 transmission of 1347
 Texas 151
 treatment of 783
 variations in manifestations of 215
- Malarial (see hemataria, hemoglobinuria, infection, nephritis, toxemia, typhoid)
 fever 29
 fever at Camp Mount 1601
 fever, etiology 469
 fever in infant 272
 fever in California valleys 468
 Malignant (see cancer, carcinoma, Coley's carcinoma, digestive, hysterectomy, neoplasms, sarcoma, uterus, etc.)
 disease, three cases 1087
 Malnutrition and its treatment 1601
 Maist, proteolytic value of 29
 Male fever, case of 729
 Mania due to pelvic trouble 1214
 acute delirious 1601
 acute delirious, management of 1601
 Mania, notes on 1411
 Marriage, senile dementia 1410
 Masochism, sadism and fetichism 850
 Massage (see gnaemum) 1410
 Masses for study 1410
 Massotherapeutics 272, 595, 550
 Mastitis, intestinal, cured by 1478
 Mastoid (see otitis)
 affections, cold in 1410
 complications of exanthema 468
 process, percussion of 657
 wounds, carbolic acid in 1601
 Mastoiditis 556, 1154, 1281
 cases of 272
 diagnosis and treatment 1555
 Maternal medicine and therapeutics, defense of 1410
 medicine, Maine's 1281
 matter for study 1410
 Maternal impressions 338, 1281
 Matrimony 721
 Maxilla, fracture inferior 333
 Mastiff (see ossesons)
 Measles, atypical case of 539
 Meatus, sclerotic narrowing 214
 Medical see advertising, literature)
 and Chir. Faculty's case and report in Md. 479, 1539
 jurisprudence 215
 matters important 1410
 profession, place and work of 29
 science, future of 402
 and surgery, 40 years in 338
 and surgery, progress of 1087
 and the public 595
 and professions 92, 215
 book arts in 29
 events in history of 967
 expansion of 214
 progress of 902
 in Göttingen 1411
 internal, plea for 1411
 landmarks in 272
 part of action of 150
 modern, landmarks in 721
 of present century 29, 1214
 of the future 1601
 part of state in 1411
 practice of, how retain progress of 28
 study and practice of 721
 standard for 721
 Medicines, law of action of 1601
 study 538
 diagnosis in its inception 338
 due to pelvic trouble 1214
 Melanocarcinoma of conjunctiva 92
 Melanosis, general 92
 Membranous typhoid 272
 Memorial of a gynecologist 967
 Meniere's disease, note on 468
 Meningitis (see copper arsenite, typhoid, meningitis)
 of tassium iodid and permanganat, pneumonia, typhoid 656
 cerebral, extraordinary temperature in 657
 cerebrospinal 721, 1029, 1155, 1347
 cerebrospinal, case 214, 1088
 cerebrospinal, case a. a. deaths, autopsy 468
- Meningitis, cerebrospinal, all changes in 151
 cerebrospinal, copper arsenite 339
 cerebrospinal, diagnosis of primary 29
 cerebrospinal, epidemic 214, 469, 656, 721, 850, 1281
 cerebrospinal, eye and ear involvement 1411
 cerebrospinal, in Colorado 215
 cerebrospinal, intrauterine epidemic 657
 cerebrospinal, lumbar puncture 272, 538
 cerebrospinal, remarks on cerebrospinal, report of case 272
 cerebral, tetragenous micrococcus a cause 1154
 Kerbig's sign 1601
 serous recognition of 1550
 Menopause (see cystocele, hemorrhage)
 diagnosis of 1154
 disorders of 338
 symptoms and treatment of 1478
 uterine prolapse 1281
 Menstruation after hysterectomy 1347
 and pregnancy 402
 in young women 402
 concealed 533
 infantile, case 338
 irregular, due to anemic conditions 1088
 vicarious 1347
 Mental diseases, prophylaxis, value of 1347
 diseases, Boston clinic in 1030
 diagnosis 903
 (see insanity)
 Mercurio (see posture)
 Metals, colloidal, therapeutic 1155
 Metastases 595
 Metastases, death from 521
 Micrococci, cold 1479
 Micrococcus intertriginis Rosbach 1602
 Microscopy, recent work in 92
 Midway, case of 469
 forceps, use of 469
 postures in 28
 Migraine, paralytic, poisoning 29
 not cause of 1539
 treatment of 1539
 Military (see army, sanitation)
 Milk, breast, management of 1029
 and meat supply, dangers of 1478
 as cause of infection 1339
 cow's and woman's, difference 532
 disease, home modification of 92
 gruels as diluents of 1601
 home modification of 1215
 in 92
 for modification 92
 poisoning, cholera infantum or 1410
 present in 1281
 separation of bacteria from 532
 the woman 1645
 Milkman's urticaria 1215
 Mind in disease 903
 simulated disease of 721
 Mines, injuries in 1601
 Missionary work, medical 1347
 Nitral (see glycosuria, stenosis)
 Monstrosities and malformations, importance 272
 four in family 82
 Morbid conditions, treatment of 1341
 Morbid conditions, treatment of 272
 Morbus coarctatus 783
 Morphia poisoning, potassium permanganat in 902
 Morphin eating, obscure pain 151
 poisoning 1539
 transmissibility of 1411
 Morphinism among physicians 1411
 chronic 783
 Morphemania, criminal 1281
 Mosquito (see malaria)
 destruction of 1155
 mother and child 595
 Mucocoele of maxillary sinuses 596
 Mucus (see otitis)
 cerebral complications in 849
 with orbitis and nephritis 849

	PAGE.		PAGE.		PAGE.
Murmur, diastolic, unusual	533	Nervous system, relation of	92	Ophthalmic (see pediatrics,	1411
Plüsch's remarks on	1539	eye and	92	Philippines, surgery)	532
subclavian, eliciting	1029	system, the	532	clinical contributions	532
Murmurs, cardiac and normal	1215	Netherlands, trip to	1155	contributions	1348
of mitral valve	1215	Neuritis, acute, of day-	532	macrodon	122, 783
cardiovascular, diag-	595	choses	532	teaching, aids in	1087
nosis	595	following la grippe	1030	Ophthalmologic surgery in	338
functional, cardiac	1214	in eye, after la grippe	1030	country	338
Murphy's relation, of	602	Neurasthenia	1087	Ophthalmologist, mydriac-	532
Muscle affections, aspects	29	and general practitioner	721	silyver)	532
Muscles, o. c. u. l. a. r., derange-	468	diagnosis and treatment	721	and general medicine	532
excess of	468	ocular	532	electric heat in	92
ocular, disturbances of	92, 338	remarks on	92	in 19th century	151
ocular, movements of	338	symptoms and treatment	1029	silver salts in	402
Muscular anomalies	1281	Neuritis, is it a vibratory	1281	Ophthalmology, bracket for	214
Myasthenia gastrica	1087	motion?	1281	Reid	214
Mydriatics (see atropin, hel-	532	Neuritis, alcoholic multiple	1029	Ophthalmoplegia, unilateral,	1087
ladoma, ophthalmic,	532	chronic spinal	1029	case	1087
ophthalmoscopic)	532	multiple	1029	unilateral total	656
Myelitis following influenza	1087	Neurology, lessons in	215, 902	Ophthalmoscopic examina-	902
Myocardium, fibrosis, etc., of	849	Neuroma of median nerve	967	tions, mydriatics in	902
Myometra, uterine, stump in	29	Neurop. motor, in diagnosis	967	Opticians, family physicians	532
hysterectomy for	29	Neurosis (see hemorrhages,	532	and	532
Myomectomy (see instru-	656	joint, pelvic, oophorec-	532	Orbit (see periorbitis)	530
ments, list)	656	and psychoses, toxic ori-	903	fracture of, emphysema	111
hysterectomy or	656	gin of	903	of lids in	111
in pregnancy	967	relief, from nasal ob-	902	Orchitis (see nutcracker,	1601
Myopia, correction of refrac-	1215	struction	902	typhoid complicating	1649
tion in	1215	Neurophysiology, traumatic	721	thyroid and	1649
excessive, causes and	1215	Neurosis, bilateral and linear	1347	Organotherapy	532
treatment	1215	Newborn, care of	1029	glandular	447
operative treatment	1215	remedies	469, 1029, 1087	Orthopedics for general prac-	532
Myxedema, case of	967, 1481	Newspaper medicine	1214	titioner	272
Myxochondroidhoma of	902	Night terror	1154	Ossaceous osteoma	251
parotid	902	Nitrites, therapy of	1347	Ossioceleotomy, abscess drained	469
Myxosarcoma (see uterus)	902	Nomenclature	1282	after	469
Nail (see leprosy)	532	Nose (see brain disease,	532	Osteo-arthritis of spine	272
Narcosis, see anesthesia, strab-	532	sarcoma, throat)	721	Osteomyelitis, acute suppur-	903
ismus, etc.)	532	adenocarcinoma of	721	tive	903
Nasal (see also duct, edema,	532	nose-bleed, treatment	902	in infant	1601
respiration, septum, sur-	92	Nosophen and antinosin	338, 1029	of femur, case of	1478
gery)	92	Nostropin	215	of upper jaw	850
deformities, correction	92	Nutrient, climatic, of	402	tubercular	402
diseases and affections	532	Nurse's duty	402	Osteopathy (see "Christian	532
of eyes	532	Nursing profession, duties	338	and dangers	338
obstructions, diagnosis	338	Obesity, thyroid gland in	272	Ostitis (see sinus thrombosis),	92
of passages, edematous oc-	338	Observations, random	272	exanthemata	92
clusion of	338	Obstetric case	783	media, complicating in-	1087
Nasopharyngeal decrease, eti-	596	Obstetric case, hand as	1282	media, bearing in, atmos-	1088
ology	596	practice	1410	pheric changes and	1088
Nasopharynx, tumor of	1602	teaching	967	media, diagnosis and	1478
Navel, sloughing and aspsis	338	Obstetrician, gynecolo-	595	media, in pneumonia of	402
in childbed	338	gist relations of	595	children	402
Nature and her methods	656	Obstetrics (see anesthetics,	532	medical mastoid, compli-	1088
powers of and medical	656	finger-coil)	532	cations	1088
practice	656	Oculist vs. optician	721	media, intestinal distur-	468
Negroes, tuberculosis among	214	Ocular muscles	849	ances from	468
Neoplasms, malignant, elec-	214	Oculic (see strabismus)	532	media, neonatal	550
treatment	214	Oculic, posterior rotation of	849	media, operation in	595
malignant, of eye	1154	therapeutics)	849	of exanthemata	92
of liver	783	Oculic, prothesis	1087	Otolaryngology	1087
pregnancy, interfered	596	Oculist vs. optician	721	to date	1087
with by	596	Ointment, for eye	849	Otology, magnifier in	468
Nephralgia simulating stone	468	Old age and modifications	1215	Ovarian (see gland therapy,	532
Nephrotomy (see nephro-	338	Oophorectomy, neuroses after	967	hematoma)	1601
tuberculosis)	338	Operative surgery in modern	1029	Ovaries, the	1281
remarks on	656	house-to-house	1478	tumor, prolapse of	1601
in boy of 4 1/2	151	Operation (see Alexander,	849	Ovaries, treatment of re-	1281
Nephritis (see list, mumps,	596	Bassal, Rothbl. Bar-	849	port on	595
pregnancy, manalysis,	596	preparation and after-	1029	Ovariectomy, enucleation	1154
respiration)	596	treatment	1029	method, addition to	1154
Bright's disease or	1602	Operations abdominal, in	92	Ovary (see also anatomical,	532
chronic	1602	country practice	92	colloid, cysts, hema-	532
malarial, chronic	468	for capsular membranes	902	toma, sclerosis)	532
prognosis of	468	for sutures	849	Overcrowding in the profes-	657
treatment	468	of new-born, relation to	1087	sion	657
Nephrothiasis	215, 1414	therapeutics and	1087	Oxygen, therapeutic value of	721
Nephrorrhaphy through lum-	850	operation in	150	Ozema, bacteriology and his-	1029
bar incision, etc.	850	when enucleate for	1214	and its generation	1029
Nephro-urectomy vs.	339	Ophthalmia, so-called, plea-	1629	Pachymeningitis, cerebral	1087
Nephro-ureterectomy	339	for atropin in	1629	hemorrhagic	1087
Nerve (see aurist, paralysis)	339	for capsular membranes	902	following sinus	2187
peroneal, injury by frac-	29	of new-born, relation to	1087	hemorrhagic, child	338
ture	29	strate in	903	Pain, abdominal, with morphin	721
stimulants and pregnant	656	silver nitrate in	1214	abdominal, with morphin	721
women	656	operation in	150	eating	721
Nerves, course and therapy by	338	when enucleate for	1214	in case obscure	849
silver method	338	Ophthalmia, so-called, plea-	1629	for sutures	849
of eyelid	338	for atropin in	1629	of palpebral, of case 1029	849
Nervous (see hysteria, pel-	532	for capsular membranes	902	Palsipations, a b d o m i n a l,	1214
vic)	532	of new-born, relation to	1087	treatment	1214
diseases, atypical fea-	532	therapeutics and	1087	of musculature of	92
tures of	532	operation in	150	face	1087
diseases, mechanical treat-	595	when enucleate for	1214	of eye	1087
ment	595	Ophthalmia, so-called, plea-	1629	of artisan's, remote	1087
diseases, pathogenesis	1601	for atropin in	1629	of infant	214
diagnosis, pathogenesis	1601	for capsular membranes	902	cerebral, in child	1478
system, anatomy and	1601	of new-born, relation to	1087	Pancreatitis and general sur-	1347
physiology	1601	strate in	903	gery, with fat-ne-	967
system, knowledge of	783	silver nitrate in	1214	crosis	967
of vertebrates, re-	532	operation in	150	hemorrhagic cavernous	1348
search on	532	when enucleate for	1214	papilloma (see cavernous, pai-	532
		Ophthalmia, so-called, plea-	1629	Papilloma, vulvar, trouble,	338
		for atropin in	1629	with	338
				Paracelsus	150
				Parafin imbedding, rapid	214
				method	214
				Paralysis (see diaphragm, di-	532
				vergence, labor, ab-	532
				tractus, ascending	903
				agitation and sarcoma	395
				agitation, pathology of	1530
				agitation, study of, treat-	151
				ment	151
				agitation, without tremor	1649
				facial, ascending	721
				facial, unique distribu-	1087
				family, periodic	1214
				following anaesthesia	1088
				Landry's	1539
				of levator palpebrae	595
				of oculomotor nerve	1214
				position, question of	338
				spastic, surgery of	214
				Strumpell's comb B.	1087
				Paramyoclonus multiplex	1539
				Paranoia of pubescence	1087
				recent cases of	1411
				Paraplegia, ataxic, unusual	903
				origin	1215
				and tetany of gastric	214
				Parasitology (see epilepsy)	1281
				Paraneurthelium, case of	1029
				Parasitis (see ataxia, tabes)	532
				Parotid (see gland, myxo-	902
				chondro-endothelioma)	902
				Parotitis (see mumps)	1539
				Particles, extraction of by	338
				Parturition, complicated by	1214
				abrids	1214
				injuries of	656
				Passiflora incarnata	595
				Patella, dislocation of, case	339
				Patella extirpation, restored	1154
				fracture of	532
				fractures of same	532
				Patent medicine, a	967
				Patelesia	1088
				Pathetic cases	338
				Pathology	1088
				antenatal	967
				antigenic, case of	1647
				Pediatrics, exudum in	151
				lethalbin in	29
				medical clinic in	402
				of infant, production of	1029
				ophthalmic contrib u-	469
				tions to	469
				Peliosis rheumatica, case	1029
				Pellagra, child	1601
				Pelvis, contracted, in Johns	92
				Hopkins	1029
				Pelvic abscess, inflam-	1088
				mation, insane, mania,	1088
				melancholia appura-	1088
				tion)	1088
				contractions, post-operative	92
				diseases, neuroses and	338
				disorders and	850
				dissemination of	850
				floor, injuries and conse-	338
				quences	338
				Pelvic ice, colpo-cystitis	1087
				tonuria spondylo-	1087
				thesis)	1087
				peritonitis	1087
				peritonitis, morbid phenom-	1087
				ena of the	850
				method of	1411
				Peritonitis, fibrinous	783
				acute, etiology of	1601
				acute, treatment of	1601
				diagnosis of	1601
				from clinical standpoint	272

	PAGE.		PAGE.		PAGE.
Peritonitis from post-appendic- cal abscess.....	350	Pneumonias, bronchial or ca- tarrhal.....	721	Pregnancy, extruterine, oper- ative.....	1530
general.....	839	bronchial or catarrhal.....	721	fibroids complicating.....	1478
suppurative treatment.....	469	treatment.....	903	hydatic.....	1478
septic.....	1214	diphtheritic.....	907	intermittent.....	850
septic, salt solution in.....	1030	double, in pregnancy.....	1067	interuterine.....	721
suppurative, treatment.....	92	following la grippe.....	402	nephritic.....	656
tubercular, diagnosis.....	1154	following sporadic men- struation.....	1348	pyelonephritic.....	1601
tuberculous.....	733, 903	inglitis.....	1348	requirements in manage- ment.....	388
tuberculous, gastrostomy.....	896	hydatid treatment of.....	721	tubal.....	850
Pertipharyngitis from post-ap- pendicel abscess.....	397	in children.....	339	rupture.....	1649
Perineal body.....	939	in infants.....	1156	Preparation for operation, points in.....	1347
Perspiration, night sweats.....	967	of children, earache in.....	402	Prescriptions, metric system in.....	738
Persuasion, therapeutics of.....	1411	lobar, treatment.....	1029	of long ago.....	1030
Phagocytes, something about.....	378	lobar, streptococcus in.....	1087	of physicians.....	1839
Pharmacopœia, U. S.....	202	action after.....	1087	Prisons, medical service in, plea.....	1347
Pharmaceutical Committee, re- port of.....	468	of lung fever.....	903	Proctologic clinic.....	1281
Pharmacy the handmaid of medicine.....	657, 1347	oxygen inhalations in.....	408	Proctoscopy, done.....	637
Pharynx (see hemorrhages). effect of occupations on.....	1649	prognosis and etiology.....	154	from standpoint of.....	339
Lymphoid hypertrophies of.....	23	surgical complications.....	721	Proctoscope in ulceration of rectum.....	657
Pastic affections.....	967	treatment of.....	908, 1602	with abdominal symp- toms in children.....	1478
Prolonged in disease of.....	402	treatment in, value of.....	1649	Pneumothorax from gas-pro- ducing bacteria.....	1214
Purior of epiglottis and.....	1539	venesection in.....	215	in children.....	1478
Purulent, action of cells on.....	849	venesection in.....	215	Pneumothorax from gas-pro- ducing bacteria.....	1214
Phenol, sensitive in.....	151	venesection in.....	215	in children.....	1478
Phenol, toxication.....	849	venesection in.....	215	Poisoning (see epilepsy, epi- lepsy, in, migraine, morphia), acetanilid, from external absorption.....	29
Philippines, ophthalmic sur- gery in.....	1411	acetanilid, from external absorption.....	29	acute iodoform.....	1347
Philosophy of medicine.....	657	acetanilid, from external absorption.....	29	bromoform.....	272
Phimos, treatment of.....	1347	acetanilid, from external absorption.....	29	in children.....	1478
Phlegmasia alba dolens, treat- ment.....	338	acetanilid, from external absorption.....	29	by sulphonal and trional.....	1478
Phonendoscope for foreign bodies in trachea.....	1029	acetanilid, from external absorption.....	29	colocynch.....	657
Phoses and aphoses, concern of.....	339	acetanilid, from external absorption.....	29	carbolic acid.....	402, 1214
Phosphorus poisoning, fatty metamorphosis of.....	849	acetanilid, from external absorption.....	29	foetid and metallic irri- tants.....	1649
Photomicrographs, on.....	214	acetanilid, from external absorption.....	29	lead, cases with treat- ment.....	1539
Photography, Finson's 1030, 1601	1601	acetanilid, from external absorption.....	29	mercurial, and amalgam fillings.....	1215
Photists: Churchill theory.....	721	acetanilid, from external absorption.....	29	protein, case.....	1282
Pichon, Sanzarian.....	29	acetanilid, from external absorption.....	29	Poliomyelitis, acute antero anterior.....	150, 1292
Colorado for.....	722	acetanilid, from external absorption.....	29	acute anterior of adult.....	1347
diagnosis of early.....	402	acetanilid, from external absorption.....	29	polymorphism, case.....	1030
etiology and treatment.....	215	acetanilid, from external absorption.....	29	Polyp.....	150, 1292
histories of arrested cases.....	29	acetanilid, from external absorption.....	29	in child.....	402
home treatment of.....	1214	acetanilid, from external absorption.....	29	Polyp, etiology of.....	1282
incident diagnosis of.....	1539	acetanilid, from external absorption.....	29	Porro-Cearo.....	272
Pichon and his co-worker.....	1155	acetanilid, from external absorption.....	29	covery.....	272
as a prescriber.....	1347	acetanilid, from external absorption.....	29	operation, case of.....	1649
family, and ear and nose diseases.....	1347	acetanilid, from external absorption.....	29	Porto Rico, practice in.....	1478
from patient's standpoint.....	214	acetanilid, from external absorption.....	29	Porto Rico, posterior.....	595
high aims of.....	469	acetanilid, from external absorption.....	29	Post hoc, propter hoc.....	150, 1281
idea of.....	469	acetanilid, from external absorption.....	29	Postpartum, relief of.....	505
legal responsibility of.....	1087	acetanilid, from external absorption.....	29	Postpartum, relief of.....	505
potentialities of.....	1539, 1602	acetanilid, from external absorption.....	29	Walcher.....	1214
Physicians of ancient times, some.....	532	acetanilid, from external absorption.....	29	Walcher, Trendelenburg and Mercuro in mid- wifery.....	28
priest and patient.....	532	acetanilid, from external absorption.....	29	Potassium bitartrate in yel- low fever.....	1282
trials of a.....	1155	acetanilid, from external absorption.....	29	low in meningitis.....	1282
Physicians as non-advertisers, benefits from.....	656	acetanilid, from external absorption.....	29	permanente for gleet.....	207
Physiology.....	338, 657, 783, 850, 907, 1411, 1601	acetanilid, from external absorption.....	29	Potato cylinder, intestinal tumor.....	1601
advances in.....	469	acetanilid, from external absorption.....	29	Potato cylinder and modern disease, surgical treat- ment.....	532
Picture taking in three di- mensions.....	92	acetanilid, from external absorption.....	29	paraplegia, report of case.....	596
Pigment production by ba- cilli.....	468	acetanilid, from external absorption.....	29	Practico, country, experience in.....	1281
Pilocarpin, use of.....	596	acetanilid, from external absorption.....	29	country, operations in.....	92
Pipe stem in uterus.....	850	acetanilid, from external absorption.....	29	my early years in.....	1090
Pistol-shot wounds, evidence on.....	1347	acetanilid, from external absorption.....	29	notes from.....	1088
Pituitary body, tumor of.....	1539	acetanilid, from external absorption.....	29	of medicine.....	92
Pityriasis versicolor.....	93	acetanilid, from external absorption.....	29	of law, does it pay?.....	742
Placenta, adherent, in.....	967	acetanilid, from external absorption.....	29	rationalism in.....	402
adherent, cure in.....	967	acetanilid, from external absorption.....	29	Pre-emptive state, danger signals of.....	468
previa.....	656, 967	acetanilid, from external absorption.....	29	Pregnancy (see abortion, cysts, menstruation, miscarriage, ovumectomy, neo- plasia, nervous, pneu- monia, pyelitis, urine, vomiting), abdominal, of nearly two years.....	656
previa, cases.....	215, 1154	acetanilid, from external absorption.....	29	albuminuria of cases.....	1087
previa, inverted, uterine complicating.....	92, 272	acetanilid, from external absorption.....	29	Bright's disease induced by.....	402
previa, management of.....	1087	acetanilid, from external absorption.....	29	carcinoma uteri in.....	721
Plague, bubonic.....	1539	acetanilid, from external absorption.....	29	complicated by uterine fibroids.....	1478
Plaster of Paris in surgery.....	532	acetanilid, from external absorption.....	29	double pneumonia in.....	1087
Pleuræ (see effusions). Pleurisy, hemorrhagic, case, 1088 pneumonic, remarkable case.....	29	acetanilid, from external absorption.....	29	ectopic.....	150, 214, 1087
with effusion, remarks on.....	468	acetanilid, from external absorption.....	29	ectopic, case of.....	656, 850
Pneumomassage of auditory canal.....	849	acetanilid, from external absorption.....	29	extruterine.....	214, 656, 850
Pneumonia (see also assthen- ia, otitis, streptococcus, typhoid). acute lobar, treatment.....	1649	acetanilid, from external absorption.....	29	extruterine, cases.....	272
and treatment.....	850	acetanilid, from external absorption.....	29	Quack of time of Charles II.....	1088
atypical.....	783	acetanilid, from external absorption.....	29	Quackery, unity essential to enforcement.....	214
blisters in.....	1601	acetanilid, from external absorption.....	29	Quarantine, preparation of.....	656
Quackery, unity essential to enforcement.....	214	acetanilid, from external absorption.....	29	Quinacrine, use in malaria, injection of.....	1214
Quarantine, preparation of.....	656	acetanilid, from external absorption.....	29	in malaria, injection of.....	1214
Quinacrine, use in malaria, injection of.....	1214	acetanilid, from external absorption.....	29	in malaria, injection of.....	1214
in malaria, injection of.....	1214	acetanilid, from external absorption.....	29	mixture for children.....	1155
mixture for children.....	1155	acetanilid, from external absorption.....	29	Rabies, a study of.....	595
Rabies, a study of.....	595	acetanilid, from external absorption.....	29	with bacillus diphtheria.....	595
with bacillus diphtheria.....	595	acetanilid, from external absorption.....	29	Radial nerve, fracture of.....	721, 850
Radial nerve, fracture of.....	721, 850	acetanilid, from external absorption.....	29	fracture of shaft of.....	902
fracture of shaft of.....	902	acetanilid, from external absorption.....	29	fracture of ulna and.....	214
fracture of ulna and.....	214	acetanilid, from external absorption.....	29	fractures of forces of.....	150
fractures of forces of.....	150	acetanilid, from external absorption.....	29	Railroad as benefactor to civ- ilization.....	1649
Railroad as benefactor to civ- ilization.....	1649	acetanilid, from external absorption.....	29	Railway noses, etc., disin- fection of.....	338
Railway noses, etc., disin- fection of.....	338	acetanilid, from external absorption.....	29	Raynaud's disease, case.....	1347
Raynaud's disease, case.....	1347	acetanilid, from external absorption.....	29	death.....	1601
death.....	1601	acetanilid, from external absorption.....	29	disease, case of.....	595
disease, case of.....	595	acetanilid, from external absorption.....	29	Receptaculus chyli, obliter- ation.....	1479
Receptaculus chyli, obliter- ation.....	1479	acetanilid, from external absorption.....	29	Rectal (see carcinoma, dress- ings, life expectancy), anatomies.....	1649
Rectal (see carcinoma, dress- ings, life expectancy), anatomies.....	1649	acetanilid, from external absorption.....	29	disease.....	1478
disease.....	1478	acetanilid, from external absorption.....	29	Rectum (see also ballooning, proctoscope, resection, anus, diseases of).....	1649
Rectum (see also ballooning, proctoscope, resection, anus, diseases of).....	1649	acetanilid, from external absorption.....	29	disease, case of.....	1601
disease, case of.....	1601	acetanilid, from external absorption.....	29	and pelvic cavity.....	648
and pelvic cavity.....	648	acetanilid, from external absorption.....	29	case of operation for.....	721
case of operation for.....	721	acetanilid, from external absorption.....	29	fish bone in.....	1602
fish bone in.....	1602	acetanilid, from external absorption.....	29	foreign bodies in.....	1088
foreign bodies in.....	1088	acetanilid, from external absorption.....	29	reflex symptoms from.....	648
reflex symptoms from.....	648	acetanilid, from external absorption.....	29	stricture of.....	632
stricture of.....	632	acetanilid, from external absorption.....	29	syphilitic stricture of.....	721
syphilitic stricture of.....	721	acetanilid, from external absorption.....	29	ulcerations of, intol- erant.....	1347, 1601
ulcerations of, intol- erant.....	1347, 1601	acetanilid, from external absorption.....	29	Reflexions at my thirty-third mile.....	596
Reflexions at my thirty-third mile.....	596	acetanilid, from external absorption.....	29	Reflexes in diagnosis.....	338
Reflexes in diagnosis.....	338	acetanilid, from external absorption.....	29	recent described.....	967
recent described.....	967	acetanilid, from external absorption.....	29	Refraction and accommoda- tion.....	967
Refraction and accommoda- tion.....	967	acetanilid, from external absorption.....	29	in ancient times.....	995
in ancient times.....	995	acetanilid, from external absorption.....	29	Refuse and garbage disposal 1539	1539
Refuse and garbage disposal 1539	1539	acetanilid, from external absorption.....	29	Renal disease, imagination of.....	1347
Renal disease, imagination of.....	1347	acetanilid, from external absorption.....	29	disease and mental de- rangement.....	1347
disease and mental de- rangement.....	1347	acetanilid, from external absorption.....	29	diagnosis.....	1214
diagnosis.....	1214	acetanilid, from external absorption.....	29	requirements for study and practice, minimum.....	656
requirements for study and practice, minimum.....	656	acetanilid, from external absorption.....	29	Resection (see Basswood's dis- ease, epilepsy, liver), of cecum, etc., for car- cinoma.....	1030
Resection (see Basswood's dis- ease, epilepsy, liver), of cecum, etc., for car- cinoma.....	1030	acetanilid, from external absorption.....	29	of rectum and bladder, etc.....	912
of rectum and bladder, etc.....	912	acetanilid, from external absorption.....	29	of sigmoid for carcinoma.....	204
of sigmoid for carcinoma.....	204	acetanilid, from external absorption.....	29	Respiration, Cheyne-Stokes and nephritic.....	783
Respiration, Cheyne-Stokes and nephritic.....	783	acetanilid, from external absorption.....	29	nasal, adenoids and.....	1214
nasal, adenoids and.....	1214	acetanilid, from external absorption.....	29	Respiratory apparatus, dis- eases, treatment.....	783
Respiratory apparatus, dis- eases, treatment.....	783	acetanilid, from external absorption.....	29	system, diseases of.....	902
system, diseases of.....	902	acetanilid, from external absorption.....	29	tract, mucous mem- brane of.....	469
tract, mucous mem- brane of.....	469	acetanilid, from external absorption.....	29	therapeutic value of.....	92
therapeutic value of.....	92	acetanilid, from external absorption.....	29	Retina (see also arterio- sclerosis, ataxia, tropic, detachment of).....	532
Retina (see also arterio- sclerosis, ataxia, tropic, detachment of).....	532	acetanilid, from external absorption.....	29	Retinitis circinata.....	656
Retinitis circinata.....	656	acetanilid, from external absorption.....	29	albuminuria, one-sided.....	1411
albuminuria, one-sided.....	1411	acetanilid, from external absorption.....	29	Retraction theory, difficulties in.....	783
Retraction theory, difficulties in.....	783	acetanilid, from external absorption.....	29	Retrospection, ventral fixation of.....	1088
Retrospection, ventral fixation of.....	1088	acetanilid, from external absorption.....	29	Rheumatic diathesis.....	1155
Rheumatic diathesis.....	1155	acetanilid, from external absorption.....	29	Rheumatism (see heart dis- eases, rheumatoid), acute, gonorrhœal.....	1601
Rheumatism (see heart dis- eases, rheumatoid), acute, gonorrhœal.....	1601	acetanilid, from external absorption.....	29	dry hot air in.....	1347
dry hot air in.....	1347	acetanilid, from external absorption.....	29	in infants.....	1347
in infants.....	1347	acetanilid, from external absorption.....	29	pathology, etiology of.....	469
pathology, etiology of.....	469	acetanilid, from external absorption.....	29	ment.....	656
ment.....	656	acetanilid, from external absorption.....	29	salicin in.....	902
salicin in.....	902	acetanilid, from external absorption.....	29	theory for.....	595
theory for.....	595	acetanilid, from external absorption.....	29	Rhinitis, chronic, forms and treatment.....	1087
Rhinitis, chronic, forms and treatment.....	1087	acetanilid, from external absorption.....	29	fibroids.....	967
fibroids.....					

- Roentgen rays and eye.....1030
 rays, ill-effects of.....95
 rays in med. and surg.....1410
 Rumination in boy of 9.....272
 Rural relief, notes on use of.....1281
 Ruych, Fred, anatomist.....468
- Sadism and fetishism.....850
 Salsin in acute rheumatism. 962
 Saline solution, when to use.....1281
 Salol and salicylic acid.....962
 Salophen, study of.....1347
 Salt solution (see peritonitis, septicemia).
 salt solution for col-lapsed eyes.....338
 solution in surgery.....595
 solution, notes on use of.....1242
 solution and venesection in eclampsia.....469
 Salts, table of solubility of.....272
 Sanarelli (see serum, yellow fever).
 reply to.....533
 Sanitarium (see phthisis, sanatorium).
 Loomis, visit to.....788, 849
 merits of a trustee.....29
 Sanatogen.....1214
 Sange, results at.....967, 1214
 Sanitation (see climatology, and quarantine principles).
 city.....902
 home.....902
 in prisons.....850
 solitary, tests on use of.....1242
 of private houses.....468
 San Jacinto mountains, in the.....1214
 San Luis Valley.....478
 Sarcoma (see also choroid, gland, kidney, paralytic, uterine, cancer, stomach, uterus).
 alveolar, of skull fossa.....1347
 erysipelas toxina in.....532
 middle ear.....468
 of nose and ventricular cavity.....29
 of nose, cases.....499
 of tonsil.....721
 of upper lid.....1411
 of uterus, case of.....657
 Sarcoid skin.....1353
 Sarcomata of jaws.....1478, 1601
 Scabies.....92
 treatment.....1347
 Scariola.....272, 532
 bath in.....595
 etiology of.....1029
 Scars, never (see scars, an-gina of, carbolic acid for.....1088
 by inoculation.....721
 scarification in.....783
 diagnosis.....1087
 diplococcus, report on.....272
 history of.....1282
 prevention of spread of.....214
 remarks on.....908
 streptococci isolated in.....272
 treatment of.....1029
 Schleich's mixture in 110
 operations.....1601
 Schoenlin, dangers of.....1482
 diseases.....1411
 hygiene of.....1411
 School seats.....1030
 School teaching (see school).
 in.....1281
 promote health in, how.....1411
 practical, for children.....1411
 Scleritis.....1478
 nerve stretching for.....1601
 Scissors grip for plastic work.....595
 Sclerosis, multiple, and disseminated insular.....1087
 multiple, case of.....1478
 of ovary, primary.....1478
 Scott, five cases.....967
 Scott, Walter, medical history of.....1215
 Scrofulous disease in.....1601
 Scrofula, dangeon, simulating leprosy.....1347
 infantile.....1087, 1347, 1601
 infantile, autopsy.....215
 Seascickness.....788
 Seaside, parent's.....402
 Sectaria, abdominal, abdominal vs. vaginal.....1478
 obstruction after.....272
 abdominal, vaginal route.....967
 Cesarean (see embryot-omy, Porro).....721, 1089
 adhesions, study of.....1402
 perineal.....902
 vaginal.....721
 Sections, abdominal, ninety-three.....721
 abdominal since 1771.....1087
 abdominal, three.....656
- Seminal vesicles, operative routes to.....1539
 Senn, N., plastic operations by.....1029
 Septic abscesses.....1214
 and puerperal insanity.....1214
 puerperal, case of.....1539
 puerperal, it is prevent-able.....28
 puerperal, surgical treat-ment.....272
 puerperal, treatment of.....1029
 ogy.....272
 Septa, nasal.....783
 Septic processes, treatment.....1155
 Septicemia (see also puer-peral abortion).
 post-abortion.....903
 puerperal.....967, 1214
 puerperal, etiology of.....402
 puerperal, diagnosis.....902
 salt solution in.....339
 treatment.....215
 treatment, case of.....469
 venesection and infusion in.....469
 Septu atrium, resection of.....849
 nasal adenocarcinoma of.....1087
 nasal deviations and operation.....272
 of nasal, pathology of.....1029
 Serum (see immunity, labor, tetanus).
 antistreptococcal.....28, 339, 849, 902, 1539
 antistreptococcal.....338
 antipneumonia, six cases.....595
 antitoxin.....151
 case.....151
 diagnosis in case of.....215
 blood, in yellow fever treatment.....468
 Sanarelli's antiamarillic bacillus.....1155
 therapy, notes on diph-theria.....338
 therapy of puerperal sep-sis.....272
 therapy, progress in.....214
 treatment and results.....278, 339
 yellow fever, case treated.....596
 Serum, non-specific, im-munally and.....92
 Sex determination.....721
 Serum, culture of.....469
 symptoms in genito-uri-nary organs.....903
 Serology of intestinal cholera.....92
 Sheldon murder trial.....1215
 Shock in modern surgery.....273
 shoulder, dislocation of.....1031
 or "heart failure".....1347
 traumatic.....850
 traumatic, a study of.....1539
 Shoulder-joint, synovitis of.....721
 Siboney, epidemic at.....533
 Sickness, philosophy of.....721
 Sigmoid, cancer, carcinoma, resection).
 diseases of.....721
 pleura, disease in.....82
 sigmoid, diagnosis of.....903
 Sigmoiditis, two cases.....903
 Sigmoidoscopy, pneumatic.....1030
 Silver, nitrate, preparation of.....656
 Siveiter, nitrate in ophthalmia.....1214
 soluble metallic.....902
 Singers' nodes, consequences.....1087
 "nodules," remarks on.....469
 Sinus (see ethmoid, mucocoele, thrombosis).
 diseases, following influ-enza.....657
 frontal, suppuration of.....1602
 frontal, suppuration.....902
 lesions, ocular and orbital symptoms.....402
 maxillary, inflammation of.....967
 phenoid, empyema of.....272
 thrombosis, case.....1087
 thrombosis, case of.....468
 thrombosis, cure without opening sinus.....902
 thrombosis from otitis media.....402
 thrombosis, otitic, cases.....468
 Sinuses, sarcoma of.....215
 adjacent, to orbit, dis-cases of.....468
 Sinusitis, acute frontal.....1281
 operative treatment of.....1281
 Siphon (see siphon, contrac-tions).
 Skin (see diseases).
 cancer, of, treatment.....29
- Skin clinic, notes from a.....532
 grafting by Thierach's method.....402
 grafting, new process.....272
 grafting, notes on.....402
 lesions, notes on.....1411
 Skull (see fracture, sarcoma).
 Sleep, hypnotic, operations during.....29
 Smallpox.....902, 967
 chickenpox and measles.....1087
 diagnosis.....1029
 differential diagnosis.....1029
 Holgin epidemic of.....1348
 in Nebraska City.....902
 points on.....151
 prevention of.....1347
 symptoms and diagnosis. Phila.....1348
 statistics.....469
 treatment of.....1601
 yellow fever and, hygiene 214
 unrecognized.....1029
 Snake bites, deaths from.....29
 Societies, medical, plea for unification of.....150
 Society, Doane Co. Med. his-tory of.....850
 Ind. State Med. history of.....215
 Ind. State of patho-logic department.....1087
 pediatric, necessity for.....214, 656
 Sociologic conditions.....783
 Soldiers (see surgeon, ty-phoid, venereal).
 Some of the little things.....1410
 Sounds (see asthma, tracheal).
 Spain, two days in.....1214
 Specialism and ordinary prac-tice.....656
 benefit to practice of medicine.....1088
 effect of, on medical pro-fession.....656
 ethics of.....656
 evolution of.....656
 result of.....656
 Specialist, general, practi-tioner and.....1281
 the.....1029
 Spectrum.....468
 plentness of.....1601
 Speech and its disorders.....1155
 defective and cerebral de-fectiveness.....1649
 Spermatozoa, note on, case.....1539
 Spermatorrhea, poliuria n.....1155
 Sphenoid (see sinus).
 Spina bifida.....272
 bifida and cleft palate.....273
 operative treatment in.....1539
 treatment of.....1539
 Spinal (see arthritis, cord, curvature, correction of, deformity from.....1281
 column, rigidity of.....1347
 curvatures, correction of.....1601
 curvatures, erector spinae and.....1281
 Spine (see fracture, discus-sion, osteo-arthritis).
 anemia with disease of.....29
 calcification of, gymnastic exercises.....596
 dislocation of, cases.....29
 gunshot injury of.....468
 percussion of.....802
 rare gunshot injury to.....1155
 Spiritual aids to medical practice.....92
 Spleen, physiology of.....1214
 Splenectomy for floating spleen.....783
 for rupture of.....1281
 Splenic pseudoleukemia, case.....967
 Split brace, leather.....850
 for fracture, grip.....1539
 of clavicle.....1539
 Splints, rubber, after intra-capsular operations.....214, 338
 Splinter fracture, pelvis in.....905
 bearing of paralysis on.....338
 Sponit, what can we do for.....1478
 Spontaneous abortion.....1347
 Stammering, case of.....850
 State vs. child.....1214
 Stenosis, mitral.....903
 mitral, with fever.....150
 nasal.....1029
 nasal, pharyngeal.....92
 Sterility in women.....721
 Sterilization, electric heating for.....215
 of hands.....1029
 Sternberg-Sanarelli contro-versy.....967
- Stethoscope, new binocular.....1347
 Stomach, acute dilatation of.....469, 1214
 average man's.....1215
 cancer of.....856
 cancer of, diagnosis and treatment.....1155
 cancer of, diagnosis, chemical.....532
 cancer of, diagnosis, early.....1088
 cancer of, history of.....469
 cancer of, pathology and therapy.....532, 1411
 contents, examination of.....902
 contents, in infant.....1155
 contents, tests of.....92
 diata, gastric, relief chlorhydria and.....28
 diagnosis, X-ray in.....596
 digestive activity of.....214
 diata, gastric, relief for.....902
 disease, laboratory in diagnosis of.....1088
 diseases of, diagnosis.....1601
 extirpation, history of case.....903
 functional diagnosis.....783
 gastroplication of.....1539
 hourglass, recovery.....967
 layage of.....967
 perforation.....1281
 sarcoma of.....1411
 summary of operations.....1411
 summary of.....967
 tube, the.....635
 Stomatitis materna.....532
 ulcerative.....1602
 Stone (see nephralgia, cal-culus).
 operations for.....1155
 choice of operations for.....1478
 retroperitoneal, case of.....1411
 Stop worrying.....469
 Strabismus and heterophoria, correction of.....402
 divergent, correction of.....967
 experiences with.....1087
 or squint, treatment.....967
 result of operations for.....1088
 technic of advancement.....595
 with general narcosis.....151
 Streptococci isolated in scar-defect fever.....272
 pneumonia.....1087
 infection, treatment of.....849
 pyogenic, in gonococcal disease.....28
 Stricture (see electrolysis, eso-phagus, rectum, typhoid).
 acute, treatment of.....1214
 Strophanthus seeds, green and brown, action of.....150
 Strontian, research on.....29
 Starchin, absorption of, study in.....1281
 Student in medicine.....1281
 Subinvolution, treatment of inertia and.....1478
 Sugar and pigment formation.....468
 Suggestion as sleep producer in insane.....903
 power of.....722
 psychic elements in.....783
 Sulcatum, treatment of.....338
 Summer complaint (see also, children).
 Sun fever.....1247
 Sunstroke, study of.....1029
 Superrotation, case of.....1411
 Suppuration, treatment of.....903
 Suppurations, pelvic treat-ment.....1155
 Suppurative cases, report of.....338
 Suprapneal extract, nose and throat.....469
 extract in Addison's dis-ease.....903
 extract in ear, etc., sur-gery.....1347
 Surgeon, provincial, passing of.....92
 abdominal, part of.....1214
 Surgery (see also, fever, first-aid, fractures, intra-pelvic, ophthalmologic, general, treatment of, abdominal, in private homes.....1411, 1478
 abdominal, part of.....1214
 abdominal, part of.....1478
 address in.....533
 complications in.....595
 country cases.....1029
 country, ophthalmologic.....338
 emergency.....850

- Surgery, gynecologic, antiseptics in 1154
 internal remedies 272
 medicinal, experience in 1152
 nasal, abusers in 849, 1195
 ophthalmic, suppurative 814
 contract in 814
 orthopedic, lectures on 849
 puerperal 783
 rectal, cases 1283
 rhinial minor 1601
 tendencies in 902
- Surgical (see dressings). 468
 aggressiveness 1029
 cases, Cook C. Hosp. 1029
 cases, interesting 902, 1223
 cases, report of 402
 cases, some 338, 656
 cases, with comments 1087
 experience, with cases 1214
 intervention, symptoms 654
 remaining 1281
 notes 1087
 tolerance and results 1601
- Suture, Kats, in extract 28
 traction 28
 "right-angle" continuous 273
 intestinal 273
 Suture, see ligatures
- Sweating, paroxysmal 1539
- Symbiepharon, plastic operations for 1154
 relieved by Theirach grating 1411
- Sympathetic (see glaucoma, excision)
- visceral, bearing of 1649
- Symphysotomy, case of 28
 operation of 402
 of case 402
- Symphysis pubis, separation in labor 28
- Symptoms, de-manding intervention. 1088, 1155, 1215
 subjective interpretation 1214
 of 1215
- Synechiotomy of stapes 721
- Synthetic, modern use 469
- Syphilid, squamous 902, 1029, 1281
 serpigulous 1411
- Syphilis (see insurance, lrisitis)
- and general practitioners. 1214
 and parasymphylitic affections 850
 Baccelli injections in 656
 cerebral and meningeal 657
 contagiousness of inherited 1411
 cutaneous scars of 93
 gonorrhoea and marriage 859
 hereditary 1154
 in fatal 967
 inherited, contagiousness of 1088
 nervous, diagnosis 214
 notes on 656
 of skin, tertiary 1411
 points on 338
 oropharyngeal 902
 primary 532, 721
 secondary and tertiary 505
 syphilis 505
 surgical aspects of 850, 903
 the chancre 338
 syphilis, case 219
 treatment of 1155, 1410
- Syphilitic (see dactylitis, leucoderma, fever, rhinitis, stricture)
- Tabes dorsalis, exercise treatment 273
 dorsalis, pathology, diagnosis, treatment 1348
 gastric crises 1348
 ocular manifestations in 1154
 ocular palsies of 1087
 with atrophy of tongue 656
- Tachycardia, paroxysmal 272, 967
 Tait, Lawson, the late 1214
- Talipes equinovarus, operative method 28
 Tappeworm, morphia for 783
 Taste, test-case for 721
 Tear of retrocaval septum 721
 Teiclytic, congenital, congenital lingual 1281
- Temperament and disease 1741, 1539
 Temperature changes and circulation 272
 and rhythm 1649
 high, control of 1601
- Temporal bone, surgery of 468
- Tendon of biceps, anomaly of 1029
 rupture of extensor 1539
- Tendons and muscles, lesions of 902
 Tennessee method, the 656
- Tenotomy, preliminary to amputation 338
 subcutaneous 595
 Tentative for tropical 1348
 Tent-life in Colorado 299
 Teratoma testis 1214
 Testicular chorionepithelioma of 1087
 cytotid disease of 1214
 Testicles retention of 469
 gangrene of 1478
 Testimony, of a leg 150
 strychnin 150
 expert 1087, 1549
- Tetanus, and tetanus 532
 and tetanus serum 1087
 antitoxin and carbolic acid in tetanus 1282
 Baccelli method in case of 1478
 carbolic acid in 721
 neonatorum, chronic 1539
 new treatment of 332
 reaction of to serum 1410
 rapidly fatal case 151
 scar 1601
 traumatic 1154, 1155
 treated by antitetanus serum 151
 treated by Baccelli's method 1281
 treated with antitoxin 1347
 treated with antitoxin 339, 721
- Tetany (see paraplegia). 1215
 gastric, case of 1215
 in adult, case of 29
 Text-books, modern medical 402
- Therapeutics, of agents, new series 903
 measures other than medications 1478
- Therapeutics, ancient vs. modern 28, 92
 moral 532
 ocular 150, 902
 past, present and future 468
 rational 1029
 surgical 532
- Therapy, evolution of 150, 532
 evolution of modern 28, 272
 of typhanic cycle 339
 Theriac in typhoid 903
 Thermometer, fever 272
- Thialion, clinical experience 902
- Thiocal in pulmonary tuberculosis 902
 colitis 902
 Thiostramin 1347
- Thomson's method, in uvergio 29
- Three Board Systems, influence of 656
- Throat, acute, non-infectious, faucial, in treatment 533
 bacteriologic examination 1601
 nose, ear and family physician 1347
 affections, nonophen, etc. 505
 cut, case 150
 foreign bodies in 93
 membranous sore 1087
 syphilitic 902
- Thrombophlebitis with peritonitis, fibrillar abscess 1029
 thrombosis after colotomy 92
 of cavernous sinuses 150
 of lateral sinus, new symptom of 850
 of sigmoid sinus, operation in 92
 words, spelling use of 721
- Thrombus neonatorum 1410
- Thyroid (see gland, zoster, toxic, obesity)
- extract in cerebral neoplasia 402
 extract in 1030 insanity 1347
 extract, use of 1478
 gland, typhoid complicating 1649
- Tibia, restoration of 1029
 specific necrosis of 903
- Tibial tubercles, enlargement 533
- Tinea capitis 92, 1347
- Tissue builder, a good 595
- Tissues, method of preserving 1087
- Tobacco and amblyopia 150
 are its uses detrimental? 402
 its detrimental to mankind 1030
 its history and effects 1411
 toxicity of 1281
 using and intemperance 92
- Toulinid-blue and ocular inflammations 850
 blue in eye diseases 650, 902
- Tones and murmurs from oral cavity 967
 Tongue in disease 1155
 Tongue (see fibropoloma, sarcoma) and adenoid removal 338, 1214
 clippings, some 372
 pharyngeal, hyperplasia of 468
 ruffiness of 1478
- Tonsillar (see abscess) 1478
 inflammation, epidemic 1410
 ring hypertrophies in 1411
- Tonsillitis apthous 1478
 chronic, case of 338
 in infant of five months 532
 treatment and prophylaxis 1215
- Tonsils, false 216
 faucial, suppurative processes in 967
 Touth in nasal cavity 214
- Tooth plate, c. s. pharyngitis for impacted 783
- Toxemia, importance of recognition 273
 malarial 505
 recognition of 215
 with convulsions 656
- Toxic (see serum)
- Trachea, foreign bodies in 1029
 diagnosis of foreign bodies 1029
- Tracheal sound, Wintrich's value of 967
- Tracheitis and laryngitis, case of 505
- Tracheotomy for croup 1281
- Trachoma 902
- Trachomatous eyes, retraction of 92, 1154
- Training, effects of 657
- Transactions, journalizing the 532
- Pennsylvania University, his- tory of 532
- Trauma and cerebral arterio- sclerosis 1029
- Treatment, medical and surgical 850
 Trendelenburg 1087
- Trendelenburg (see posture)
- Trephining for epilepsy 967
- Trichinosis, without eosinophilia 1539
- Triphenlin, therapeutic action of 214, 272
- Troops in West Indies, care of 656
 dental sequelae in 1154
- Trusts, a force of 468
- True Crookes', excitation of 1155
- Tubercular (see hemoptysis, meningitis, osteomyelitis, peritonitis)
- tubercle in animals 902
- Tuberculosis in tuberculous 783, 1281
 test, notes on 402
- Tuberculosis, treatment, of 1087
 fistula, glands, immunity, negroes, typhoid 1478
 and insurance 1214
 an indication for nephrectomy 469
 art, reason of 1088
 bovine and man 657, 721
 bovine in Canada 1539
 compulsory reporting of 850
 diagnosis and 1087
 duties of the hour 1539
 early diagnosis 903
 early sign of 1540
 etiology 721
 etiology from biologic standpoint 932
 finally snail-like for 1530
 following typhoid 902
 hip-joint, surgical aspect 272
 home 902
 and prevention of 902
 in childhood, morbid anatomy 1088
 in children 1688
 in children 783
 inhalation treatment 1088, 1154, 1411
- in monkeys 214
 joint, diagnosis 402
 large 656
 modern idea of 281
 necessity for state aid 1348
 nuclei in four cases 402
 blood-vessels, etc. character of 150
- Tuberculosis of bones and joints, treatment 1155
 of breast 468
 of intestine, localized 533
 of kidney, diagnosis of 649
 of mamma, coexistence with carcinoma 150
 of pleura, case of 1281
 of pleura, without other involvement 29
 of throat 967
 of ureter 967
 prevention of 850
 primary lesions of 967
 pulmonary 656
 pulmonary, case of 532
 pulmonary, early diagnosis, nosos, etc. 402, 532
 pulmonary, blood in 967
 renal 721
 reasonable control of 1410
 Roentgen ray in 783
 sanatoria for 967
 spread of 532
 sterilization of lung tissue 402
 struggle against 850
 subacute miliary 29
 surgical 849
 treatment 721, 850
 vagaries in 339
 vexed questions on 468
 watery extract of bacilli 402
- Widal reaction in 1087
- Tuberculous (see adenitis, lrisitis, pleurisy, peritonitis)
- plea for 902
- Process in children, three steps in 92
- Tumor, (see also pharynx, pituitary)
- brain, optic neuritis a 1539
 of nasopharynx 1062
- Tumor, brain, exploratory operation 214
 sign of 1155
- colon and intra-abdominal 656
 dermoid of conjunctiva and cornea 92
 fibroid and ovarian 656
 fibrous, early operations for 595
 laryngeal, case 1154
 of conjunctiva, ciliated, 1154
 of labium 1050
 of nasopharynx 1602
 ovarian, prolapse through phantom 468
 phantoms 1087
- Tumors (see also neoplasms), benign laryngeal 1030
 cerebral, treatment of 1088
 hepatic, 76 cases of liver resection for 1539
 in spinal canal, treatment 967
 lecture on 1029, 1539
 of breast, malignant 849
 of childhood, congenital 1281
 of eye, malignant 1539
 of fingers, congenital 1215
 of gigantic size 1411
 of the brain 656, 1061
 of mamma and 1155
 of oblongata 721
 ovarian 92
 ovarian 1154
 cystic 849
 phantoms, relation of colon to 532
 renal, diagnosis 967
 retro-peritoneal, case and specimen of 1478
 woman with 1087
- Turbinal, offending middle 967
- Twin birth, peculiar case 150
- Twins, something rare in 783
- Typhanic cavity, therapy of 339
- Typhoid, treatment of 656
- Typhoid (see aphasia, copper eruptions, the term, hospital, users) 28,
 address on 92, 469
 advance in knowledge of 1281
 among our soldiers 150
 arterial 178
 and malarial fevers, case 273
 and pneumonia with tuberculosis 150
 and stricture of esophagus 1155
 bacilli from coll. to dis- tinguish 030
 bacillus isolated after 18 years 902
 bacilli in urine of patients 238
 bacillus meningitis due to 1347

	PAGE.		PAGE.		PAGE.		PAGE.
Typhoid, bacteriology of.....	1602	Tyrene's antiseptic powder, experiences with.....	150	Uterine (see cancer, fibroid, leucorrhoea, menopause, myomata), cavity, digital exploration of.....	1029	Vertigo.....	468, 783
both treated in.....	1281			devious.....	1251	Veterinary practice.....	402
boue necrosis following.....	902	Ulcers, corneal, ichthyol in.....	1478	displacements.....	1460	Viscera, abdominal, treatment through colon.....	1347
cause and treatment of.....	1478	gastric, hemorrhage from, surgery in.....	1601	of.....	1029	transposition of.....	408, 1087
cholecystitis with recovery.....	532	Ulcus ventricular, rectal feeding.....	1411	Uterus (see chloasma, fibroids, adenocarcinoma), Alexander operation for.....	1601	Union, binocular, crisis in.....	656
clinical picture and post-mortem in.....	1478	Ulcer, corneal, local treatment.....	902	and appendages, operation.....	1154	depreciation of.....	656
cold water in.....	1281	gastrogastric, at Mass., Gen. Hosp.....	532, 1088	of.....	1601	hygiene of.....	214, 967
complicating thyroid.....	1649	gastric, operations in.....	721	of.....	1215	following hemorrhage in vitreous.....	1411
complications, celiotomy for.....	92	gastric, remarks on.....	402	of.....	1411	Visit, medico's to Richmond.....	150
death in.....	532	Ulcuration (see proctoscope).....	358	of.....	1411	Vita amara, remedies with.....	328
diagnosis, discussion on.....	1215	Ulcerations of rectum, intolerant.....	1347, 1601	of.....	1411	Vitoe, food value of.....	1087
diagnosis of.....	1478	Ulcers, antinoin in.....	1214	of.....	1411	Voice, American, and catarrh of nose.....	657
diet in.....	721, 1214	bovini for.....	783	of.....	1411	in the wilder.....	595
etiology and diagnosis.....	1215	gastric, hemorrhage from.....	1029	of.....	1411	Volunteer aid work.....	596
eye complications of.....	1281	of.....	1214	of.....	849	Volunteer, gastric.....	1478
hepatic diathesis in.....	1411	of.....	1214	of.....	849	Volvolus, observations on.....	214
hip-joint dislocation in.....	656	of.....	1214	of.....	849	of.....	214
in camps and treatment.....	402	of.....	1214	of.....	849	Vomiting, cyclic or periodic.....	903
in child, treatment.....	215	of.....	1214	of.....	849	of pregnancy.....	150
in Fayetteville.....	150	of.....	1214	of.....	849	Walcher (see posture), Welch's position, case report.....	1087
infection without intestinal lesions.....	903, 967	of.....	1214	of.....	849	War, lessons of and nursing.....	368
in frequent sequelae of.....	29	of.....	1214	of.....	849	medical issues.....	272
in Glen Vulcan, epidemic.....	1281	of.....	1214	of.....	849	medical service of late.....	1155
in Minn. regiment.....	1281	of.....	1214	of.....	849	Warts, chrysolite a specific for.....	92
intestinal antiseptics in.....	1155	of.....	1214	of.....	849	Washing pelvis of kidney, device for.....	328
in very young children, cases.....	1155	of.....	1214	of.....	849	Water a remedial agent.....	402
is trained nurse essential.....	1411	of.....	1214	of.....	849	Buffalo lithia, properties of.....	273
medical treatment for.....	1649	of.....	1214	of.....	849	drinking, purification of.....	214
mortality in 24 cities.....	469	of.....	1214	of.....	849	sterilized, for operating-rooms.....	1029
nutriment therapy in.....	1649	of.....	1214	of.....	849	supply in rural districts.....	850
nursing in.....	1649	of.....	1214	of.....	849	supply of Baltimore.....	903
nutritives in.....	92	of.....	1214	of.....	849	What's the use?.....	656
of long duration.....	215	of.....	1214	of.....	849	Whooping-cough, therapeutics of.....	338
pathology of.....	1539	of.....	1214	of.....	849	with cerebral hemorrhage.....	1214
peculiar phases of.....	1539	of.....	1214	of.....	849	Widal reaction in tuberculosis.....	1087
perforation, in treatment.....	1282	of.....	1214	of.....	849	Widal's test from dried.....	214
perforation, laparotomy for.....	28	of.....	1214	of.....	849	Will, physician's responsibility in making.....	1155
perforation, Widal reaction absent.....	1030	of.....	1214	of.....	849	Witness, rights and wrongs of.....	1281
plea for baths in.....	1215	of.....	1214	of.....	849	Womb (see cancer, uterus).....	1281
plea for better disinfection.....	339	of.....	1214	of.....	849	Woman, industrial position of and health.....	402
pneumonia in.....	657	of.....	1214	of.....	849	diseases of treatment in.....	1539
pneumonia in, early.....	1539	of.....	1214	of.....	849	physician, her future.....	1214
pneumonia, etc., nutritives in.....	92	of.....	1214	of.....	849	physician in official positions.....	338
pneumonia following.....	402	of.....	1214	of.....	849	Women and the professions.....	338
pneumonia and, with tuberculosis.....	150	of.....	1214	of.....	849	Wood pulps for pontilics, etc.....	1030
propagation of.....	150	of.....	1214	of.....	849	Work and limitations, our.....	272, 783
relapse of.....	967	of.....	1214	of.....	849	Worm, tale of a.....	1214
remarks on.....	1601	of.....	1214	of.....	849	Wounds, surgical, closure of.....	1282
report of two cases.....	469, 1087	of.....	1214	of.....	849	visceral, sutural closing of.....	532
submaxillary gland swelling in.....	214	of.....	1214	of.....	849	X-rays (see hnm, calculi, chest, children, divergence, head, laryngology, Roentgen, stomach), Xanthoma, nature of.....	215
tubercular.....	783	of.....	1214	of.....	849	Xeroform in army surgery.....	468
surgical complications.....	532, 533, 595	of.....	1214	of.....	849	Yellow fever, bacillus lateralis and.....	532, 967
symptoms and diagnosis.....	402	of.....	1214	of.....	849	bacteriology of.....	1539
toad a vehicle of.....	1029	of.....	1214	of.....	849	depopulation of towns.....	214
treatment and feeding.....	1347	of.....	1214	of.....	849	to.....	1088
treatment and medical complications.....	92	of.....	1214	of.....	849	facts about.....	1088
treatment at Ft. Monroe.....	215	of.....	1214	of.....	849	digestive tract.....	850
treatment, complications, sequelae.....	29	of.....	1214	of.....	849	in 1879.....	783
treatment, modern.....	1029	of.....	1214	of.....	849	in Va.....	1281
treatment of 43 cases.....	469	of.....	1214	of.....	849	source in U.S.....	1215
treatment of intestine in.....	1282	of.....	1214	of.....	849	specific cause.....	469, 721
treatment of practical.....	783, 1155	of.....	1214	of.....	849	(see also calentura, Cuba, salol, potassium, bitartrate, sorum, smallpox).	
treatment, of specific.....	1214	of.....	1214	of.....	849		
tuberculosis following.....	967	of.....	1214	of.....	849		
urticaria in.....	1411	of.....	1214	of.....	849		
walking case, of death.....	1601	of.....	1214	of.....	849		
Widal's test from dried blood.....	214	of.....	1214	of.....	849		
with perforation, operation, recovery.....	402	of.....	1214	of.....	849		
with intense reactions.....	339, 1214	of.....	1214	of.....	849		
with ulceration of esophagus.....	850	of.....	1214	of.....	849		
Zyphomalarial fever.....	468, 903	of.....	1214	of.....	849		

INDEX OF AUTHORS.

- Aarop, Chas. D., 1155.
 Abbe, Robert, 468, 783.
 Abbott, A. W., 1411.
 Abbott, E. J., 721.
 Abbott, G. F., 1487.
 Abbott, Maud E., 849.
 Abbott, W. C., 1087.
 Abernathy, J. C., 1214.
 Abrahamson, I., 92.
 Abrams A., 151, 215, 468, 489, 657
 967, 1029, 1214, 1601.
 Aht, A., 1601.
 Acker, G. N., 849, 1029.
 Adelsr. J. H., 850.
 Adams, E. H., 1539.
 Adams, F. J., 1478.
 Adams, J. G., 849, *1509, 1539,
 1572.
 Adams, E. P., 402, *1585.
 Adams, W. T., 1029.
 Adolphus, J., 150, 532.
 Alken, J. M., 328.
 Aikken, Chas. W., 1029.
 Aiken, G. H., 1478.
 Aldi, M. A., 338.
 Albright, I. N., 656.
 Aldrich, A. G., 783, 849.
 Aldrich, C. J., 595, 1282, 1411.
 Aldrich, T. B., *777.
 Alger, E. M., 28.
 Alkire, H. L., 92.
 Allahan, J. E., 1338.
 Allen, C. L., 721.
 Allen, D. F., *258, 783, 967, 1029,
 1030.
 Allen, E. S., *1143.
 Allen, F. Y., 1087.
 Allen, J. M., 967, *1070.
 Allen, G. M., *1087.
 Allen, W. H., 215.
 Allison, C. C., *24, 1410.
 Allport, F., 468, 1154, *1528.
 Allyn, G. W., 532.
 Alvard, A. W., 272.
 Ambler, C. P., *64.
 Amos, W. F., 29.
 Anders, H. S., 533, 849.
 Anders, J. M., 1391.
 Anderson, A., 1088.
 Anderson, A. B., 1410.
 Anderson, B. P., 428.
 Anderson, C. H., 215.
 Anderson, E. C., 656.
 Anderson, J. H., 656.
 Anderson, J. T., 272.
 Anderson, F., 402.
 Anderson, W. S., 721.
 Anderson, W. V., 1155.
 Andrews, E. W., 1029, 1155, 1281,
 1601.
 Andrews, J. W., 1410.
 Andrews, N., 1087.
 Andrus, N. L., 272.
 Angle, E. J., 1410.
 Apostoli, G., 783.
 Appel, T. E., 469.
 Archibald, F. E., 468.
 Ard, F. C., 273.
 Arnold, H. D., *139.
 Arnold, J. D., 92.
 Aronstam, N. E., 721, 1410
 Arwinge, J. T., 967.
 Asay, J. L., 1088.
 Ashton, W. E., 1347.
 Ashton, R., 1347.
 Ashby, T. A., 850, *1191.
 Ashhoff, L., 850.
 Ashmead, A. S., 721, 1347, 1649.
 Atwood, F. C., 1478.
 Austin, A. E., 1478.
 Austin, Mabel F., 1478.
 Ayres, D., 1539.
 Ayres, S. C., *1249.
 Austin, J. R., 1478.
 Ayres, K. G., 1088.
 Ayers, E. A., 92, 338, 402, 1214.
 Babeock, R. H., 215, *338, 656,
 1649.
 Babeock, W. L., 1347.
 Babeock, W. W., 902, 1155, 1214.
 Bach, G. W., Jr., 849.
 Bach, J. A., 214.
 Bach, L., 338.
 Bacon, E. K., 721, 1649.
 Bacon, G. R.
 Bacon, J. N., *717.
 Bacon, L. W., Jr., 1347.
 Baker, J. R., 28, 92.
 Baesulmer, Ch., 1987.
 Bagley, E. H., 721.
 Baier, F., 850.
 Baier, F. C., 1411.
 Bailey, G. L., 1088.
 Bailey, H., 656.
 Baird, T. M., 1347.
 Baird, James B., 1281.
 Baker, A. R., 1077, 1252, 1478.
 Baker, E. T., 533.
 Baker, F., 214.
 Baker, F. H., 1282.
 Baker, S. C., 1281.
 Baker, T. H., 967.
 Balantyne Bertha L., 272.
 Baldwin E., 1215.
 Baldwin, L. G., 783.
 Baldy, P. M., 1214.
 Balabenoff, I. P., 1411.
 Ballard, J. F., 1478, 1602.
 Baldwin, S. E., 1539.
 Ballantyne, J. W., 967, *1245,
 1347.
 Ball, F. P., 656.
 Ball, J. M., 92, 150, 595, 1155,
 1411, 1539.
 Ball, M. V., 1214.
 Ball, S., 721.
 Ball, Wm. E., 783.
 Ballard, H. E., 1281.
 Ballenger, W. L., *399.
 Bamberger, H., 215.
 Bane, Wm. C., 595, 967.
 Bankston, R. C., 656.
 Banhart, J. H., *129.
 Barber, Wm., 850.
 Barber, W. L., 1601.
 Barbour, L. P., 402, 1281.
 Barbour, P. F., 214, 272, 533.
 Barclay, W. F., 596.
 Barclay, W. F., 596.
 Bardell, L., 1478.
 Barkan, A., 338.
 Barker, L. F., 1411.
 Barker, L. L., 656.
 Barlow, W. J., 1478.
 Barnes, A. C., 902, 1281
 Barnes, A. S., 1214.
 Barnes, F., 721.
 Barnes, H. E. W., 1029.
 Barnes, J. L., 656.
 Barney, Geo., D., 215.
 Barnhill, J. U., 1088.
 Barrick, E. J., 967, 1214.
 Barrow, D., 151.
 Bartholow, R., 1215.
 Bartlett, W., 92, 151, 1282.
 Bartley, E. H., 783.
 Barton, J. L., 783.
 Baruch, H. B., 532.
 Baruch, S., 28, 150, 272, 532.
 Barry, Wm. F., 1282.
 Barch, S., 1030.
 Baskett, N. M., 150, 595.
 Bassett, Mary E., *827.
 Bessler, A., 215.
 Bate, R. A., 905, 1601.
 Bates, F., 469, 1281.
 Bates, M. E., 1214.
 Bates, W. H., 338.
 Baughman, J. A., 468.
 Baum, Wm. L., 450.
 Baxter, R. A., 1410.
 Baylor, G. W., 469.
 Beach, Wm. M., 532, *632.
 Beach, W. M., 1649.
 Beard, C. H., 150, 595, *1254.
 Beard, R. O., 92.
 Beates, H., Jr., 1539.
 Beaudoix, H. A., 402.
 Beazley, W. S., 721.
 Beck, Carl, *446, 721, 783, 850,
 1029, 1601.
 Beck, E. C., 272.
 Baughman, J. H., 1601.
 Beck, H., 1155.
 Beck, H. G., 849.
 Becker, H. A., 1601.
 Beckett, H. C., 1601.
 Beede, S. C., 902.
 Beeman, M. I., 656.
 Beers, N. T., 721.
 Beery, J. E., *598.
 Behrend, E. B., 92.
 Belcher, H. E., 1411.
 Bell, James, 1214.
 Bell, J. M., 272.
 Bell, J. W., 1087, *1136, 1155.
 Bell, R. H., 1347.
 Bell, S., 1155.
 Bell, W. H., 1347.
 Bell, W. J., 1478.
 Bellinger, P. L., 214.
 Benedict, A. L., 338, 656, 657, 783,
 967, 1214, 1411, 1601.
 Benjamin, A. E., 1214.
 Bennett, A. L., 29.
 Bennett, T. J., 1087.
 Benton, J. B., *131.
 Berg, H. W., 1649.
 Berkey, D. H., 402.
 Berkley, H. J., 783.
 Bernays, A. C., 402, 532, 556, 1214,
 1215, 1281, 1282, 1348,
 1411.
 Berndt, D. A., 1649.
 Bernhelm, A., 338.
 Berry, W. T., 1601.
 Bertold, W. H., 402.
 Besemer, H. B., 1649.
 Besore, A. M., 1087.
 Bevan, A. D., 214, *333, 595, *773,
 1154.
 Beys, Henry D., 1087.
 Beyer, H. G., 214.
 Bibb, R. H. L., 1410.
 Bicknell, F. T., 402.
 Bicknell, G. H., 150.
 Bidwell, L. A., 721.
 Ble, V., 1030.
 Bigelow, E. E., 850.
 Bigelow, S. M., 469.
 Biggs, G. F., 1478.
 Biggs, H. M., 273, 339, 1281.
 Billings, Frank, *2, *760, 1154.
 Billings, J. S., Jr., 903.
 Billingslee, J. H., 1539
 Binnie, J. F., 1539
 Bird, J. S., 902.
 Bird, J. W., 1087.
 Bishop, Rev. C. M., 783.
 Bishop, L. F., *633.
 Bissell, Helen W., 1029.
 Rize, L. A., 783, 1411.
 Blair, B. H., 1411.
 Black, C. E., 338, 532, 1347.
 Black, M., 1087.
 Black, N. M., 1411
 Blackwood, W. R. D., 532.
 Biallock, W. E., 402.
 Blake, C. J., 856.
 Blake, H. G., 1282.
 Blake, J. B., 903.
 Blake, W. H., 850.
 Blanks, J. H., 452.
 Black, G. M., 151, 656, 783, 1155.
 Black, 1347, 1478, 1601.
 Bleyer, J. M., 402, 721.
 Blincoe, A. G., 532, 1154.
 Blount, J., 338.
 Blodgett, A. T., 903.
 Blount, Anna F., 1601.
 Blount, E. A., 1539.
 Blunne, F., 1478.
 Blumer, G. A., 783.
 Blundell, C. E. M., 1214.
 Boeck, C., 1539.
 Boeckmann, I., 150.
 Boenninghaus, G., 468.
 Bokart, W. G., 1411, 1601.
 Boggyess, W. F., 1649
 Boies, E., 532.
 Borden, W. L., 1347.
 Boies, E., 1410.
 Bolton, M., 656.
 Bolton, P. R., 468, 1539.
 Bombaugh, C. C., 902.
 Bond, A. K., 99, 1030.
 Bonnell, C. K., 28.
 Bonfield, G. L., *508.
 Bonney, S. G., 903.
 Boody, Geo., *573.
 Boogher, J. L., 1410, 1649.
 Booth, C. C., 1601.
 Booth, B. S., 1029.
 Borck, E., 967.
 Borrilo, D., 1281.
 Bosher, L. C., 721.
 Boston, L. N., 657, 1215.
 Boswell, C. J., 595.
 Bosworth, F. H., 1347.
 Bostwick, A. L., *820, 1029, 1281.
 Bostland, P. D., 850.
 Bovard, D., 92, 902.
 Bovée, J. W., 92, *268, 850, 1154,
 1601.
 Bowditch, W. Y., 29, 967.
 Bowen, J. T., 783.
 Bowers, W. C., *568.
 Bowler, C. S., 1411.
 Dowles Marion K., 1411.
 Boyd, B. Y., 468, 783.
 Boyd, P. D., 92.
 Boyd, H., 1411.
 Boyer, A. I., 850.
 Bracken, H. M., 1281.
 Brackett, E. G., 596, 850.
 Bradford, E. H., 92, 93, 151, 339,
 569, 1030, 1281.
 Branth, J. H., 783.
 Brasher, L. B., 1087.
 Brannon, Anna M., 338.
 Brantley, A. W., 1087.
 Brantley, J. F., 1410.
 Bremer, L., 850.
 Brennan, E. F., 1539.
 Bricker, S. M., 402, 1214.
 Brigham, F. L., 1649
 Brill, N. E., 532.
 Brinton, J. H., 1155, 1478.
 Brodick, C. H., 1214.
 Brodnax, B. H., 967.
 Brokaw, W. F., 1214.
 Brownell, J. R., 849.
 Brooks, F. D., 402.
 Brooks, H., 468.
 Brooks, W. A., 469.
 Brozberg, P., 150.
 Broome, G. W., 722.
 Brose, L. D., 468, 595.
 Brothers, A., 533, 656.
 Broth, S. F., 1039, 1088.
 Brower, D. R., 532, 783, 1282,
 *1334.
 Brown, G. V. L., *57.
 Brown, J. E., 469.
 Brown, J. P., 1214, 338.
 Brown, P. K., 468.
 Brown, J. Y., 1540.
 Brown, S., 272.
 Brown, T., 532.
 Brown, Wm. D., H., 150.
 Brown, W. L., 402, 721, 1347.
 Brown, W. S., 1478.
 Browne, B. E., 595.
 Browne, F. C., 150.
 Browne, J. S., 1478.
 Browne, L., 596.
 Brownrigg, A. E., 1539.
 Brownson, T. G., 532.
 Brubaker, J. G., 151.
 Brumwell, J. D., 469.
 Bruner, W. L., 1029, 656.
 Brunner, F. E., 532.
 Bruns, H. D., 150, 1281.
 Brunson, R., 1411.
 Brush, A. C., 1029, 1539.
 Brush, E. C., 29, *528, 1030, 1528.
 Brush, E. W., 1214.
 Brush, G. W., 783.
 Brush, E. C., *1526.
 Bruyere, J., *462, *525, *588, *649.
 Bryan, J. H., *1197, 1478.
 Bryan, F. F., 1601.
 Bryant, E., 272.
 Buchanan, J. D., 469.
 Buckley, C. P., 338, 1088.
 Buford, G. G., 150.
 Bulette, W. L., 1347.
 Bullock, I. D., 656, 1088, *1598.
 Bull, C. S., 215, 657.
 Bullard, F. W., 402.
 Bullard, J. W., 338.
 Bullard, W. L., 92, 1215.
 Bullitt, J. B., 595.
 Bulson, A. E., 532.
 Bunker, H. A., 656.
 Eunts, F. E., 967, 1087, 1214.
 Burcham, H. C., 1029.

- Burdeto, A. L. 1155.
 Burke, W., 214, 721, 903.
 Burnett, Anna, 656, 1411.
 Burnett, C. H., 849.
 Burnett, S. G., 338.
 Burnett, S. M., 468.
 Burnham, G. H., 1281.
 Burns, T. M., 338.
 Burns, W. B., 532, 783.
 Burr, A. H., 902.
 Burr, A. N., 656.
 Burr, C. W., 214, 1087, 1088, 1347.
 Burrage, W. L., 1215, 1282.
 Burrall, F. A., 215.
 Burrell, H. L., 902.
 Burton, W. E., 1214.
 Bush, O. B., 214, 656.
 Busdraght, T. B., 1478.
 Butler, F. A., 1410.
 Butler, G. F., 468, 850, *1256.
 Byford, H. T., 338, *641, 783.
 Byrne, Annie H., 1281.
 Cabot, A. T., 783.
 Cabot, F., 903.
 Cabot, F. C., 469, 1540.
 Caddy, A., 468.
 Calzer, E. F., 1087.
 Caille, A., 402, 7029.
 Calderon, A., 1347.
 Caldwell, J. A., Jr., 1155.
 Caldwell, J. J., 902.
 Calhoun, A. W., 657.
 Calvert, Wm. J., 902.
 Cameron, I. R., 967, 1214.
 Campbell, F. P., 92.
 Campbell, O. B., 532, 721.
 Campbell, W. A., 272.
 Candfield, Wm. B., 783.
 Cannady, C. H., 1145.
 Cantrell, J. G., 1659.
 Cantwell, F. V., 1281.
 Capp, C. M., 783.
 Capps, E. D., 1029.
 Capps, J. A., 721.
 Carnart, W. H., 1347, 1601.
 Carpenter, E. T., 432.
 Carpenter, G. T., 783.
 Carpenter, Julia W., *835.
 Carr, W. P., 849.
 Carrier, A. E., 532.
 Carroll, J. P., 92.
 Carroll, Jas., 721.
 Carroll, R. S., 272.
 Carsoo, M. F., 850, 903, 1478.
 Carson, S. C., 967.
 Carstens, J. H., 469, 1478.
 Carter, G. H., 273.
 Casagrande, M., 1649.
 Casagrandi, O., 1155.
 Case, C. E., 721.
 Case, J. A., 1030.
 "Casey," 535.
 Cassetday, F. P., 1087.
 Casseberry, Wm. E., 657.
 Cattermole, G. H., 1411.
 "Carnalt, W. H., 1347, 1601.
 Ceell, J. G., 1029.
 Cea, A., 1355.
 Center, Chas. D., 215, 783.
 Chadwick, H. J., 595.
 Chagnon, E. P., 1347.
 Chambers, G., 532, 1601.
 Chambers, T. R., *1146.
 Champton, W. L., 29, 469, 1478.
 Champlin, S. H., 214.
 Chance, H. C., 214.
 Chandler, H. B., 967, 1215.
 Chapin, H. B., 215, 462, 1029, 1215.
 Chapin, H. D., 1601.
 Chapin, J. B., 1347.
 Chapman, A. L., 1411.
 Chapman, G. C., 402.
 Chapman, H. J., 402.
 Charles, J. J., 469.
 Chase, A., 902.
 Chase, C., 1281.
 Chase, J., 902.
 Chase, R. H., 1347.
 Chase, W. B., 1154.
 Cheatham, G., 902.
 Cheatham, Wm., 215.
 Check, E. A., 850.
 Chessman, Wm. S., 532.
 Cheney, F. E., 1539.
 Cheney, Wm. F., 29, 533.
 Chenoweth, W. J., 156, 215.
 Chenoweth, W. T., 1281.
 Chester, F., 1601.
 Chew, R. S., 721.
 Chew, S. C., 29.
 Chittenden, R. H., 150.
 Chmelbeck, J. F., 402.
 Christian, R. B., 657.
 Christy, T. C., 732.
 Church, A., 1154.
 Church, B. F., 214, 1214.
 Church, W. F., 783.
 Chute, A. L., 1030.
 Claiborne, J. H., 1411.
 Clark, C. F., *1287, 1478.
 Clark, C. E., 338, 902.
 Clark, E. B., 783.
 Clark, F. S., 272.
 Clark, T. C., 1155.
 Clark, P. H., 1154.
 Clarke, A. P., 1478.
 Clarke, G., 902.
 Claws, W. J., 657, 1029, 1155.
 Clausen, J. M., *398.
 Clayton, Mary, 468.
 Cleghorn, A., 214.
 Clements, Jos., 532.
 Clemesha, J. C., 721.
 Cleveland, C., 1281.
 Cline, J. W., 902.
 Cline, L. G., *771.
 Clinton, M., 721.
 Cobb, C. M., 159, 339.
 Cobb, F. S., 29.
 Cobb, J. O., 1088.
 Cochran, J. P., 783.
 Coe, H. C., 29, 92, 151, 1478.
 Cochill, J. G. S., 656.
 Cole, C. S., 92.
 Cole, G. L., 456, 1478.
 Cole, W. F., 902.
 Coleman, J. E., 1649.
 Coleman, T. D., 1155.
 Coleman, W., 215.
 Coles, S., 849.
 Coley, W. B., 721, 1215.
 Collins, Jos., 92, 151.
 Colter, L. S., 903.
 Compton, J. W., 29.
 Conklin, E. G., 783.
 Conklin, W. L., 657.
 Connell, W. T., 1281.
 Conor, J. O., 1539.
 Conway, D. W. B., 903.
 Cook, S. E., 338, 902.
 Cooke, A. B., 92, 214, 339, 721.
 Cooldige, A., Jr., 903.
 Cooldige, F. S., 272.
 Coombs, G. H., 1215.
 Cooper, J. H., 1029.
 Copeland, E., 532.
 Coplin, W. M., *1029.
 Cordell, E. F., 29, 902, 1479, 1539.
 Cordier, A. H., 215, 1214.
 Cordle, F., 1478.
 Corral, I. H., 1411.
 Corlett, W. T., 1029.
 Corning, J. L., 1649.
 Corson, E. R., 214.
 Costner, Thos. F., 595.
 Coston, H. R., 402.
 Cote, M. M., 1214.
 Cotton, A. C., 1029, 1601.
 Coughlin, R. E., 1539.
 Coulter, F. E., 1601.
 Coulter, C. W., 721.
 Coulter, J. H., 656, *767.
 Councilman, W. T., 783.
 Courtenay, E., 339.
 Courtney, J. W., 1215.
 Cousins, J. W., 402, 469.
 Cozits, J. A., 28, 1214.
 Cowles, E., 783.
 Cox, C. N., 339, 1539.
 Cox, G. H., 1649.
 Cox, G. W., *634.
 Cox, W., 722.
 Cox, W. J., 1478.
 Cozzolino, V., 1029.
 "Cradock, C. G., 1649.
 Craig, J. D., 1029.
 Craig, T. C., 595.
 Cranch, E., 656.
 Crandall, P. M., 1347.
 Creel, M. P., 1347, 151, 338, 532, 783, 902, 1029, 1601.
 Crofford, T. J., 1601.
 Cross, W. W., 1478.
 Crombie, A. C., 59.
 Crombie, J. H., 532.
 Crothers, T. G., *888, 1088, 1281, 1347, 1411.
 Crunkshank, R. B., 92.
 Crum, F. S., 469.
 Cryer, M. H., *951.
 Curbertson, J. C., *1258.
 Cumstun, C. G., 92, 150, 595, 721, 783, 1154, 1215, 1539, 1729.
 Cunningham, R. H., 1088, 1155.
 Curran, G. R., 1087.
 Currie, J. Z., 1348.
 Currier, A. F., *825.
 Curry, J. J., 1411.
 Curtis, R. G., 721.
 Curtis, R. P., 29.
 Curtis, H. H., 1602.
 Cushing, C., *270, 1478.
 Cushing, E. W., 338.
 Cushing, H., 902.
 Cushing, H. W., 273, 1029.
 Cusby, A. R., 849.
 Cuthbertson, Wm., 272.
 Cutler, E., 850, 902.
 Curtis, H. E., 967, 1214.
 Dabney, S. G., 1088.
 DaCosta, J. M., 500, 532, 1539.
 Dade, C. T., 214.
 Daggett, B. H., 1539.
 Danland, J., 1347.
 Daby, J. W., 1411.
 Daily, Jos., 214.
 Dalrymple, W. H., 1478.
 Dalton, W. R. I., 595.
 Dana, C. L., 29, 1214, 1348, 1411, 1601.
 Dandridge, N. P., 214.
 Danforth, L. N., 1029.
 Dannaker, C. A., 1214.
 Dannaker, C. C., 468.
 Dantzier, M. J. D., 656.
 Darrier, H., 902.
 Darling, E. A., 657, 722.
 Darrington, John, 1088.
 Davenport, F. H., 657, 1039.
 Davidson, A. D., 902.
 Davidson, A. C., 214.
 Davidson, Chas., 1601.
 Davidson, J. P., 159, 1601.
 Davis, B., 33, 339, 595.
 Davis, C. G., 1087.
 Davis, E. C., 1087.
 Davis, E. P., 28, 402.
 Davis, J. T., 29.
 Davis, N. S., *73, 1281.
 Davis, S., 93.
 Davis, T. A., 902.
 Davis, T. D., 656.
 Davis, W. E. B., 967.
 Dawbarn, R. N. M., 215.
 Day, C. B., 272.
 Day, L. W., 214.
 Dean, L. W., 92, 1411.
 Deane, L. C., 1088.
 Deardorff, A. G., 338.
 Deaver, John, *197, 272, *447.
 DeBeck, D., 722, 783.
 DeBoles, Thos. A., 1155.
 Decker, G. E., 1478.
 Deering, A. A., 850.
 DeLafield, F., 29.
 DeLaney, J. H., 338.
 Delap, S. P., 468.
 Delee, J. B., 468, 656.
 Dench, E. B., 29, 721.
 Dennis, C., 1087.
 Dennis, C. F., 92.
 Dennis, F. S., 850, 903.
 Dennis, J. U., 596.
 Dennis, W. A., 1281.
 Denny, F. P., 214.
 Derwin, F. N., 29, 721.
 Deutsch, W. S., 29.
 de Schweinitz, G. E., 1478.
 D'Evelyn, F. W., 402.
 Devine, E. T., 29.
 Devine, Wm. H., 533.
 Devine, W. S., 1410.
 Devroe, A., 402.
 DeVries, J. C., 783.
 Dewey, R., 1347.
 deWitt, W. H., 1087.
 de Youamba, A., 339.
 Diel, W. H., 1155.
 Dickey, W. A., 339, 468, 902, 1601.
 Dickinson, E. E., 849.
 Dickinson, E. T., 595.
 Dickinson, R. L., 28, 338.
 Dickinson, W. H., 1087, 1214.
 Dickson, C. R., 1214.
 Didama, H. P., 1281.
 Diller, T., 532.
 Dilworth, W. D., 214.
 Dimmer, F., 1087.
 Dixon, A., Jr., 902.
 Dobbin, G. W., 402, 656.
 Dock, Geo., *218.
 Dodd, W. S., 1029.
 Dodds, W. T. S., 1601.
 Dodson, J. M., 1087.
 Doherty, D. J., 1281.
 Doherty, W. B., 1155.
 Dolgonoff, W., 1087.
 Donald, W. M., 1154.
 Donaldson, F., 1539.
 Donovan, J. A., 1154, 1411.
 Donayer, E. A., 656.
 Dorland, W. A., 272.
 Dorsett, W. B., 29.
 Doty, A. H., 596.
 Douglas, B., 657.
 Douglas, C. J., 1155.
 Douglas, R., 1281, 1411.
 Dowd, J. L., 1539.
 Dowling, F., 29.
 Downes, A. J., 92, 1649.
 Doyle, Wm. J., 339.
 Drake, N. A., 532.
 Draper, F. W., 1087.
 Drayer, L. P., 1410.
 Drew, C. A., 721.
 Drenillard, Louise, 1087.
 Drummond, W. B., 29.
 Duane, A., 338.
 Dudley, E., 656.
 Duenas, L., 1601.
 Duff, J. M., 1478.
 DuFour, C. R., 595.
 Dugan, R. C., *895.
 Dugan, W. C., 1539.
 Dukeman, W. D., 1347, 1602.
 Duncan, J. A., 1539.
 Dundore, C. A., 92.
 Dunham, J. D., 903.
 Dunham, T., 1087.
 Dunham, R. L., 1087.
 Dunn, J., 1155.
 Dunn, J. H., 1411, 1539, *1637.
 Dunning, A. W., 596, 1029.
 Dunning, L. H., *1278, 1478.
 Dunsmore, F. A., 339, 721, 849.
 Hyde, C. B., 1214.
 Dyer, I., 967, 1347, 1539.
 Eagleson, J. B., *1588.
 Eagleson, S. P., 150.
 Earle, F. B., 783, 1087.
 Early, J. L., 214, 272.
 Earp, S. E., 967.
 Eastburn, W. W., 1087.
 Eastman, B. D., 656, 721.
 Eastman, B. L., 721.
 Eastman, J. R., 849.
 Eastman, W. C., 1478.
 Eaton, F. B., 92, 902.
 Eaton, G. L., 1214.
 Ebricht, E. D., 1411.
 Eccles, R. G., 595, *713, *1646.
 Eckard, E. M., 272.
 Eckley, W. T., 902, 1087, 1281, 1601.
 Eckman, P. N., 1155, *7.
 Edebohls, G. M., 1411.
 Edes, R., 533, 1649.
 Edgar, J. C., 967.
 Ederger, J. P., 92.
 Edsall, F. H., 1347.
 Edson, B., 1347.
 Edson, C. E., 339, 1410.
 Edwards, G. P., 533.
 Edwards, L. E., *963.
 Egan, Chas., 1087.
 Egan, J. A., 1029.
 Eggerd, A., 402.
 Ekborn, Max., 339, 783, 1155, 1411.
 Eiseendracht, D. N., 656, 902, 1029, 1281, 1282, 1410.
 Eitel, G. C., *263, 783, 849.
 Elder, J. M., 1214.
 Eiferston, E. E., 903.
 Elgood, C., 1214.
 Elliot, E., 214.
 Elliot, G., 28.
 Ellenwood, C. N., 902.
 Elliott, A. R., *134, 215.
 Elliott, G. H., 967, 1214.
 Ellis, A. C., 850.
 Ellis, A. G., 29.
 Ellis, C. A., 1281.
 Ellis, F. W., 595.
 Ellis, J. N., 850.
 Ellis, R., 215, 657, 1282.
 Elmsberg, C. A., 1282.
 Elmer, H. L., 28, 633.
 Elsworth, R. C., 1214.

- Ely, J. D., 783, 1214, 1539.
 Ely, J. W., 1649
 Ely, Wm. S., 532
 Emmet, John P., *396.
 Engelhart, G. F., 468.
 Engemann, Rosa, 468, 783.
 Engman, M. E., 1154, 1282, 1539.
 Entson, A., 92
 Erich, L., 967.
 Eskhar, A. A., 150, 1410.
 Eskildson, R. E., 962
 Estes, W. L., 468, 1601.
 Eulenstein, H., 468.
 Evans, O., 1411.
 Evans, T. C., 1539.
 Evans, T. G., 215, 850.
 Evans, W. A., 1539, 850.
 Evans, Z. H., 338
 Ewatts, O., 1039.
 Everett, A. S., 92.
 Ewart, Wm., 902.
 Ewell, J., 721, 1601.
 Eymann, H. C., 272, *515, 595.
 Eyster, G. L., *187.
 Ezell, B. S., 402.
 Fackler, G. A., *253, 1154.
 Fair, H. D., 338.
 Fairbanks, A. W., 1649
 Fairchild, D. S., *811, 850.
 Fairfield, W. J., 532.
 Fairman, C. E., 1215.
 Falk, J. C., 1030.
 Fanoani, A., 595.
 Farber, J. H., *1583.
 Farley, J. W., 657.
 Farnham, A. B., 92.
 Favill, H. B., 402.
 Fee, J., 338.
 Feilchenfeld, F., 92.
 Feild, L. J., 272.
 Field, E. E., 469.
 Field, T. A., 1410.
 Felts, R. L., 849.
 Ferguson, C., 150, 1347, 1601
 Fenton, F., 1214.
 Feonton, H. C., 29.
 Ferguson, A. H., *6, *1275, 1601.
 Ferguson, E. D., 1030.
 Ferguson, F. C., 1029.
 Ferguson, F. U., 967.
 Ferguson, J. P., 469.
 Fernald, W. J., 1601.
 Ferris, E. R., 468.
 Field, E. G., 29.
 Finerty, J. J., 721.
 Finkelppearl, H., *1259.
 Finley, F. G., 1214.
 Finley, Mary J., 402, 1411.
 Finney, E., 29, 902.
 Fischer, C., 1649
 Fischer, L., 272, 595, 1479.
 Fish, H., 214, 895.
 Fisher, E. D., 1247.
 Fisher, H., 595.
 Fisher, J. B., 150.
 Fisher, J. C., 402.
 Fisher, J. C., 656.
 Fisher, W. H., 656, 783.
 Flisk, S. A., 783.
 Fitch, W. E., 656.
 Fltz, G. W., 92.
 Fltz, J. H., 562, 1411.
 Fitzgibbon, C. D., 272.
 Fitzpatrick, C. B., 92.
 Fitzpatrick, T., *450.
 Flagg, F. W., 29.
 Flanagan, T. S., 1410.
 Fleming, C. K., 850.
 Fleming, C. K., *1344, 1347.
 Fletcher, Mrs. A., 902.
 Fletcher, M. H., *585.
 Fletcher, W. B., 214.
 Flich, L. F., 721, 1087.
 Fliesborg, O. A., 1281.
 Flint, E. N., 1087, 1410.
 Floeckinger, F. C., 1347.
 Flower, W. Z., 549
 Floyd, F. M., 907.
 Folken, H. M., 1088.
 Fonde, G. H., 1215.
 Forbes, W. S., 532.
 Forchheimer, F., 721, 1347.
 Ford, A. J., 1214.
 Ford, T. E., 1214.
 Fordyce, J. A., 656.
 Forrest, John, 272.
 Fort, R. E., 1539.
 Fort, S. J., 469.
 Foster, B. H., 1601.
 Foster, Hal, 783.
 Foster, M. L., 1539.
 Foster, W. S., 656.
 P'otheringham, J. T., 214, 1087.
 Fouts, J. H., 595.
 Fowler, G. K., 1029.
 Fowler, R., 533, 1539, 1602.
 Fowler, W. E., 850.
 Fox, C. H., 92.
 Fox, L. F., 903.
 Fox, Wm. H., *808.
 Frankel, J. L., 1001.
 Frankel, Jos., 468, 1087, 1601.
 Fraley, F. J., 1478.
 Frank, J., *132, 150, 595, 721, 850, 1630, 1155, 1601.
 Franks, W. A., 469.
 Fraser, C. L., 656.
 Fraser, R. N., 902.
 Freeman, A. B., 150.
 Freeman, L., 721, 1029, 1087, 1088.
 Freeman, R. G., 532.
 Freiberg, A. H., *522.
 Freer, O., 1154.
 Freidenwald, H., 903, 1214.
 Freidenwald, J., 469.
 Friedrich, Martin, 272, 1087.
 Frick, Wm., 1411.
 Friend, S. H., 339.
 Friese, F. W., 902.
 Friische, L. A., 1029.
 Fritts, C. E., 967.
 Fruitright, J. H., 1601.
 Fry, Dr., 849.
 Fry, F. F., 721.
 Fry, H. D., 595, 849.
 Fry, R. D., 656.
 Fryer, B. E., 956, 967.
 Fukala, W., 595.
 Fulkerson, W. C., 468.
 Fuller, E. M., 967.
 Fuller, Z., 469.
 Fullerton, Anna, 850.
 Fulton, A. L., 1085, 1214.
 Fulton, D., 1539.
 Fulton, J. S., 1215.
 Funck, C. J., 532.
 Furley, C. C., 150.
 Futercher, T. C., 721, 783, *1006.
 Gasse, H., 468.
 Galbraith, Anna M., 1154.
 Galbraith, T. J., 902.
 Gallant, A. E., 1154.
 Gans, E. S., 532.
 Gant, H. A., 214.
 Gant, S. C., 1478, 1540, 1649.
 Garcia, R. D., 1649
 Gardner, C. F., 29, 273.
 Gardner, F. H., 1601.
 Gardner, F. M., 395, 1052, 1410.
 Gardner, C. E., 1411.
 Gardner, Miriam, 533.
 Gardner, R. W., 721.
 Gardner, Wm. S., 469, 1214.
 Garnett, A. H., 28.
 Garratt, G., 1087.
 Garrett, R. W., 1214.
 Garten, M. H., 1410.
 Gartrbright, R. H., 1281.
 Gasser, H., 468.
 Gaston, J. M., 214.
 Gault, H., 902.
 Gayle, V. W., 1155.
 Gaylord, H. K., 150.
 Gehrmann, A., 214.
 German, W. H., 273.
 Gessner, H. E., *1407.
 Getchell, A. C., 151.
 Gibbon, J. H., 469.
 Gibbons, J. M. F., 903.
 Gibbons, R. H., 532.
 Gibbons, V. P., 1155.
 Gibbons, T. C., 1478.
 Gibb-Wishart, D. J., 1214.
 Gifford, H., 967, 1410.
 Gilbert, G., 468, 595, 1155.
 Gilbreath, J. F., *1461.
 Gilford, H., 1087.
 Gillespie, Wm., 1479.
 Gillette, W. J., 1539.
 Gillette, Wm. J., 902.
 Gilliam, D. T., *205, 1478.
 Gilman, A. W., 29.
 Gilstrap, V. P., 656.
 Girard, A. C., 338, 1347.
 Girsadsky, M., 721.
 Glass, J. H., 402.
 Glasscock, S. S., 272.
 Gleason, E. H., 1347, 1649.
 Gleason, Rev. E. J., 532.
 Glidden, C. H., 1539.
 Goelst, A. H., *703, 1601.
 Goeth, R. A., 1539.
 Goffe, J. R., *933, 967.
 Goldman, S. O., 339, 402.
 Goldie, Wm., 532.
 Goldspon, A., *181, 656.
 Goldstein, M. A., 339, 1478.
 Goldthwait, J. E., 469, 596.
 Goler, G. W., 1029, 1348.
 Gollner, Dr., 1601.
 Goodale, J. L., 92, 967.
 Goltman, M., 1411.
 Gordiner, H. C., 1539.
 Gordon, Frank, 1234.
 Gordon, F. T., 3030.
 Gordon, G., 532.
 Gordon, S. C., 533.
 Gordon Cora D., 1215.
 Gossage, A. M., 1214.
 Gossett, W. B., 214, 595, 903, 967.
 Gotthell, Wm. H., 93.
 Gould, G. M., 338, 339, *625, 656, 1214, 1478.
 Gould, E. F., 1601, 1649.
 Gouley, J. W. S., 1215, 1282.
 Gracey, J. A., 338.
 Graham, R., 1478.
 Gradwohl, R. B. H., 339, 402, 967, 1478.
 Gradwohl, R. E., 657.
 Grady, R., 1215.
 Granham, A. B., 214, 532.
 Graham, E. E., 595, 1029.
 Graham, H. G., 903, 967
 Granham, C. R., 903.
 Grant, G. H., 903.
 Grant, H. H., 272.
 Grant, W. W., *567, 595.
 Graves, S. C., 532.
 Gray, R., 532.
 Gray, S. T., 850.
 Greenale, Wm. J., 850, 1155.
 Green, J. T., 967.
 Greene, D. M., 967, *1187.
 Greenleaf, H. S., 695.
 Greenleaf, R. W., 1155.
 Greenleaf, C. R., 1348.
 Greenleaf, E. H., 721, 1029.
 Greenleaf, R. K., 532, 1088.
 Greenvale, F., 1601.
 Greenwood, A., 1411.
 Greir, J. E., 1154.
 Gresswell, C., 695.
 Grey, J. C., 1092.
 Gress, W. B., 695.
 Griffith, R. B., 1281.
 Griffith, J. P. C., 532, 595, 721, 849, 903.
 Griffin, C. F., 1478.
 Griggs, T., 783.
 Grof, G. G., 856, 1411.
 Gross, L., 338, 1154.
 Grosvenor, J. W., 532.
 Ground, Wm. E., 967, 1281
 Grube, W. W., 967, 1087.
 Grunert, C., 1087.
 Guaita, L., 1478.
 Guess, L. M., 903.
 Gutieras, R., *15, 93, 339, 1411.
 Guthrie, J. R., 1087.
 Gwyn, N. B., 338, 468.
 Haaz, D. E., 215, 1281.
 Habbegger, C. J., *1334.
 Hackett, W. A., 1155.
 Haden, A. M., 1478.
 Hadra, E. E., 272.
 Haden, Wm. F., 92.
 Haicht, A. T., *144, 1281, *1577.
 Halght, W. D., 967.
 Halbert, A. C., 1088.
 Hall, C. L., 1281.
 Hall, E., 28, 532, 595, 721, 1281.
 Hall, E. B., 1154.
 Hall, H. O., 1282.
 Hall, J. N., 532, 1347.
 Hall, R. B., *563, 1478.
 Halberg, C. S., 468.
 Halsey, F. S., 1154.
 Halsted, A. E., 783.
 Hamann, C. A., 967, 1214.
 Hamburg, D. J., 469.
 Hamilton, A. McL., 29.
 Hamilton, C., 121, 1478.
 Hamilton, E., 1154.
 Hamilton, E. E., 92, 1154.
 Hamilton, G. G., 1347.
 Hamilton, V. F., 1030.
 Hammond, F. C., 92.
 Hammond, G. W., 1601.
 Hammond, Wm. A., 402.
 Hampson, J. K., 1601.
 Hance, I. H., 272.
 Hancock, F. H., 903.
 Hancock, J. C., 1215.
 Hansell, H. F., 556, 902.
 Hanson, D. S., 595, 1478.
 Happel, T. J., 656.
 Haralson, H. H., 214.
 Haraway, W. E., 214.
 Harbin, R. S., 29.
 Hard, A. D., 150.
 Hardenbergh, D. E., 1411.
 Hare, H. A., 29, 92, 215, 272, 595, 962, 967, 1214, 1602, *1641
 Harberger, S., 595.
 Harrington, A. J., 1214.
 Harrington, C., 1649
 Harrington, F. R., 402.
 Harrington, T. F., 533, 1540.
 Harrington, P., 657.
 Harris, H., 154.
 Harris, M. L., 150, *378, 656, 1281, *1450.
 Harris, T. J., 402.
 Harrison, R. D., 1410.
 Harrison, R., 1029.
 Harrison, R., 1478.
 Harrison, V., 722, 1155, 1281.
 Harsham, Wm. M., *315.
 Hartigan, J. W., 92.
 Hartley, F., 850, 903.
 Hartman, J. H., 150.
 Hartmann, A., 468.
 Hartwig, M., 1601.
 Hartzell, M. B., 721.
 Harvey, T. W., 468.
 Harwood, W. E., 28.
 Hasencamp, C., 533.
 Hastings, R. W., 783.
 Hatch, T. L., 1155.
 Hatfield, M. H., *1333.
 Hathaway, H., 402.
 Haughton, R. F., 338.
 Haven, A. C., *469.
 Hawkes, F., 214.
 Hawley, D. C., 902.
 Hayd, H. E., 1539.
 Hayden, A. M., 1282.
 Hayes, B. K., 92.
 Hay, B. K., 92.
 Hazen, C. M., 1281.
 Heacock, J. W., 92.
 Head, G. D., 783, 849.
 Heald, G. H., 150.
 Heath, Wm. H., 1281.
 Heath, W. H., 1029.
 Heaton, Geo., 1281.
 Heckel, E. B., 967.
 Heffenger, A. C., 272.
 Hefflinger, M. L., 967.
 Heidingsfeld, M. L., 1030.
 Helman, H., 469.
 Heinecke, A. P., 214, 468, 783, 1281
 Heitzmann, J., 338.
 Heikonen, L., 849, *1383.
 Hellman, F. P., 1154.
 Helvie, Chas. A., 215, 902.
 Hemmeter, J. C., 1088.
 Henderson, S. C., 92.
 Henrich, F., 656, *930, 1088.
 Henry, F. P., 150, 849.
 Henry, J. N., 532.
 Henry, R. H., 1029.
 Henry, W. O., 595.
 Henry, W. O., 1539.
 Herald, J., 134.
 Herdman, W. T., 1029.
 Herrick, J. B., 150.
 Herrman, J. D., 1478.
 Hersman, C. C., *638, *709.
 Herter, C. A., 849.
 Herzler, A., 1087.
 Herwisch, C., 1478.
 Herzog, M., 656, 1088.
 Hestle, W. M., 92.
 Heym, A., 1087.
 Higgs, H. F., 215, 273.
 Hibbs, R. A., 1602.
 Highsmith, G. R., 28, 1088.
 Highsmith, J. F., 150.
 Hilbert, P. A., 1347.
 Hightarter, H., 1539.
 Hill, E. C., 29, 595, 1347.
 Hill, E. G., 656.
 Hill, G. E., 596.
 Hill, L. L., 469, 596.
 Hill, R. S., *147, 656.
 Hill, W. B., *395.
 Hillis, T. J., 721.
 Hills, D. E., 339.
 Hills, Wm. B., 469.
 Himmelsbach, G. A., 1029.
 Hinchey, F., 29.

- Hinkel, F. W., 215, 1281.
 Hinsdale, G., 721, 849, 1347.
 Hirsch, Wm., 278.
 Hirsch, J. L., 535.
 Hirst, B. C., 1347.
 Hitchcock, C. W., *1342, 1601.
 Hutchens, A. P., 1087.
 Hiltz, H. P., 468.
 Hobbs, A. G., 850.
 Hobbs, A. T., 214, 358, 783, 902.
 1214, 1281.
 Hockenberry, W. R., 656.
 Hodenpyle, E., 29.
 Hodges, Fred J., 1087.
 Hodges, J. A., 595.
 Hodges, J. H., 1155.
 Holsch, D. A., 28, 783.
 Hoffman, Robt., 1155.
 Hoge, Jr., M. D., 214.
 Hoolbrook, A. T., 402.
 Holden, W. B., 532, 1154.
 Holden, C. A., 967.
 Hosholt, A. W., 1214.
 Hollis, L. W., 595.
 Holloway, J. M., 532.
 Holloway, S. W., 532.
 Holman, J. C., 92.
 Holmes, M. M., *886.
 Holmes, B., *1569.
 Holmes, E. H., 1410.
 Holmes, E. W., 1214.
 Holmes, L. E., 850.
 Holms, R. W., 28, 272.
 Holscher, T. K., 721, 1214.
 Holscher, F., 783, 902.
 Holt, L. E., 595, 1601.
 Holt, L. E., 595.
 Holzhausen, C. H., 1282.
 Holzhaus, 902.
 Humburger, Th., 29.
 Hon, A. W., 29.
 Hoover, G. F., 215, 967, 1214.
 Hopkins, F. A., 3478.
 Hopkins, G., 1281, 1601.
 Hopkins, H. J., 93.
 Hopkins, R., 1281.
 Hopkins, S. A., 272.
 Hopkins, S. D., 595, 1347.
 Hopkins, T. S., 1087.
 Hough, H. J., 1410.
 Horner, F., 1411.
 Horrocks, W. H., 783.
 Horsley, J. S., 215.
 Horwitz, O., 902.
 Hosch, E., 595.
 Hoskins, W. Jr., 1281.
 Hosmer, A. B., 1154.
 Hosmer, Dr., 1347.
 Hotaling, A. S., 469.
 Hotz, F. C., 92, 1154, 1411.
 Hough, C. F., 28.
 Hough, Dr., 1347.
 Hough, T., 272.
 Houghton, E. M., *777.
 House, A. F., *523.
 Howard, J. W., 1214.
 Howard, W. L., 29, 1539.
 Howard, W. T., Jr., 656, 1539.
 Howe, L., 1539.
 Howe, A. C., 1151.
 Howell, J. T., 161.
 Howells, S. Y., *929.
 Howland, Geo. T., 215.
 Howle, W. C., 656.
 Howlett, K. S., 214, 1087.
 Hoyt, F. C., 1539, 1601.
 Hubbard, J. C., 214, 468.
 Hubbard, T., 1029.
 Hubbell, A. A., 1281.
 Hubbell, S. J., 595.
 Huber, P., 903, 1347, 1539, 1601.
 Hudson, W. H., 1478.
 Huggins, C. H., 532, 1410, 1649.
 Hughtel, W. H., 1601.
 Huten, V. H., 29.
 Hull, J. H., 1029.
 Humiston, W. H., *752, 1478.
 Humphrey, J. A., 902.
 Hunkin, S. J., *468.
 Hunner, G. H., 902, *1515.
 Hunter, C. H., 1214.
 Hunter, John, *1214.
 Huntington, T. W., 76, 1478.
 Hunt, F., 850, 967.
 Hurd, H. M., 1347.
 Hutchins, B. M., 29.
 Hutchins, E. E., 902.
 Hutchins, P., 902.
 Hutchinson, E. N., 902.
 Hyatt, H. O., 1155.
 Hyde, B. C., 783.
 Hyde, C. R., 403, 595.
 Hymanson, A., 93.
 Hyndman, E. J., 338.
 Hyson, H. P., 1630.
 Ide, C. L., 721, 1214.
 Ill, B. C., 1478.
 Ingaiss, E. F., 1154, 1281, 1539, 1602.
 Ingersoll, J. M., 902.
 Ingalls, John, 1088.
 Ingraham, H. D., *266.
 Inman, T. G., 92.
 Ireland, R. L., 967.
 Irwin, J. R., 3539.
 Irwin, J. W., 721, 1347, 1601.
 Isaacs, A. B., 530.
 Jarrard, H. P., 849, 1214.
 Jackson, C. R., 1088.
 Jackson, D. P., 967.
 Jackson, E., 150, 469, 656, 850, 1087, *1386, 1478.
 Jackson, H., 533, 1155.
 Jackson, T. W., 1039.
 Jackson, W. J., 657, 1347.
 Jacobs, A., 273, 595, 1214.
 Jacobs, A. G., 1411.
 Jacobson, J. H., 1601.
 Jacobson, J. N., 1214.
 Jango, A. J., 469.
 James, S. C., 1478.
 James, W. B., 29.
 James, Wm. M., 721.
 Janeway, E. C., 535, 1539.
 Jarrrett, Elizabeth, 903.
 Janes, W. K., *1524.
 Jay, F. W., 468.
 Jeffie, S. E., 151.
 Jekls, J. L., 1281.
 Jell, J. W., 347.
 Jely, A. C., 903, 1030, 1153.
 Jenkins, A. J., 1214.
 Jennings, C. G., 532, 902.
 Jennings, M. D., 967.
 Jennings, W. E., 657.
 Jepson, S. L., *1390.
 Jepson, Wm., *950.
 Jewett, G., 92, 468.
 Johns, J. R., 1479.
 Johnson, F. W., 1030.
 Johnson, G. P., 29.
 Johnson, J. C., 214, 850, 903, 1087.
 Johnson, J. E., 469.
 Johnson, J. L., 1029.
 Johnson, J. M., 1282.
 Johnson, J. T., 335.
 Johnson, W. J., 272, 338, 441.
 Johnson, W. L., 967, 1030, 1478.
 Johnston, C. H., 532.
 Jones, A. F., 28, *373, 595.
 Jones, E. A., 469.
 Jones, P. A., 469, 1087, 1601.
 Jones, H. C., 469.
 Jones, J. J., 783.
 Jones, Mary A., 12, 1215.
 Jones, Robt., 215, 1154.
 Jones, R. E., 1155, 1347.
 Jones, T. H., 967.
 Jones, W. A., 1539.
 Jونسكو, T., 468.
 Jordan, W. M., 1214.
 Joslin, E. P., 532, 1088.
 Jova, A. V., 1029.
 Joy, H. M., 721.
 Judd, L. D., 273, 402.
 Jundkins, E. H., 92, 272, 595, 850.
 Judson, A. H., 595, 967.
 Kaufman, G. J., 338.
 Kabb, Geo. B., 215.
 Kallah, R., 1029.
 Kammerer, F., 92.
 Kane, E. O., 1601.
 Kane, H. H., 532, 1411.
 Kaunheimer, G. J., 441.
 Kearney, Eliz. F., 338.
 Keen, W. W., 214, 783, 1282, 1539.
 Keenan, H. C., 657.
 Kelper, G. F., *210.
 Kelson, A. B., 1155, 1347.
 Keller, D. H., 532.
 Kelley, S. W., 532, *892, 1478.
 Kellogg, J. H., 92, 532, 1154, 1539.
 Kelly, A. O. J., 1282, 1348, 1411.
 Kelly, H. A., 595, 721, 849, 1154, 1602.
 Kelly, E. E., 1411.
 Kelly, R., 1154.
 Kelynauck, T. N., 532.
 Kemp, R. C., 1347, 1478.
 Kemper, G. W., H., 1649.
 Kempter, J. E., 657.
 Kennedy, O. A., 1154.
 Kennedy, W. U., 468.
 Kenner, R. C., 29, 92, 215, 272, 721, 1029, 1087, 1088, 1282, 1347.
 Keogh, P. D., 1347.
 Kerley, Chas. G., 1029.
 Kerr, A. A., 1087.
 Kerr, N., 1281.
 Kerr, W. W., 29, 1478.
 Kessler, C., 903.
 Keyes, E. D., 1214.
 Keyes, E. L., Jr., 1539.
 Kibber, C. B., 1601.
 Kierman, J. G., 1410.
 Kirwan, F. G., *83, 850.
 Killough, J. N., 1601.
 Kilmer, S. L., 1030, 1087.
 Kime, J. W., 783.
 Kime, R. R., 92.
 King, A. E., 1601.
 King, E., 1347.
 King, F. B., 1029.
 King, G., 967.
 King, H. M., 351.
 King, J. C., 402.
 King, W. H. H., 533.
 Kinneair, B. O., 273.
 Kinneman, J. G., 1281.
 Kinsman, D. N., 338, 505, 1215, 1539.
 Kirkland, W. A., 1155.
 Kirkpatrick, C., 272.
 Kleeburg, F., 402.
 Kleitsch, G. A., 92.
 Klebs, E. *1620.
 Knapp, H., 151, 335, 468.
 King, J. C., 1030, 1088.
 Knopf, S. A., 850, *1445.
 Knox, R. W., 840, *1445.
 Koerber, P. E., 338.
 Kohl, J., 850.
 Kohler, Q., 783.
 Kollinsky, L., 339, 1088, 1411.
 Kolscher, G., 150, 468, 595.
 Koelle, F. S., 1030.
 Kollock, C. W., 1411.
 Koplik, H., 532, 1029, 1347.
 Korth, E. J., 1154.
 Kraus, F. Jr., 1601.
 Krauskopf, J., 92.
 Krauss, Wm. C., 92, 469, 214, 1029, 1087.
 Kreider, Geo. N., 532.
 Kreisli, F., 159, 272.
 Kreutzmann, H. J., 338, 721.
 Krienes, H., 595.
 Krotoszyner, M., 850.
 Krusen, W., 657.
 Kuhn, E. J., 1154, 468.
 Kuhn, W. F., 1214.
 Kuffewski, W. A., 1601.
 Kuttner, A., 338.
 Lacey, Wm. N., 339.
 Kyle, D. B., 92, 532, *890, 902, 1602.
 Ladd, G. D., 214.
 La Ferte, D., 339.
 Laine, D. T., 92.
 Lamb, D. S., 967.
 Lanchoux, D. W., 1214.
 Landau, J., 468.
 Gander, J. R., 967.
 Landolt, E., 1321.
 Lane, H., 29.
 Landon, F. W., *522, 1087.
 Lang, J. C., 967.
 Langstaff, J. E., 1029.
 Langstaff, L. G., 1029.
 Lankford, J. S., 1601.
 Lankford, L., 1347.
 Lanchoux, E., 402, 532, 1411, 1539, 1601.
 Lanz, P., 656.
 Laplace, E., 1030.
 Larkley, R. M., 1411.
 Larkin, J. H., 151.
 Larned, W., 468.
 Larrabee, R. C., 1215.
 Lartigue, A. J., 339, 722, 903.
 Larnie, F. A., 967.
 Larrabee, F. W., 1282.
 Lathrop, W., 656.
 Laton, W. S., 849, 1155.
 Latta, J. M., 1281.
 Lattimore, R., 656.
 Lauder, E. S., 1687, 1478.
 Lantenbach, Louis J., 92, 532, 1282.
 Law, G., 1029.
 Lawrence, R. H., 903.
 Laws, Wm. V., 1030.
 Lazard, E. M., 1539.
 Leavell, H. N., 771.
 Leavell, H. N., 677.
 Leberman, E. O., 272.
 LeBeuf, L. G., 468.
 LeBoutillier, W. G., 783.
 LeBreton, P., 1231.
 Le Conte, J. N., 850.
 LeConte, R. G., 533, 1155.
 Lee, E. H., 1281.
 Lee, F. H., 658.
 Lee, H. M., 339.
 Leech, J. S., 28.
 Leeb, W., 850.
 LeFebvre, J. P., 28.
 Ireland, G. A., 967, 1214.
 Lemke, A. F., *959, *1023, *1077.
 LeMond, R. F., 1087.
 LeMoyné, Wm., 402.
 Leonard, C. L., 215, 595.
 Leonard, P. L., 150.
 Leslie, O., 150, 967.
 Leslie, C. F., 721.
 Lesser, A. M., 1030.
 Lester, C. A., 3215.
 Leszynsky, W. M., 1030, 1088.
 Levi, A. H. P., 1347, 1649.
 Levi, G., 532.
 Levings, A. H., 1029, 1539.
 Levinger, Fred J., 533, 1087, 1282.
 Levison, C. G., 902.
 Levy, E. C., 1281.
 Levy, Robt., 468, *707, 902.
 Lewis, A. H. N., 1411.
 Lewis, M. J., 1547.
 Lewis, B., 532, 722, 1348.
 Lewis, D., 28, 532, 783, 1029, 1539.
 Lewis, G. G., 215.
 Lewis, H. E., 1088.
 Lewis, H. F., 338, 1281.
 Lewis, J. A., 1154, 1155.
 Lewis, R., 1155.
 Lewis, S., 1602.
 Libby, G. P., 1029.
 Libman, E., 532.
 Lichty, J. A., 656, *837.
 Liddle, E. N., 215.
 Liddle, C. W., 272, 902, 1087.
 Lincoln, C. W., *1534.
 Lindenberger, I., 1347.
 Lindley, W., 721, 850, 1214.
 Link, W. S., 967.
 Linn, T., 1029.
 Linnell, B. M., *19.
 Linsley, J. H., 93, 1088.
 Lipes, H. J., 1088.
 Little, E. G., 1088.
 Lloyd, J., 721, 1087.
 Lloyd, S., 1231.
 Lochboehler, G. H., *1397.
 Lockhart, F. A., 1649.
 Lockhart, J. W., 150, 532.
 Lockwood, T. F., 783.
 Lofgren, D., 532, 1214.
 Long, E. H., *1465.
 Long, F. A., 595.
 Long, H. F., 849.
 Long, J. W., 214, 532, 656, 1087.
 Longaker, D., 92.
 Longyear, W. T., 272, 532, 1478.
 Lord, J. P., 28.
 Lotimer, H. F., 1087.
 Lott, H. S., 92.
 Love, N. B., 656.
 Love, Minnie, T., 595.
 Loveland, B. C., 1539.
 Loving, S., 402, 1539.
 Lower, J. D., 1087.
 Lovry, M. J., 903, 1088.
 Lucas, C. G., 1347.
 Lucid, M., 783.
 Lund, F. B., 1478.
 Lund, Z. J., 150.
 Luster, C. E., 1214.
 Lydston, G. P., *1211, 1282.
 Lydston, J. A., 902, 595.
 Lytle, B. F., 151, 402, 657.
 Lyman, H. M., 532, 1029, 1347, 1539.
 Lynch, J. F., 92.
 Lyon, J. P., *1515.
 Lyons, B. F., 902.
 McAnally, W. J., 92, 656.
 McArthur, L. L., 272, 1154, 1282, *1403.
 McArthur, G. B., 850.
 McBride, A. A., 595.
 McBride, J. H., 903.

- McBurney, C. 1539
 MacCallus, W. A., 1155.
 McCarthy, D. J., 1087, 1347.
 McCaskey, G. W., 214, 902, 903.
 McCaskey, J. H., 214.
 McClhord, R. C., 532.
 McClannahan, H. M., *321, *943.
 McClannahan, J. M., 1087.
 McClintock, C. T., 656.
 McClintock, E., 595.
 McClogan, J. T., 783.
 McConachie, A. D., 850.
 McCoughy, R., 595.
 McCone, F. F., 595.
 McConnell, J. F., *702.
 McCormack, A. T., 903.
 McCosh, A. J., *694.
 McCourt, J. P., 1649
 McCowan, O. S., 469, 1281.
 McCoy, J. C., 1154.
 McCrea, Thos., 902.
 McCurdy, S. L., 532, *1061.
 McDavitt, T., 783.
 McDermott, T. L., 28.
 McDonald, B. A., 1347.
 McFarland, J., 92, 595, *1534.
 McFarlane, A., 595.
 McFarlane, W. A., 273.
 McGaha, J. W., 783.
 McGaha, C. E., 215.
 McGannon, M. C., 238, 1281.
 McGaughey, J. E., 1410.
 McGee, J. B., 272.
 McGraw, T. A., 1029.
 McGuire, F. W., 1539
 McGuire, H., 1411, 1478, 1601
 McGuire, S., 92, 214, 469, 532.
 McHugh, P. J., 902.
 McIntyre, E., 338.
 McKay, N. E., 1214.
 McKenna, H., 1281
 McKenzie, A. P., 1281
 McKenzie, B. E., 214, 402.
 McKenzie, W. W., 92.
 McKim, S. H., 1347
 McKinney, R., 214, 469, 850, 1029.
 McKiven, A. B., 1601.
 McLean, A., 402, 1088.
 McLaren, A., 92, 150.
 McLaughlin, W. K., 1601
 McLahon, T. F., 902.
 McMichael, J. C., 272.
 McMonagle, R., 1539.
 McPhedran, A., 967, 1214.
 McPherson, J. D., 1282
 McReynolds, J. O., 1154, *1385.
 McSwain, I. A., 1029.
 McVey, W. E., 92.
 McGWorter, G. T., 92.
 MacAlester, R. K., 468.
 MacCallum, J. B., 849.
 Macdonald, A., 29, 272, 722, 783.
 MacDonald, C. F., 783, 850.
 Macdonald, G., 902.
 Macdonald, W. G., 92.
 MacLaren, A., 595.
 MacLaren, W. S., 1155.
 MacLenn, H. S., 1478, 1479
 MacLean, F., 272, 1155.
 MacAlester, R. K., 721.
 Mackay, E. H., 657.
 Mackenzie, H., 902.
 Mackenzie, J. J., 150.
 Mackenzie, K. A. J., 656.
 Mackenzie, Wm. R., 902.
 Mackey, A. S., 272.
 Madden, John, 783, 1155.
 Madden, T. M., 469.
 Maher, S. J., 402.
 Mahon, Wm., 1347
 Magie, C. H., 1601.
 Main, O., 402, 907.
 Mauseh, C. O., 1029.
 Makins, C. H., 468.
 Makuen, G. H., 656, 850, *888, 1649.
 Malaby Z. T., 1478
 Mallett, E. P., 402, 595.
 Manasse, P., 850.
 Mannam, C. S., 214.
 Manierre, C. H., 802.
 Manley, T. H., 29, 150, 272, 533, 1281.
 Mann, A., 722.
 Mann, A. J., 150.
 Mann, E. C., 1281.
 Mann, F. J., 1601
 Mann, M. D., 92, 1214.
 Mann, W. A., 1029.
 Mapes, C. C., 402, 783.
 Marble, T. H., 402, 1030.
 Marcy, H. O., *716, *1018.
 Markley, L. R., 1154.
 Marsh, F. O., 339.
 Marks, L. H., 721.
 Marsb, H., 1087.
 Marsb, F. H., 469.
 Marshall, E., 1347, 1411
 Marshall, S. W., *1593
 Martin, C. S., 849.
 Martin, E., 214, 1347, 1478.
 Martin, E. H., 1087, 1601.
 Martin, F. H., 92, 533.
 Martin, J. M., 721.
 Martin, J. N., 532.
 Martin, R. S., 1601
 Martin, T. C., 339.
 Martin, T. C., 92, 272.
 Martin, T. C., 272, 902.
 Marvel, E., 151.
 Marx, Ella., 905.
 Mason, L. D., 532.
 Mason, R. D., 1539
 Massey, G. R., 1029, 967, 1087.
 Matas, R., *240, 1539.
 Mathews, A., 214.
 Matthews, J. M., 28, 92, 272, 468, 169, 1087.
 Mattson, F. F., 338.
 Matton, P. C. E., 214.
 Maury, J. M., 1411
 Maxey, E. E., 1154.
 Maxwell, A., 967.
 Maxwell, J. B., 783.
 May, J. W., 92.
 Mayer, E. E., *945.
 Mayer, Emil, *307, *1381.
 Mayer, L. H., 967.
 Mayo, C. H., 967, 1155.
 Mayo, W. J., *243, 533, 468, 1029.
 Mays, J. J., 902.
 Mazet, C., 1087.
 Means, W. J., *311, 339, 850.
 Meany, W. B., 214, 850, 1649.
 Meek, A., 1214.
 Meeker, G. H., 150.
 Meier, G. H., 850.
 Meigs, J. V., 903, 1539.
 Meigs, E. J., 1281, 1539
 Meley, W. W., 1029.
 Meilger, S. J., 967, 1214.
 Melvin, G. L., 1411
 Menger, R., 1410
 Meriwether, F. T., 1347, 1478
 Mersereau, W. S., 92.
 Merz, C. H., 1215, 1539.
 Metcalf, W. B., 596.
 Metcalf, W. F., 1088.
 Mettler, H. H., 468, 595, 902.
 Meyer, A., 1155.
 Meyer, M., 1002
 Miehaux, J., 1547.
 Michell, R., 656.
 Miller, A., 596.
 Miller, C. D., 1214.
 Miller, C. H., 29.
 Miller, C. J., 29, 1539.
 Miller, D. M., 214.
 Miller, G. B., 28, 903.
 Miller, J. P., 215.
 Miller, J. T., 338.
 Miller, T. L., 1411
 Miller, T. N., *188.
 Millran, K. W., 1539, 1602
 Milligan, J. W., 338.
 Mills, C. K., 1601.
 Mills, H. B., 1087.
 Mills, Jas., 214.
 Mills, J. J., 1601.
 Mills, W. S., 902, 1601.
 Miner, F. B., 339.
 Mink, A. E., 1348
 Minney, J. E., 92.
 Minor, H. A., 850.
 Minor, C. L., 1479
 Mitchell, E., 533.
 Mitchell, E. D., 1029.
 Mitchell, E. W., 1154.
 Mitchell, J. A., 656.
 Mitchell, J. F., 338.
 Mitchell, J. K., 1214.
 Mitchell, L. J., 1029.
 Mitchell, S., 967.
 Mitchell, W. C., 1155.
 Mitchell, W. F., 967.
 Mitchell, W. H., 1214.
 Mixer, S. J., 657.
 Mock, E. V., 1410
 Moeller, T., 92
 Moffit, H. C., 29.
 Moncorvo, Dr., 633, 721, 783, 903.
 Moncrief, W. H., 903.
 Monroe, G. J., 272, 469, 532, 596, 722, 1030, 1602.
 Montague, J. H., 1214.
 Montzambert, F., 1214.
 Montgomery, D. W., 656, 1029.
 Montgomery, E. E., 92, *751, 1155, 1539.
 Montgomery, E. E., 92, *751, 1155.
 Montgomery, L. H., 850.
 Moody, H. A., 272.
 Moore, E. L., 1281
 Moore, F. H., 92, 533.
 Moore, D. L., 92.
 Moore, D. S., 402.
 Moore, E., 657, 721.
 Moore, E. W., 468.
 Moore, J. E., *371, 468, 1281.
 Moore, J. T., 1478.
 Moore, M. L., 850.
 Moore, R. D., 1155.
 Moore, T. W., 29.
 Moran, J. F., 28.
 Morehaus, G. W., 850.
 Moremen, J. S., 1281
 Morgan, E. L., 595.
 Morgan, Geo., 1088.
 Morgan, J. D., *22.
 Morgan, W. V., 1601
 Morgenstern, A., 533.
 Morris, J. C., 656.
 Morris, R. T., *117, 402, 1087.
 Morrison, W. B., 214.
 Morse, E. E., 28.
 Morse, J. L., 402, 1478.
 Morse, W. E., 1539.
 Morse, H. D., 150.
 Morton, D., 468.
 Morton, J. P., 1087.
 Morton, W. J., 1540.
 Moser, B. B., 1281, 1347, 1601
 Moss, R. E., 410
 Moss, V. U., 29.
 Moulin, C. M., 1411
 Moulton, H., 150, 902.
 Moore, J. J., 1087.
 Moyer, C. C., 1410
 Moyer, H. N., 215, 468, 902, 1504, 1601.
 Mueller, V. F., 783, 1155.
 Muirhead, A. L., 902.
 Muirhead, H. J., 29.
 Mullen, J., 856.
 Mullen, J. A., 150.
 Muller, R., 850.
 Mumford, J. G., 1649
 Munde, F. P., 1347
 Mungler, C. F., 239
 Munn, W. P., *1522
 Munro, J. C., 721, 783, 850.
 Munro, E. L., 1348
 Mundoch, F. H., 1029, 1348.
 Murrey, J. B., 1087.
 Murphy, Helen, 1478
 Murphy, J. B., 850.
 Murphy, J. C., 532.
 Murphy, T. J., 1214.
 Murray, F. A. G., 1649
 Murray, G. J., 1479
 Murray, W. R., 1411
 Muskens, L. J. H., 151, 468.
 Musser, J. H., 215, 849, 1410.
 Musson, Emma E., *1329, 1601.
 Muzzy, A. T., 1029.
 Myers, F. C., 1281
 Mylks, G. W., 1214.
 Nagel, J. S., 214.
 Nancrede, C. D., 92, 1029, 1347.
 Napp, A. T., 1029.
 Napier, C. B., 150.
 Natier, M., 902.
 Neely, E. A., 1649
 Neff, J. H., 272.
 Neff, J. H., 1411
 Neimay, G., 1410
 Nelson, D. T., 1015.
 Newcomb, J. E., 721.
 Newell, F. S., 1282
 Newkirk, C. T., 721.
 Newman, H. F., *1457
 Newnam, R., 850.
 Newton, C. B., 150.
 Newton, Geo. W., 1281
 Nichols, A. G., 1539
 Nichols, J. B., 1029, 1479.
 Nicholson, A. M., 532.
 Nicholson, F. J., 849.
 Nicholson, H. G., 533.
 Niles, H. D., *1009, 1601.
 Niles, R. M., 850.
 Nilsen, J. R., 721.
 Nisner, L. A., 214.
 Noble, C., 1649
 Noble, C. P., 151, 595, 856, 902.
 Noble, G. H., 595, 967, 1087.
 Noguera, E. P., 468.
 Norbury, F. P., 1029, 1411, 1478.
 Norton, J. T., 409.
 Norred, C. H., 1410
 Norris, R. C., 402.
 North, J., 215, 1281.
 Northrup, W. P., 532, 1215.
 Norton, C. B., *333.
 Nory, F. G., 850.
 Noyes, F. B., *329.
 Nuckols, M. E., 1030, 1155, 1215.
 Nunee, E. F., 1282
 Nunn, R., 656.
 O'Brien, H. L., 339.
 O'Connor, P. T., 533.
 Ochsner, A. J., *102, 1154.
 O'Daniel, M. H., 1478
 O'Donovan, Chas., 783, 903.
 Oettinger, E. J., 121, 1155.
 Ogston, S. A., 659, 333.
 O'Hare, H., 1411
 Ohlmaecher, A. P., 468.
 O'His, H. G., *121.
 Ohmann-Dumstall, A. H., 93, 902,
 1029, 1214.
 Oliver, C. A., 214.
 Oliver, J. C., *629.
 Oliver, Thos., 1087.
 Onuf, B., 402, 721, 1601.
 Opahus, W., 656.
 Opie, E. L., 849.
 Oppenheimer, S., 469, 1088, 1649.
 Orleman, Dalsy M., 93.
 Osborne, O. T., 28, 1087, 1347.
 Osborn, T. C., 1601
 Osler, Wm., 850, 151, 215, 532,
 1215, 1478.
 Otis, E. O., 402, 850, *1074.
 Otis, W. D., 902.
 Ott, I., 1347
 Ott, Lambert, *26.
 Outch, J., 1029, 1411, 29.
 Overacker, Kate, 272.
 Overend, E. J., 92.
 Overholser, M. P., 783.
 Oviatt, C. W., 1347
 Owen, E., 783.
 Owen, H. C., 1538
 Owens, J. E., 1281
 Packard, F. A., 1029, 1282.
 Packard, F. H., 29.
 Page, C. G., 272.
 Paige, H. M., 656.
 Pailier, E., 783.
 Palmer, A. C., 1411
 Pantzer, H. O., 1087, 1411, 1478.
 Paquin, F., 29.
 Pardee, G. C., 92.
 Pardee, L. C., 272, 1601.
 Park, R., 850.
 Parker, W. H., 1602
 Parker, D. L., *1596
 Parker, F., 1281
 Parker, G., 721.
 Parker, P. H., 214.
 Parker, W. E., 468.
 Parker, W. T., 92, 1478.
 Paschal, F., 902.
 Patrick, Hugh, T., 1029, 1281,
 1601.
 Patterson, A. B., 1087.
 Patterson, Annie H., 1282
 Patterson, C. E., 1214.
 Patterson, F. J., 1539
 Patterson, J., 1030.
 Patton, C. H., 214.
 Patton, G. H., 533, 1410.
 Patton, J. M., 532.
 Patton, W. B., 1347
 Paul, C. M., 1088.
 Paulding, E. L., 1347
 Paulson, D., 532.
 Payne, M. M., 1029.
 Payne, S. T., 92, 214.
 Pearce, C. T., 533, 656.
 Pearce, F. S., 214, 339, 1539.
 Pearce, R., 532.
 Pearce, H. E., 130, *457, 783, 967,
 1539, 1649.
 Pearson, M. M., 1155.
 Peavy, J. F., 659, *517.
 Peckham, A. H., *643.
 Peck, E. S., 903.
 Peckham, F. E., 1153.
 Peeble, T. C., 1030.
 Peers, T. W., 656.

- Penn, G. W., 469, 783.
 Pennington, J. K., 595, 656, 1087,
 128, 1601.
 Penrose, C. A., 468.
 Perry, W. L., 850.
 Perkins, I. B., 1347.
 Perkins, J., 1649.
 Peyer, W., 151.
 Perkins, J. B., 1215.
 Perkins, S. L., 656.
 Perrigo, Jas., 1214.
 Perry, A. W., 28, 1088.
 Peter, L. C., 272.
 Peterson, Fred., *308, 783, 1214.
 Peterson, R., 92, 1281, *1407.
 Petty, C. N., 532.
 Pettyjohn, E. S., 150.
 Pfaff, F., 29.
 Pfaff, O. G., 1478.
 Pfann, G. W., 850.
 Phelps, Chas., 1215, 1347.
 Phelps, R. M., 1029.
 Phelps, W. M., 550.
 Phenix, W. F., 656.
 Phillips, C. M., 92.
 Phillips, F. A., 1601.
 Phillips, T. C., 402.
 Phillips, W. C., 657.
 Pickelars, J. F., 656.
 Pickett, J. T., 1155.
 Pitner, T. J., 532.
 Piatt, W. B., 215, 850, 1282.
 Pliottier, A., 902.
 Polak, J. O., 721, 903, 1281.
 Pollock, Fla., 903.
 Politzer, S., 215.
 Poole, W. H., 783, 1088, 1649.
 Porter, J. W., 721.
 Porter, W., 1639.
 Porter, Wm. L., 903.
 Porter, Wm. H., 903, 1087.
 Portier, W. E., 1478.
 Portnoia, H. B., 1030.
 Posey, Wm. C., 533.
 Potter, H. N., 967.
 Potter, W., 1282.
 Potter, Wm. W., 656, 721.
 Potts, C. S., 1087.
 Powell, C. H., 150, 595, 1478.
 Powers, C. A., 28, 595, 903.
 Poynton, F. J., 1281.
 Preble, R. B., *441, *500.
 Preley, J., 1281.
 Prentiss, D. W., 339, 721.
 Pressay, A. J., *391, 783.
 Pressly, E. M., 29.
 Price, Jos., 1214.
 Price, O. J., 532.
 Priest, E. L., 150.
 Primrose, A., 1539.
 Pritchard, I. W., 468.
 Pritchard, J. F., 468.
 Pritchard, Wm. B., 214, 273.
 Probst, C. O., 1539, 1589.
 Proegler, C., 1281.
 Pryor, 849.
 Pryor, J. H., 150.
 Pryor, S. W., 656.
 Pryor, Wm. H., 849.
 Pudor, G. A., 1155.
 Puntun, John, *82, 150, 532, 721,
 783, 967, 1029, 1281, 1348,
 1410, 1601.
 Pursell, Rev. J. J., 532.
 Purdy, F., 338.
 Purdy, C. W., 595, 656, *762.
 Purloff, S. W., 1649.
 Purrington, W. A., 1540.
 Purslow, G. E., 1087.
 Purvance, J. E., 1029, 1087.
 Pusey, F., 1649.
 Putnam, C. R. L., 150.
 Putnam, J. R., 29, 339.
 Putnam, Jas. T., 273, 967.
 Putnam, T. L., 28.
 Pye, W. L., 92, 338, 656, 902.
 Pychon, E., 967.
 Quinan, C., 1478.
 Quine, Wm. E., 656.
 Rae, A., 150.
 Rafferty, H. N., 1649.
 Ramsay, O. G., 338.
 Ramsour, G. A., 150.
 Rand, L. D., 1601.
 Randall, P. G., *1185.
 Rand, H. F., 1154, 1539.
 Randolph, R., 902.
 Ransholf, Jos., 596, *688.
 Ravogli, A., 656, *1264, 1347.
 Ray, J. M., 721.
 Ray, M., 902.
 Ready, C. F. W., 1281.
 Reagan, E. W., 1154.
 Reber, W., 1411.
 Reed, B., 92, 338, 595, 902, 1155,
 1410.
 Reed, C. A. L., 92, *875, 903.
 Reed, C. B., 272, 468, 1087, 1601.
 Reed, R. H., *814, 902.
 Reed, W., 721.
 Reichard, V. M., 402.
 Reid, W. B., 1601.
 Reik, H. O., 656, 1030.
 Reilly, T. E., 469, 1411.
 Reichart, J. C., 402.
 Remondino, P. C., 902, 1347, 1478.
 Renaud, E. C., 92, 402.
 Keuling, Geo., 721.
 Reuss, J. H., 1601.
 Reynolds, D. S., 532, 1155, 1649.
 Reynolds, E., 469.
 Reynolds, M. H., 402.
 Rice, C. C., 1281.
 Richards, G. L., 338, 402, 468,
 902.
 Richardson, A. B., 1347.
 Richardson, C. H., 29, 1478.
 Richardson, C. W., 902.
 Richardson, D., 150.
 Richardson, J. H., 967, 1214.
 Richardson, M. H., 657, 903, 1088,
 1155, 1215, 1478, 1539.
 Richmond, N. G., 29.
 Ricketts, B. Merrill, *381, 468,
 469.
 Ricketts, E., 1281, 1478.
 Ridge, J., 532.
 Riddon, J., 215, 272, 1154.
 Ries, Emil, 6454, 1281, 1601.
 Riemann, D., 214, 850.
 Riggs, C. E., 850.
 Riley, E. M., 1281.
 Rindlaub, J. H., 539, 402.
 Rinehart, W. T., 1087.
 Riskey, S. D., 28, *757, 850, 902,
 1347.
 Ritter, J. P., 1649.
 Risch, J. F., 532.
 Robb, H., 721, 967.
 Robb, I. H., 368.
 Robbins, C. P., 151.
 Robbins, H. A., 1030, 1088.
 Roberts, D. J., 1029, 1339.
 Roberts, H., 338.
 Roberts, H. H., 595.
 Roberts, J. B., 1030.
 Roberts, W. O., 967.
 Robertson, T. L., 1601.
 Robertson, W. W., 903, 1088.
 Robins, A., 338, 1155.
 Robinson, B., 29, 272, 468, 469,
 657, 967, 1281, 1539, 1601.
 Robinson, F. J., 550.
 Robinson, G., 214.
 Robinson, W. D., 596.
 Rochester, DeL., 1282.
 Rockey, A. E., 339.
 Rockwell, A. D., 1282.
 Rockwell, T. H., 850.
 Rodgers, A. F., 92.
 Rodham, J., 902.
 Rodman, W. L., 1155.
 Roe, J. O., 92, 150.
 Rogers, R., 721.
 Rogers, C. C., 1087.
 Rogers, F. C., 902.
 Rogers, F. L., 656.
 Rogers, J. T., 402.
 Rogers, W. K., 1154, *1527.
 Roier, H., 272.
 Roemer, T. H., 469.
 Root, Ediza, *510, 850.
 Root, E. K., 595.
 Root, J. W., 1214.
 Rooney, R. F., 1214.
 Ropke, F., 468, 850.
 Rosa, A., 402, 902.
 Rosenberg, A., 1087.
 Rosenthal, E., 339, *1521.
 Ross, G. G., 402.
 Ross, J. F., *823.
 Rosenwasser, M., 272, *512, 656,
 1478.
 Rotch, T. M., 967, 1601.
 Rothrock, J. L., 339.
 Rothwell, P. D., 595.
 Rousch, L. F., *580.
 Rowe, F. H., 533.
 Rowell, H. N., 902.
 Roy, D., 533, 469.
 Roy, P. S., 657.
 Royster, H. A., 595, 1029.
 Royster, L. C., 214, 272.
 Rudis-Jenkins, J., 1478.
 Ruedy, R. E., 1347.
 Rugh, J. T., 469.
 Rubrah, John, 469, 1029, 1281.
 Runge, E. C., 272, 783.
 Runyan, J. P., 469.
 Rusby, H. H., 150.
 Russell, G. M., 215.
 Russell, Jas., 721.
 Russell, T. H., 1601.
 Ruth, C. E., *184, *519.
 Rutherford, B. S., 28.
 Ryerson, Col. G., 1214.
 Rykoppel, A. L., 92.
 Sager, B. E., 1088.
 Sailer, J., 215, 967, 1410.
 Salechy, N. M., 402.
 Sallinger, J. L., 1348.
 Sallsbury, J. H., 150, 902, 1601.
 Sampson, F. E., 150.
 Samuel, W., 1154.
 Sanarelli, G., 469, 1539.
 Sanderson, A. J., 92.
 Sanger, P. D., 849.
 Sanson, A. E., 1410.
 Satterthwaite, T. E., 903.
 Sattler, B., 150, 402, 468, 469,
 902.
 Saunders, E. W., 1649.
 Saunders, M. B., 1601.
 Savage, G. C., 1087.
 Sawyer, J. P., *1072.
 Sayre, R. H., 1540.
 Schaecher, E., 272, 967, 1539.
 Schade, J. E., *386.
 Schaefer, F. C., *1313.
 Schaefer, T. W., 783.
 Schamberg, J. F., 595, 1155.
 Scheil, W., 1214, 1601.
 Scheek, A. H., 215.
 Scheppergrell, W., 402, 596, 783.
 Schiller, H., 29.
 Schleich, C. L., 1029.
 Schlossman, A., 1155.
 Schmidt, Rimpler H., 1154.
 Schneck, J., 532.
 Schneer, R. G., 272.
 Schneideman, T. D., *1471.
 Schultz, A., 1087.
 Schultz, W. F. A., 150, 967.
 Schultze, S., 595.
 Schwab, S. J., 151, 722.
 Schwelger, Prof., 595.
 Schwelkerath, K., 903.
 Scott, J. A., 967.
 Scott, J. O., 595.
 Scott, N. S., 272, 468.
 Scott, P., 150.
 Scudder, C. L., 1348.
 Seaman, A. R., 28.
 Searey, J. T., 1347.
 Sears, G. G., 1088.
 Seelye, H. H., 657.
 Seiler, C., 533.
 Sellman, H., 850.
 Sellman, W. A. B., 967.
 Senn, N., 339, 850.
 Servoss, A. G., 29, 1578.
 Sewall, Henry, 1154, 1155, 1410.
 Sexton, J. C., 1348.
 Sexton, L., 469.
 Sexton, M. F., 721.
 Seymour, W. W., 1478.
 Shackleton, W. E., 272.
 Shafer, H., 214.
 Shaif, C. W., 1411.
 Shambaugh, G. E., 272.
 Sharp, J. C., 469.
 Sharp, J. G., 1411.
 Sharpless, W. T., 1155.
 Shaw, A. E., 469.
 Shaw, A. J., 1478.
 Shaw, J. C., 1030.
 Shears, G. P., 1214.
 Shepard, C. H., 532.
 Shepherd, F. J., 1281.
 Shepherd, G. R., 272.
 Sherman, G. H., 721.
 Sherrill, Geo., 1347.
 Sherrill, J. C., 1088, 1347.
 Sherwell, S., 1029, 1347.
 Sherwood-Dunn, B., *1195, 1478.
 Sherwood, F. R., 1281.
 Shick, Mary Ed., 967.
 Shields, E. S., 215.
 Shields, W. B., 272.
 Shields, W. D., 595.
 Shimonek, F., 214.
 Shinaut, J. C., 468.
 Shober, J. B., 395, 849.
 Shober, J. S., 1282.
 Shoemaker, J. V., 92, 215, 272,
 273, 532, 533, 656, 850,
 967, 1087, 1347.
 Shotwell, W. E., 28.
 Shovel, T. J., 1347.
 Shradly, G. F., 273.
 Shurly, E. L., 272.
 Shurtliff, E. C., 1214.
 Sidla, B., 783.
 Siechenmann, F., 850.
 Siger, J. A., 532.
 Silex, P., 595.
 Silberman, J. A., 1347.
 Simes, J. H. C., 1088.
 Simmons, G. L., 902.
 Simonds, F. W., 1539.
 Simons, M. H., 338.
 Simpson, F. C., 1478.
 Simpson, F. F., 1478.
 Simpson, B. S., 721.
 Simpson, F. E., 150.
 Sims, G. K., 850.
 Sims, W. S., 850.
 Sinkler, W., 849.
 Sippy, B. W., 967, 1154, 1214.
 Sisson, E. O., 967.
 Skeel, R. E., 1087.
 Skelton, C. G., 1155, 1478, 1539.
 Slagle, C. G., 550, *1139.
 Silfer, H. F., 339.
 Small, A. A., 1029.
 Small, E. H., 967.
 Smart, C., 1539.
 Smead, H. E., 1214.
 Spimrow, L., 595.
 Smith, A. A., 1539.
 Smith, A. H., 1479, 1602.
 Smith, A. J., 92.
 Smith, A. L., 338, 532, *1149,
 1214, *1323, 1347.
 Smith, A. W., 1347.
 Smith, C. F., 721.
 Smith, E., 721, 1214.
 Smith, E. B., 532.
 Smith, E. R., 657.
 Smith, F. E., 657.
 Smith, G. A., 468.
 Smith, J. T., 93.
 Smith, O. C., 1087.
 Smith, O. C., 721.
 Smith, R. P., 849.
 Smith, S. W., 338.
 Smith, T., 1, 61, 214, 272, 849.
 Smith, W. H., 1410.
 Smithson, O., 1411.
 Smithwick, M. P., 1155.
 Smyly, W. J., 2.
 Smyth, P. R., 339.
 Snow, S. F., 408, *1331.
 Snow, W. B., 1478.
 Snyder, E. F., 92.
 Snyder, T., 150.
 Sobel, J., 903.
 Solomon, L., 29.
 Solly, S. E., 338, *1138.
 Somers, L. S., 338, 595, 967.
 Sommer, H. O., 469.
 Sotheron, E., 92.
 Soucheon, E., 783.
 Souders, B., 1410.
 Southard, W. F., 850.
 Southworth, T. S., 1029.
 Spahr, D. E., 1348.
 Spear, J. M., 402.
 Speer, G. G., 850.
 Spoidal, E., 532, 1347.
 Spencer, G. W., 272.
 Spencer, R. H., 721.
 Splers, H. H., 151, 339, 657, 1539.
 Spitzer, W. G., 532, 656, 1347,
 1649.
 Spitzka, E. C., 532, 1410.
 Spradling, L. W., 1087.
 Sprecht, J., 967.
 Stafford, W. G., 595.
 Stahl, F. A., *779, *845.
 Stapleford, A. D., 93.
 Staples, F., 272, 721, 967, 1029,
 *1131, 1411.
 Staples, H. L., 1029.
 Starkloff, M. C., 402.
 Stearns, W. G., *1272.
 Steele, A. A., 850.
 Steeves, Alice M., 1411.
 Steffan, Ph., 1087.
 Stein, O. J., 1539, 1601.
 Stein, H., 1155.
 Stegall, S. I., J., 533.
 Stengel, A., *438, 849, 1214, 1539.

- Stephenson, C. C., 1411
 Stepp, M. D., 1087
 Stecman, W. F., 656, 967.
 Stern, H., 721.
 Sterne, A. E., 1281, 1411, 1539
 Sternberg, G. M., 533.
 Stevens, A. A., 1067.
 Stevens, T. J., 1155.
 Stevenson, C. A., 1281
 Stewart, C. A., 1029.
 Stewart, F. E., *1044
 Stewart, F. T., 657.
 Stewart, R. W., 721, 849, 850.
 Stewart, W. B., 785.
 Stickler, J. W., 721.
 Still, G. F., 1088.
 Stillson, H., *71, 272.
 Stillson, J. O., 1154.
 Stillson, J. C., 505, 657, 850, 902,
 967, 1029, 1154, 1539.
 Stirling, A. W., 967.
 Stirling, J. W., 1214.
 Stivers, C. G., 905.
 Stanley, W. M., 215.
 Stockton, C. G., *764, *831.
 Stoddard, C. L., 903.
 Stone, A. K., 468.
 Stone, I. S., 783, 850.
 Stone, R. M., *1123.
 Stock, F., 402, 783.
 Story, W. L., 1281
 Stout, G. C., 596.
 Stout, H. S., 902.
 Stover, C., 1478
 Straight, H. S., 1001
 Strangeways, W. F., 721, 967.
 Straus, L., 657.
 Stricked, L., *1235, 1478
 Strong, A. B., 1154, 1601.
 Strong, C., 850.
 Stubbs, G. H., 656.
 Stucky, J. A., 328, 532, 1029,
 *1180.
 Sturgis, F. R., 1214.
 Stuver, E., 215, 533, 656, *705,
 721, 1154.
 Sudduth, W. X., 468.
 Susefert, E. C., 469.
 Suggs, F., 1539
 Sulter, W., 903.
 Suller, G. F., 1154.
 Sullivan, W. C., 1281
 Summers, F. D., 1410
 Summers, J. E., 28, *63.
 Summers, J. E., Jr., 339, 1155.
 Summers, T. O., 272.
 Sumner, A. F., 850, 1601.
 Sumpter, Wm. D., 783.
 Sutherland, J. L., 595, 1410.
 Sutherland, J. L., 595.
 Sutton, E. M., *1641
 Sutton, R. S., 468.
 Swain, H. L., 11555, 1281.
 Swan, Wm. E., 1029.
 Sweet, W. W., 1030.
 Swearingen, H. V., 783, 1539.
 Swinburne, Geo. K., 214, 1029.
 Swope, I. W., 1478
 Symonds, B., 272.
 Symonds, B., 1348
 Symonds, E. M., 1088.
 Tackett, John, 783.
 Taff, C. E., 1601
 Tall, D., 656.
 Tall, L., 92, 1214.
 Tall, Wm. C., *458.
 Talbot, G. A., 1411
 Talbot, R. H., 469.
 Tamslele, J. P., 902.
 Tanner, C. H., 1214.
 Tansley, J. O., 174, 1410.
 Tappay, E. T., 721.
 Tate, M. A., 1282, 1411
 Tate, H. W., 150.
 Taylor, A. E., 532, 849.
 Taylor, A. M., 721.
 Taylor, B. M., 783, 1155.
 Taylor, E. W., 859, 1478.
 Taylor, F. J., 738, 595.
 Taylor, F. L., 1539
 Taylor, H. L., 533, 721, 783, 903,
 929, 1411, 1539.
 Taylor, H. M., 29, 532, 533, 595,
 657, 967, 1601.
 Taylor, J. H., 1088.
 Taylor, J. H., 1539
 Taylor, J. L., *577
 Taylor, J. M., 28.
 Taylor, M., 39.
 Taylor, H. P., 1347, 1179
 Taylor S. B., 1347, 1601, 1649
 Taylor, T. E., 151.
 Taylor, W. W., 1049
 Taylor, Wm., 150.
 Taylor, Wm. H., 533, 721.
 Taylor, W. J., 28.
 Tehault, C. H., Jr., 783.
 Teichmann, M., 478.
 Teschner, J., 1281
 Teayer, F. C., 92.
 Theisen, C. F., *382.
 Thin, Geo., 469.
 Thomas, C. P., 721.
 Thomas, E., 1539.
 Thomas, E. M., 1411
 Thomas, H. M., 1088, 1155, 1411.
 Thomas, J. D., 92, 338, 595, 902,
 1155, 1410.
 Thomas, J. J., 272, 722, 783.
 Thompson, E., 1155.
 Thompson, G. H., 967, 1087.
 Thompson, J. E., 783.
 Thompson, J. M., 1348
 Thompson, W. E., 214.
 Thomson, W. H., 215, 1282, 1478
 Thorne, W. S., 962.
 Thornton, E. H., 1411
 Thornton, G. G., 967.
 Thornton, T. R., 1281
 Tiffany, F. B., 92, 150.
 Timmerman, A., *1128, 1215, 1478
 Titterlington, M. E., 1347
 Tobey, S. D., 595.
 Todd, P. C., *949.
 Toles, J. K., 850.
 Tomlinson, E. A., 150, 783, *827.
 Tompkins, E. L., 1154.
 Tona, S. W. S., 783.
 Towsee, Lillian G., 656, 1067.
 Tracy, E. A., *75, 272, 657, 721.
 Travis, B. F., 1478
 Trentler, B., 150.
 Triplett, J. S., 1029.
 Tucker, E. A., 402.
 Trudeau, E. I., 468.
 Turlight, J. H., 92.
 Tyndal, G. W., 1215.
 Tubby, A. H., 1088.
 Tucker, A. B., 92.
 Tucker, C. E., 150.
 Tuckerman, L. B., 338, 1214.
 Tucker, E. A., 402.
 Tuley, H. E., 92, *907.
 Tull, E. E., 595.
 Turck, F. B., *880, 1347, 1411,
 1540.
 Turner, F. B., 1087.
 Turner, S., 1411
 Twitchell, G. B., 903.
 Twombly, E. L., 1030.
 Tyler, G. E., 272.
 Tyler, H., 214.
 Tyroel, G. W., 1215.
 Tyson, J., 849.
 Tyson, Jas., 272.
 Uhis, L. L., 721.
 Ulrich, C. M., 533.
 Uphur, J. N., 1347
 Upton, H. S., 339.
 Vall, W. H., 150, 656, 1347, 1601.
 Valentine, E. M., 215, *1119, 1601.
 Vaik, F., 967.
 Vance, A. M., 272, 532, 595, 967.
 Vance, P. W., 783.
 Van der Laan, J., 777.
 Vander Veer, A., 92.
 Van de Warker, E., 1601.
 Van Emon, J. H., 272.
 Van Fleet, F., 92, 1478.
 Van Hook, W., 214, 532.
 Van Hoosen, Bertha, 783.
 Van Horn, A. F., 849.
 Vansant, E. L., 722.
 Van Schaick, G. G., 1601
 Van Swearingen, H., 1410
 Van Swerlinger, B., 1087.
 Van Zant, C. B., 783.
 Vaughan, C. J., 1410.
 Vaughan, P. T., 1602
 Vaughan, W. J., 150.
 Vaux, F. L., 150.
 Vaux, C. A., 338, 656, 850, 902,
 1411
 Voorhoeft, F. H., 1410
 Vilheugue, G., 1154
 Vineberg, N., *1013.
 Vinal, P., 850, 1088, 1478.
 Von Adelung, G., 402.
 Von Grimm, A., 1029.
 Von Krafft Ehling, 532, 1410.
 Von Ruch, S. H., 1087.
 Von Weickelnd, L. L., 533.
 Voorhees, J. D., 902, 1029.
 Voorranger, H. J., 902.
 Vose, R. H., 1281
 Voss, F., 850.
 Wachenheim, F. L., 273.
 Wade, C. E., 562.
 Wado, W., 1214.
 Wagner, G. M., 1155.
 Wagner, H. G., 967.
 Wagner, T. H., *964.
 Wagner, G. F., 967, 1282.
 Wagner, C. F., 656.
 Wainwright, C. F., 1649
 Wainwright, J. W., *1399
 Wais, A. S., 1087.
 Walt, W. S., 1087.
 Wakeman, A. J., 849.
 Walcott, H. J., Jr., 1539
 Walker, E. C., 1649
 Walker, F. B., 502
 Walker, F. E., 656.
 Walker, H. O., *687, 1087.
 Walker, J. R., 783.
 Walker, S. J., 839.
 Wallace, C. H., 468.
 Wallace, F. E., *647, 1410.
 Wallace, H., 150, 1029.
 Walls, F. N., 272, 656.
 Walters, O., 595.
 Walton, L. G., 1539
 Ward, M. B., 1539, 1649.
 Ward, M. B., 1029.
 Ward, S. M., 151.
 Warder, C. C., 1281
 Warner, B., 468.
 Warner, F., 338.
 Warner, L. H., 1347
 Warren, J. C., 907.
 Warren, W., 1215.
 Warren, W. S., 1214.
 Warthin, A. S., 29, 150.
 Washburn, J. W., 656.
 Washburn, G. H., 1282
 Washburn, W. H., 1087, 1155.
 Waters, G. M., 215.
 Wathen, W. H., 339, 402 *935,
 967, 1649.
 Watkins, I. H., 783.
 Watkins, T. J., 402, 1281, 1601.
 Watson, A., 1154.
 Watson, O., 1088.
 Watson, C., 902.
 Watson, L. H., 1281
 Watt, J. F., 29.
 Waugh, W. F., 1153, 1649.
 Weaver, G. H., 1001
 Weaver, W. H., 967.
 Webber, S. G., 29.
 Weber, L., 402.
 Webster, D., 533, 1348.
 Webster, G. W., *290, 532.
 Weeks, E. E., *1570
 Weiland, C., 656, 1478.
 Weir, Jas. Jr., 338, 595.
 Weisner, J., 902.
 Welch, W. M., 1348
 Wellington, S. G., 402.
 Wells, E. F., *435.
 Wells, G. M., 402.
 Wells, H. G., 1082.
 Wells, J. H., 1282
 Wells, E. E., 92, *319, 1029.
 Wende, W. W., 1029.
 Wendt, A. H., 1347
 Wender, X. O., 1478.
 Wernicke, C., 532, 1410.
 Wertheim, E., 560.
 Wertz, T., 92.
 Westinger, J. A., 1410
 West, J. P., 1601
 Westcott, H., 469.
 Westphal, H., 28.
 Wetherill, H. G., 338, 1155.
 Wetmore, M. M., 656.
 Whalen, C. J., 595.
 Wheat, A. F., 1411
 Wheatley, F. G., *1073.
 Whinston, C. A., *256.
 Whitney, R. E., 272.
 White, A. C., 1272.
 White, C. J., 722.
 White, F. W., 469, 849, 1215.
 White, J. A., *1203.
 White, J. W., 1347
 White, M. J., 1088.
 Whitehead, R. H., 902.
 Whitfield, J. M., 1281
 Whiting, F., *1063.
 Whitman, R. H., 967.
 Whittney, H. T., 1347
 Whitney, W. F., 967.
 Whitte, C. J., 902.
 Whitsitt, F. H., 828.
 Wiener, A., 273.
 Wiggin, A. F. H., 28, *640.
 Wiggins, J. L., 272.
 Wight, G., 1539.
 Wilbert, M. J., 402.
 Wilcox, R. W., 469.
 Wilder, W. H., 1029, 1539.
 Wile, W. C., 1155.
 Wilkinson, A. D., 902, 1410.
 Wilkinson, F. B., 1281.
 Willard, DeForest, 849, *1057.
 Willets, J. E., 532.
 Williams, C., 1478
 Williams, C. H., *1002, 1649.
 Williams, E., 214, 468, 1087.
 Williams, E., 1087.
 Williams, F. H., 92, 215, 783, 850,
 *1207.
 Williams, H. L., 1214.
 Williams, J. W., 92, 595, 849.
 Williams, W. H., 1214.
 Williams, W. R., 1411.
 Williamson, T. M., 721.
 Wilson, C., 907.
 Wilson, E. P., *7347
 Wilson, F., 1069.
 Wilson, G. W., 338.
 Wilson, H. P., 783.
 Wilson, J. C., 150, 656.
 Wilson, L. B., 849.
 Wilson, N. W., 468, 721, 1214, 1281
 Wilson, S. M., 849.
 Wilson, W. J., 1539
 Wilson, W. R., 902.
 Wilson, W. R. A., 272.
 Wing, E., 150, 532, 1029.
 Wing, E. M., 595.
 Wingate, U. H., 468, 656.
 Winnett, F., 656.
 Winter, J. G., 595.
 Wintermantel, A., 850.
 Witt, Wm. E., 272.
 Winters, G. H., 215.
 Wisbart, D. J. G., 967.
 Witherspoon, J. A., 1347
 Withsterline, H. H., 850.
 Witt, Wm. H., 150.
 Wittauer, K., 902.
 Wolfer, A., *1022.
 Wolf, Hugo, 595.
 Wood, A. C., 1347
 Wood, E. G., 533, 1281.
 Wood, G. B., 402.
 Wood, H., 1281
 Wood, H. C., 215, 1478, 1601.
 Wood, H. C., Jr., 272, 902.
 Wood, S., 1214.
 Wood, W., 595.
 Wood, W. C., 1601
 Woodbury, F., 1411
 Woodruff, H. W., 1281
 Woods, D. F., 721.
 Woods, H. Jr., 1348
 Woodson, B. S., 1155, 1348.
 Woodward, J. H., 469, 1214.
 Woolen, G. V., *1042
 Woolley, P. G., 468.
 Woolsey, Geo., 151.
 Worcester, W. L., 783, 1347.
 Work, H., 850.
 Worthly, H. S., 1029.
 Wright, Adam, 1214.
 Wright, A. H., 1214.
 Wright, A. L., 469.
 Wright, E. W., 468.
 Wright, J., 272, 1029.
 Wright, J. H., 214.
 Wright, J. W., *1001.
 Wrigley, L. H., 214.
 Wunderlich, H. W., 783, 1029.
 Wurdemann, H. W., 1111, *1467.
 Wyeth, J. A., 214, 1602.
 Wynne, H. C., 272, 532.
 Wynn, P. B., 1087.
 Yarbough, C. G., *1148.
 Yarnal, N., 1410.
 Yarrow, T. Y., Jr., 1087.
 Yoe, B., 1214.
 Youmans, T. G., 656.
 Young, H. H., 783.
 Young, J. K., 802, 849.
 Young, N., 1214.
 Young, W. A., 150.
 Zenner, P., 468, 533, 783, 850,
 1088, 1347.
 Zimmerman, C., 595.
 Zwart,

The Journal of the American Medical Association

VOL. XXXIII

CHICAGO, ILLINOIS, JULY 1, 1899.

No. 1

Addresses.

THE OPHTHALMIC SECTION.*

HOW MAY IT DO THE MOST EFFECTIVE WORK?

CHAIRMAN'S ADDRESS.

BY CASEY A. WOOD, M.D.

CHICAGO.

As you are well aware, the By-Laws of the ASSOCIATION direct that the chairman of each Section shall prepare an address on recent advancements in the particular department of medicine over which he has been elected to preside, or to make suggestions in regard to possible improvements in methods of work. I have this year chosen to address you on the second of these subjects, because it occurs to me that while the story of the last year's progress in ophthalmology is a tale oft told by numerous journals, text-books and monographs, and readily accessible to all of you, the experiences of your executive committee, secretary and chairman in providing for a continuance of the successful meetings held in the past may be new to most of you and well worth recounting. It is in the hope that a frank recital of these will issue in the consideration of some means whereby improvements, not only in the methods, but in the quality, of the work done by this Section, may be brought about.

It must not be inferred from this that the scientific and practical value of the papers read before this branch of the ASSOCIATION can be justly regarded as inferior to those presented to similar societies elsewhere. On the contrary, it is rather with an embarrassment of riches in this respect that we have to deal. For example, under the able and discriminating leadership of my distinguished predecessor, Dr. Harold Gifford, fifty-six titles were placed on the program. This year we have fifty-eight, and I believe I am well within the mark when I state that quite seventy-five papers, ranking well above the average in interest and value, might have readily been obtained for this meeting. The latest official roll-call of the ASSOCIATION shows that there are about 375 members who are especially interested in ophthalmology, and it is not too much to claim that one-fifth of these are as competent to observe, as capable of giving and as willing to furnish us with the valuable results of their studies, as any similar body in the whole realm of ophthalmology. I will freely confess, however, that I regard fifty-eight (or even fifty) as too large a number of papers for one meeting. In the first place, a superabundance of material necessarily limits the time allowed for the presentation of each paper. The number of hours for the scientific portion of the program being strictly prescribed by the By-Laws, the time possible for each reader is in inverse ratio to the number of contributions. You will remember that at the previous meeting it was considered necessary, and I think properly so, to restrict each reader to ten minutes, without regard

to the character of his paper. A report of a case or two that might, with propriety, occupy that amount of time, or less, was placed on a par with essays dealing with subjects that in their very nature require at least twenty minutes or half an hour for intelligent delivery. With an ever-increasing membership (at least 400 this year) the problem of arranging future programs becomes a most serious matter and while this may well continue to be the particular task of your chairman, the whole Section is vitally interested in, and will be greatly affected by, the manner in which it is done. In any event, we have come to the parting of the ways. Henceforth, it will be physically impossible—and very probably undesirable even if it were possible—to read and discuss all the papers that, in the ordinary course of events, will be offered to this Section. How, then, shall the program be filled, and whose is to be the responsibility of selecting some and rejecting others? In the absence of any definite instructions from the Section on this point, the chairman's work must grow more difficult and embarrassing every year. Judging from my own experience, I am sure that your executive officers would be glad to receive and carry out the suggestions of the majority. After giving the matter much thought, and in the light of my own investigations, I would suggest that the papers be limited to forty, of which fifteen be contributed by members, on invitation of the chairman, while the remaining twenty-five be volunteer contributions, selected by the executive or other committee—with the chairman and secretary as ex-officio members—from the titles sent in before a certain date. This plan has proved successful in other representative societies. It is vital to the carrying out of this plan that the Section should grant its executive power to allow, at his discretion, an extension of the time for reading some particular paper to the limit permitted by the ASSOCIATION By-Laws, the number of minutes so allowed to be printed on the program with the title.

By no means the least valuable portion of our program is the discussion that is expected to follow the reading of the papers. If the title of a paper was always a sufficient indication of its contents, members interested in the subject would require nothing more to enable them, at the proper time, to confirm the experiences or controvert the opinions therein expressed. As it is, we are usually left in the dark as to the subject really under discussion until the paper is read to the Section. Few of us possess such phenomenal memories that we can at once recall the details of cases—stored in case-book and note-book—bearing on the matter at issue. I have long believed that each contributor to our program, should, as early as possible, send a brief extract of his paper to the secretary. Copies of this should be made and forwarded, not only to members appointed to discuss the paper, but to any others who may ask for them. In this way the value of the proceedings will be much enhanced—to the reader, to the critic, and to the audience.

*Presented to the Section on Ophthalmology at the Fiftieth Annual Meeting of the American Medical Association, held in Columbus, Ohio, June 6-9, 1899.

Intelligent limitation of the number of papers will not only prevent needless haste in the presentation of the papers, and allow of reasonable time for their discussion, but it will make possible such variations in the usual program as may, from time to time, seem desirable. For instance, I have this year, after consultation with your executive committee, invited a distinguished French ophthalmologist to address you on a subject with which he is peculiarly competent to deal. In the same way, at my invitation, two American gentlemen equally well known to us, have consented to give addresses on topics of much interest. Personally, I am much in favor of joint discussions with some other Section of subjects of common interest, and this year, at the suggestion of Dr. Mayer, have helped to arrange a symposium with the Section on Laryngology and Otolaryngology. By no means the least valuable of the results that flow from such an arrangement is the emphasis thus placed on the fact—by some forgotten—that ophthalmology is not a science apart from, but is merely one branch of the tree of, medical learning.

It has been suggested to me that, instead of the ordinary symposia, a subject of importance should be announced for general discussion at the close of one session, to be taken up the following year. This plan has been adopted by our sister society, the British Medical Association, and may well have our consideration.

Another project, to the accomplishment of which I have given much thought, might, perhaps, profitably receive some of the attention and occupy a portion of the time at our disposal. I refer to the investigation by the Section of the value of those remedies, methods of examination, etc., which are so frequently recommended by ophthalmologists here and elsewhere. The virtues of many of these are often heralded by a flourish of trumpets, and sometimes promoted by publications in the medical press and by makers of medical instruments or wholesale drug houses having a commercial interest in their successful sale. I do not say that such agents are necessarily without virtue, but statements concerning them, thus exploited, may well be received *cum grano salis*. Even sincere partisans of new methods of treatment are oftentimes led to overestimate the value of the remedies in question. On the other hand, we know that not a few useful additions to our pharmacopœia long remained in undeserved obscurity, mainly because their virtues were not early and sufficiently put to the test. In the midst of such uncertainty, how shall the individual observer find the truth? It certainly seems as if this Section possesses qualities that eminently fit it for the task of separating the wheat from the mass of therapeutic and other chaff yearly offered to us. It is a truly representative body, of wide influence, of vigorous growth and, moreover, comprises members with the most conservative as well as the most radical leanings. It would be difficult to obtain at the hands of committees appointed at each meeting unbiased reports on the efficacy of such agents, remedial and other, as at the time appear to be worthy of investigation. As a few examples of these that seem to me to call for such investigation, may be mentioned protargol, argentamin, suprarenal capsule, McGowan's method of ripening and extracting immature cataract, the relative merits—as local anæsthetics—of eucain (alpha and beta), holocain and cocaine, the removal of the tarsus in the treatment of deep-seated trichoma, the value of portable ophthalmopneumatic fields, for instance—and the sidroscope of Auer. Reports, from proper committees representing a year's work in hospital and private practice, would not

only be of the greatest value to every member of the Section, but would command respect from ophthalmologists everywhere. They would not only add to the prestige of our Section and increase its influence, but they might well form one answer to that vague insinuation, occasionally made by those who do not know us, that Americans are so prone to cast side glances at the financial aspect of medicine, that they fail to maintain a steady gaze upon the more important landmarks of our profession—that we are "practical" rather than scientific. Evidence of the American's ability to hold his own in the field of scientific research connected with ophthalmology continually multiplies about us, and there is no reason why the ASSOCIATION, to which we are proud to belong, should not do its fair part in the friendly strife for pre-eminence.

PRACTICE OF MEDICINE SECTION.*

CHAIRMAN'S ADDRESS.

BY FRANK BILLINGS, M.D.
CHICAGO.

The officers of your Section present you with a program, the chief fault of which is its length, and an attempt has been made this year, and we believe the first of its kind in any of the Sections of the AMERICAN MEDICAL ASSOCIATION, to present synopses of the papers which will be read.

It has been difficult to obtain these abstracts, but I think we may feel that the attempt has been successful enough to show its desirability and to establish it as a custom in this Section. No one will deny the importance of the publication of the synopses of the papers which are to be read, inasmuch as the members thus have an opportunity to acquaint themselves with the subject-matter of the papers and may prepare themselves for the discussion. One of the chief advantages of the presentation of papers before a body of medical men is the discussion which is elicited. It is difficult for any man to discuss with full intelligence and clearness a paper on a subject or on conditions which may be brought out by the writer immediately after the reading of such a paper, unless he shall have had the opportunity to become acquainted with the chief points which the writer discusses.

We have succeeded in presenting fifty-four abstracts of the eighty-three papers on the program, and these synopses were published with the program in the JOURNAL more than two weeks ago, so it is probable that every one in attendance on this Section has had an opportunity to read an epitome of most of the papers which will be presented to you. We have reprints of the program with the abstracts of the papers for distribution during the meeting, which will, we hope, still further stimulate a discussion of the important subjects to be brought before you.

This Section should adopt a rule requiring every member who desires to present a paper at any future meeting to prepare and send to the officers of the Section a short synopsis of the paper, which may be printed in the JOURNAL, with the program, not later than the first week of May of each year. The great length of this program is a fault which, under the present rules of the ASSOCIATION, it is not within the power of the officers to correct.

Every member of the ASSOCIATION enjoys the priv-

*Presented to the Section on Practice of Medicine, at the Fiftieth Annual Meeting of the American Medical Association, held in Columbus, Ohio, June 6-9, 1929.

ilege of presenting a paper before the Section on any medical topic, provided it is within the scope of this Section. This is a rule which is without doubt a fair one, but it must work to the disadvantage of the Section, inasmuch as a program which is too long will not allow a discussion upon the important subjects which they demand. It seems to me that a modification of this rule should be adopted which will give the officers of the Section the discretionary power of limiting the number of papers which may be read at any meeting. To give all an opportunity to present papers which may be published in the JOURNAL, by the recommendation of the officers of the Section, a rule which is in existence in other societies, and which could be adopted, would allow members to present papers, to be read by title only.

It seems to me also desirable that a certain class of papers should be favored. Original research should be stimulated, and especially in the direction of clinic work. Reports of cases with full reports on the clinic findings, and, when possible, supported by thorough post-mortem examinations, will be of greater value than papers on general subjects more or less theoretic in character.

This ASSOCIATION is composed of an immense body of medical men made up of the best talent of the country. There is no reason why the work done in the ASSOCIATION should not be equal to or better than the work of any other medical body. The large membership and its necessarily unwieldy nature must make it difficult to attain an ideal state, but if the program is carefully made up of selected papers, and if abstracts are required of all who read papers, it will finally become what it should be—the leading medical association of the country.

I appreciate fully the honor conferred on me in appointing me to the position of chairman of this Section, and I desire to express my thanks to you.

The innovation presented in the program and the recommendations which the chairman has taken the liberty to present to you in this short address are not given to you in any dogmatic spirit, but with the belief that the principles involved are important and that a great majority of the members of the Section are in sympathy with them.

In closing, I wish to add a word of public thanks to the secretary of the Section, who has been indefatigable in his efforts to formulate a program and to stimulate the co-operation of members everywhere to present papers to the Section.

100 State St.

THE CLEVELAND (Ohio) City Council, on June 19, passed an ordinance, "to prevent and limit the spread of certain dangerous infectious diseases in and by street-cars." It provides that any person or persons, while riding in or upon any street-car within the city, who shall expectorate or in any way deposit upon the floor, seats, or other parts of any street-car in use for transporting passengers any secretion, excretion, or discharge from the lungs, throat, mouth or nose shall be deemed guilty of a misdemeanor." The penalty for each offense is a fine of not less than \$1 nor more than \$10 with costs of prosecution. It is hoped that, in addition to ridding the street-cars of that intolerable and disgusting nuisance—the American expectorator—this legislation will have an educating influence on the public in regard to the care necessary to avoid the needless of infectious diseases.

Original Articles.

ACTION BY TOXIC AGENTS.

WHAT ARE THE PHYSIOLOGIC PROCESSES OR TENDENCIES THAT IMPART TO THE LIVING HUMAN BODY ITS VITAL RESISTANCE OR IMMUNITY AND HOW CAN THEY BE AIDED BY THERAPEUTIC AGENTS.

BY N. S. DAVIS, M.D.
CHICAGO.

One of the important aphorisms of Hippocrates declares that "the physician is a servant, not a teacher of nature," and that in the treatment of diseases he should "follow nature." His declarations have been repeated and their wisdom extolled by all the more philosophic and learned members of our profession, from his time to the present. Therefore, we are reminded of the curative achievements of nature or of the *vis medicatrix nature*, in almost every medical work relating to diseases and their treatment. If, however, we are to follow Nature for the purpose of aiding her in resisting the influence of toxic agents, we must have some definite conception of what is meant by Nature in this connection; or at least, a correct knowledge of the processes she employs in resisting the impression of toxic agents and of expelling them after they have gained access and established the phenomena of disease. It is evident that the word Nature, so freely used in medical literature, is simply intended to personify the natural forces or functions by which a living body resists the impressions of foreign or toxic agents, and thereby prevents the development of disease or disorder; or after disorder has been established, still neutralizes or expels the disturbing agents and restores health. Just what these natural forces or functions are, but few practical writers attempt to explain. They simply claim that nature does this and that in preventing or curing disease.

Biologists, with the aid of modern facilities for minute and exact investigations, have resolved all living organized bodies into one essential prominent element, called by some persons bioplasm and by others protoplasm. The anatomist, with the aid of his microscope, finds this bioplasm segregated into minute organized bodies or cells, each capable of responding to the presence of food material by appropriating it to its own growth or multiplication; and of oxygen by yielding to disintegration or waste. We thus find the primary and distinctive function of all bioplasm to be a constant change in the atoms of which it is composed, produced by an affinity for such material as by addition constitutes nutrition or growth on the one hand, and, on the other, a similar affinity for oxygen, by which oxidation and disintegration are constantly taking place.

These constant changes in the bioplasm show that all animal life involves changes in the matter of which the living body is composed. They show, also, that these changes, which have been styled metabolism, take place under the guidance or control of laws or forces peculiar to living or vitalized matter—laws or forces derived from previous living bodies. Thus each cell or aggregation of bioplasm of which the living body is composed has been developed from a preceding cell and inherited the properties or forces of the parent cell from which it originated. It is by these properties that each bioplasmic cell is enabled to attract to itself and appropriate in definite positions such matter as is necessary for its nutrition or

*Presented to the Section on Practice of Medicine, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

growth, and to reject all other materials. And it is this ability of organized bioplasm to appropriate or reject materials with which it comes in contact that constitutes one of the most important natural functions or processes for resisting the action of toxic agents of all kinds. In the lower and simpler animal organizations, it would seem to be the only means for perpetuating a normal existence. But when the bioplasmic cells are aggregated in such a way as to constitute a variety of forms or structures, each having some special function, as in the more complex or higher animal organizations, each added special function brings with it some additional influence or mode by which toxic materials may be developed within or imbibed from without, and also additional means for their neutralization or expulsion.

Thus the mass of bioplasm that we call the germ or cell, if kept in contact with a proper temperature and food material, will simply maintain those metabolic changes that pertain to its own nutrition and growth. It simply imbibes what it needs and refuses or excretes all else. It has neither power of locomotion, variety of structures, nor complexity of function. In man, the most complex of animal organizations, however, we find the cell bioplasm aggregated into fibrous, muscular, nervous and secreting structures—all fed or nourished, it is true, from a common fountain, the blood, but the quality and quantity of that blood dependent on the natural activity of the digestion and respiratory organs and the quantity and quality of the materials with which these organs are supplied. If the digestive organs are supplied with only wholesome food material, and the respiratory with pure atmospheric air in normal quantity, the resulting blood-product will be normal so far as relates to furnishing material for the nutrition, growth and repair of every structure of the body. If, however, the food material or the air furnished is permitted to contain unwholesome or toxic materials, the blood will be very liable to become impregnated more or less, with the same, and thereby extend its disturbing influence to every structure and function of the body. But the blood is not only the fountain from which all tissues receive their material for nutrition, it is equally the primary receptacle of all the products of retrograde metabolism or waste. And to prevent it from becoming speedily toxic, special organs or structures are provided for the constant excretion or elimination of all such waste products, and such other disturbing elements as may have gained access from without.

By the foregoing elementary review, it is plain that the natural processes or functions which impart to the living human body its vital resistance, or, in other words, which constitute the *vis medicatrix nature*, are: 1, the inherent power of selection and rejection possessed by each cell or organized mass of bioplasm of which the blood and tissues are composed; 2, the oxidations by which tissue metabolism is affected; and 3, the excretory and eliminating processes by which the products of metabolism and other disturbing elements are attracted from the blood-currents and passed out of the system. The vital resistance of any living body may be said to depend directly on the activity and efficiency of these several physiologic functions and processes, be said to depend directly on the activity and efficiency of these several physiologic functions and processes. Conceding this to be true, the next inquiry is, what are the natural agents by which the efficiency of these functions and processes is maintained?

That the inherent or physiologic power of the cell organizations of both the blood and tissues to maintain

their integrity and resist unnatural impressions depends largely on hereditary transmission will be admitted by all enlightened and experienced physicians. We may see this illustrated in every neighborhood and in all grades of society. In the same localities and in families pursuing the same occupations we see more than half of the children born in one family die before they reach the age of 5 years, while in the next family no child is lost in infancy and four out of five of them born persist in living to old age. Of one it is said he has but little vital resistance, is readily affected by all disturbing influences, and speedily succumbs to disease; while another seldom yields to morbid impressions and is said to be tenacious of life. Thus the inheritance of a vigorous and active condition of cell bioplasm constitutes one of the most important elements of man's vital resistance to toxic agents of every kind. It is this same perfection of the primary cell bioplasm, both of blood and tissues, that determines the activity and perfection of the processes of assimilation, nutrition and secretion, as well as of those of oxidation and disintegration or waste. Conceding the correctness of all this, the important question still recurs: What are the natural agents by which the properties of the cell bioplasm and all metabolic processes are maintained?

The agents essential for maintaining the functions of animal life are the presence of heat, oxygen as represented in atmospheric air, and blood or some fluid containing both food material and vitalized cells. To secure the uniform presence of these agents, man and all the higher orders of animals are supplied with digestive and assimilative organs to elaborate the necessary blood; pulmonary organs through which to obtain the necessary supply of oxygen; and a vascular or circulatory apparatus for distributing both to every part of the body, while the resulting metabolism evolves the needed heat, and effects the removal of the waste products through excretion and elimination. Inheriting, thus, a vigorous bioplasmic organization, a complete development of the digestive, respiratory and circulatory organs, supplied with only wholesome food, pure air, good water and appropriate exercises both of body and mind, the individual is endowed with his highest degree of vital resistance to the impression of toxic agents of all kinds. And if toxic agents do gain access to his blood or tissues, his phagocytic activity, active oxidation processes and efficient excretory functions furnish the most efficient natural means for either destroying the toxic agents or expelling them from his system. It is the co-operation of these natural means that are personified as "Nature" in the literature of medical practice; and the more clearly they are comprehended in all their bearings by the physician, the more accurately can he follow the Hippocratic injunction to "follow nature," and the more efficiently can he aid her in overcoming her embarrassments. To maintain the full normal oxygenation and decarbonization of the blood and the natural activity of metabolism, both nutritive and disintegrative, with free elimination of waste products, should be not only a leading, but a fundamental object of the practitioner in all his efforts, either to prevent or to cure disease. The hygienic conditions necessary for accomplishing this object have already been stated, and are too familiar to you to need repetition or restatement here.

The active investigations of the last half century, aided by all the facilities afforded by organic chemistry, microscopy, biology and physics, have pretty fairly demonstrated the important etiologic fact that nearly all

the acute general diseases or febrile affections are caused by toxic agents called ptomaines, leucomains or toxalbumins, resulting either from pathogenic bacteria introduced from without, or from the retention of excrementitious products of metabolic changes within. The same investigations have developed the additional fact that these several toxic agents exert their primary disturbing or toxic influence on the organized bioplasm of the blood and tissues, directly interfering with the normal internal distribution of oxygen and with the tissue metabolisms, both nutritive and excretory, and thereby develop more or less disturbance of respiration, circulation, secretion, innervation and evolution of heat, constituting the familiar phenomena of fever. Closer analysis shows that the essential pathologic conditions are diminished oxygenation and decarbonization of the blood, and diminished or perverted tissue metabolism from the presence of some toxic agent exerting a degenerative influence on the corpuscular elements of the blood or displaying a special affinity for some particular structure or organ. Thus the toxin of the bacilli of diphtheria, in addition to its general disturbances, shows an active affinity for the membranes and glands of the air-passages; that of typhoid fever for the membranes and glandular structures connected with the digestive apparatus; and the pneumococcus toxin for the pulmonary structures. The more clearly the physician comprehends both the general bioplasmic and the special affinities of each toxic agent, the more accurately he can select and apply the appropriate remedies, provided always, that he has an equally clear knowledge of the *modus operandi* of the remedial agents he uses. All diseases arising from infectious or toxic agents have a period of incubation before active summons appear. If the physician could have charge of his patient during that period, by securing for him an abundance of pure air, good water, wholesome food and strict cleanliness, with an appropriate antitoxin or antidote, if any were known, he might so far improve his patient's processes of vital resistance as to prevent the development of disease, or, at least, render its progress mild and free from danger. The value of this mode was well illustrated by the voluntary inoculations for smallpox, extensively practiced several years before the discovery of the cow-pox vaccin by Edward Jenner, and the careful hygienic treatment of the patients during the period of incubation. Unfortunately, in the ordinary field of general practice, the physician seldom sees the patient until the period of incubation has passed and the active development of disease has taken place. It is then too late to establish complete prevention or immunity, but the application of the same means just indicated may limit the further involvement of the specific toxin in the system, and aid the natural processes of vital resistance in destroying by leucocytic activity or expelling by oxidation and excretion that already existing, and thereby lessen both the severity and duration of the disease. And this is just what is sought to be accomplished by the use of antitoxin serums now in vogue. Much additional aid can be rendered to the natural processes by free bathing or sponging of the surface with water whenever the temperature rises above 103 F., and by the internal use of such remedies as are known to be capable of promoting the natural action of the skin, kidneys, liver and other depurative organs sufficiently to prevent the retention of waste products and the formation of leucomains. And if, during the progress of disease, the functions of the vasomotor, cardiac and respiratory nervous systems become depressed, they may be efficiently sustained by the judicious use of such

nerve excitants or nerve tonics as strychnin, digitalis, strophanthus and other similar drugs. And in cases of extreme depression of the cardiac and respiration functions, further aid may be obtained by resort to direct inhalation of oxygen and injections of normal salt solution.

Guided by the facts and principles briefly stated in the preceding pages of this paper, the physician will find himself ever acting in harmony with Nature's own processes, and with the most satisfactory success. But this involves the necessity of studying, with all the facilities of modern research, the nature and effects of each toxic agent, as well as the nature and *modus operandi* of every therapeutic agent he uses. For only by studying the actual effects of toxic or disturbing agents on the blood and tissue and the natural processes of resistance, can he comprehend the true pathologic conditions involved, or the rational indications for treatment. And only by a similar knowledge of the action of each therapeutic agent can he know which to choose for fulfilling any given indication. Otherwise he must depend altogether on the dictum of authority, and give the routine list of remedies recommended for the treatment of diseases designated by the same names. In doing this he is soon found using, for the same patient on the same days, remedies widely diverse in their action, and often directly antagonistic. Thus, to relieve the pains, restlessness, and high temperature of the first stage of an attack of epidemic influenza or any other active fever, such a practitioner will often be found giving his patient liberal doses of antipyrin, phenacetin or some other libal product which promptly affords the patient temporary relief from his pains, but at the same time impairs the properties of the corpuscular elements of the blood, lessens the activity of the leucocytes and oxidation processes, and thereby favors the retention of both the primary toxin and the products of metabolism, and protracts the period of convalescence. Or, if the case be one of continued fever, he will be found applying water in the form of baths or spongings, and giving more or less wine, whisky or brandy, alternately, with strychnin and digitalis from day to day, apparently wholly unconscious of the fact that the effects of his baths, spongings and doses of strychnin and digitalis are being directly antagonized by the alcohol of the wine, whisky or brandy. Both experiments and clinic experience have shown that the external applications of water in the form of baths or spongings not only diminish the fever heat but also increase, in a marked degree, the oxygenation and decarbonization of the blood and the elimination of waste and toxic products by the kidneys and other excretory organs, and at the same time the strychnin and digitalis directly increase the sensibility and reaction of the respiratory and vasomotor nerves, thereby sustaining the important functions of respiration and circulation. And yet, every well-devised experimental investigation has demonstrated that alcohol, chloroform and ether in the system directly diminish the sensibility and action of the respiratory and vasomotor nerves in proportion to the quantity used, and also markedly retard the oxygenation and decarbonization of the blood, and lessen both the activity of leucocytes and of normal metabolism, thereby placing their effects in direct antagonism to the effects of the other remedies given in conjunction with them. A large part of the prevailing scepticism regarding the curative effects of drugs has resulted from such coincident use of antagonistic agents, and the frequent use of agents for the relief of some prominent symptoms, while their ulterior effects were injurious to the natural processes

of vital resistance instead of aiding the same. And there is no part of the whole field of medical knowledge that more needs thorough research and revision than that which relates to the action of drugs on the living body.

OBLIQUE INGUINAL HERNIA.

TYPIC OPERATION FOR ITS RADICAL CURE.

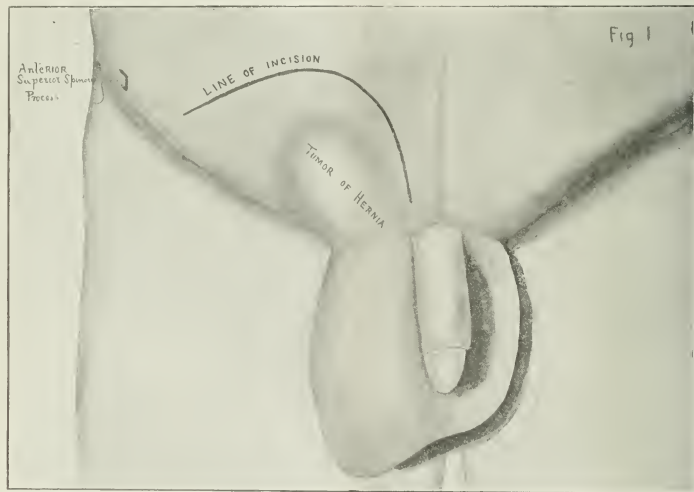
BY ALEXANDER HUGH FERGUSON, M.D.

PROFESSOR OF SURGERY, CHICAGO POST-GRADUATE MEDICAL SCHOOL,
CHICAGO.

A typical operation for the radical cure of oblique inguinal hernia is one that places all the structures involved in the same relationship to one another as they are present in a normal person. The operations that have been hitherto produced to cure inguinal hernia fall far short of being typical. A careful analysis of failures; a painstaking research for hidden truths, and a discernment of contestable premises are ever before the surgeon who hopes for more success, new discoveries and lasting operative procedures.

In the multiplicity of the new environments that have arisen and changed from time to time, herniology shows

operations then in vogue, for I was not wholly satisfied with any of the methods. It was my desire to preserve the steps in each different operation that fulfilled one indication or more and to discard those steps that did not. The result was, I recommended a "combination operation," which was well received. Since then, however, I have been my own severest critic. I freely found fault with my own work, as well as that of others. Several relapses of the rupture occurred after my method, and recurrent cases operated on by other surgeons, after other methods, came to my clinics and practice. The first important observation I made was that the return hernial protrusion began at the upper and outer portion of the seat of operation above the cord, and usually near Poupart's ligament. This I recollected had been referred to by other surgeons. While operating on these relapses I found a slit in the aponeurosis of the external abdominal muscle through which the sac and usually some fat protruded. Determining on a search for the causes of these failures, it was thought advisable to make a semilunar incision and raise a flap of skin, fascia and aponeurosis of the external oblique muscle, in order to bring into view the whole sac, and deeper structures



that there has been considerable developmental experimentation, and attendant thereto new suggestions have presented themselves; new ideas were born, and new truths discovered. In response to a firm conviction of having found an improvement on the older operation, independent thinking surgeons invented the different procedures we now possess. It is plainly observable that "do this and he doeth it," without giving the reasons why, has, in this connection, been too frequently blindly followed by the profession. It is now nearly five years since I undertook to criticize the principal

*Presented to the Section on Surgery and Anatomy, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1896.

with their relations. To my astonishment, I found an angle between the lower border of the internal abdominal oblique muscle and inner aspect of Poupart's ligament wholly unprotected by the internal oblique and transversalis muscles. In the sixth case the unprotected angle extended upward and outward to the anterior superior spine of the ilium, there being no connection whatever between Poupart's ligament and these muscles, the space being occupied by some fat and a hernial sac. This is how I made the important discovery that a deficient origin of the internal abdominal oblique and of the transversalis muscles at Poupart's ligament is a direct cause of the rupture returning in this angle

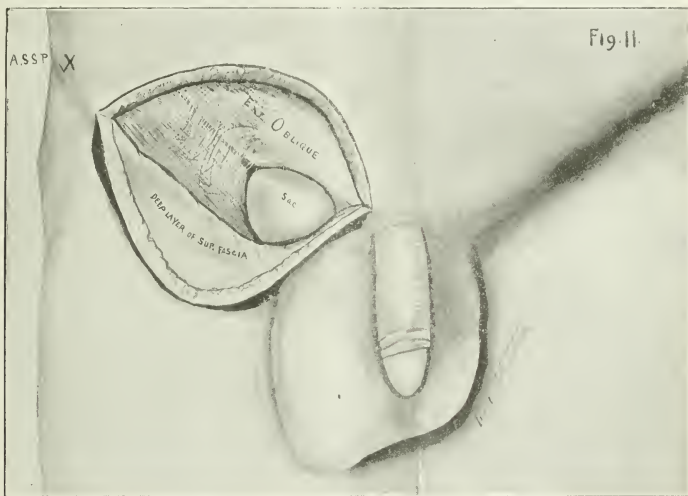
after operation for the radical cure. I then (January, 1898) began the semilunar incision in every hernial operation, and to look for the deficient origin of the internal oblique and transversalis muscles. (Dr. Nicholas Senn tells me that he "has been doing this same incision for about three years.") They were always deficient in origin. In order to clear up this question anatomically, I asked Dr. R. C. Turek, professor of anatomy in the Chicago Post-Graduate Medical School, to make fifty dissections for me of the inguinal region. This he faithfully carried out, assisted by Dr. Walter Fitzpatrick, who is an excellent artist. Dr. Turek presented his work to the Chicago Academy of Medicine as his inaugural thesis.

OPERATION.

First Step: Semilunar Skin Incision.—Begin the incision over Poupart's ligament, $1\frac{1}{2}$ inches below the anterior superior spinous process of the ilium; extend

covered by the deep layer of superficial fascia, and the superficial vessels. (Fig. 2.)

Second Step.—Cut through the external abdominal ring and intercolumnar fascia; separate the longitudinal fibers of the aponeurosis of the external oblique muscle directly over the inguinal canal, far beyond the internal ring, over the surface of the internal abdominal oblique muscle, and up under the skin, to a point nearly opposite the anterior superior spine of the ilium. Delicate transverse fibers are encountered and severed. Retract the aponeurosis of the external oblique muscle and thereby bring into sight the deep structures, viz., the contents of the inguinal canal, the whole sac, with its adhesions, the spermatic cord, ilio-inguinal nerve, internal abdominal ring usually enlarged, frequently an accumulation of subserous fat, the cremasteric muscle, conjoined tendon, internal oblique muscle, and its deficient origin at Poupart's ligament, transversalis



inward and downward in a semilunar manner, circumventing the internal abdominal ring, and terminate it over the conjoined tendon near the pubic bone. (Fig. 1.) Cut carefully backward with a very sharp knife and expose the vessels and pick them up with forceps before severing them, and thus prevent blood-staining of the tissues. Having passed through the skin, two layers of the superficial fascia, fat between them and superficial epigastric vessels down to the aponeurosis of the external oblique muscle, it will be noticed that it is not necessary to cut the superficial circumflex iliac, nor the superficial pudic vessels. Take a pledget of gauze and with it turn the flap of the skin, subjacent fat and fascia downward and outward over the thigh. This procedure brings into view the aponeurosis of the external oblique muscle, the external abdominal ring, with its pillars and intercolumnar fascia, the hernial sac, if it has descended through the external ring, external surface of Poupart's ligament, the under surface of the flap

fascia, and the internal surface of Poupart's ligament. (Fig. 3.) I consider the congenital deficient origin of the internal oblique and transversalis muscles one of the most frequent and important causes of oblique inguinal hernia. Inspect these structures carefully, and now determine whether the operation is to be typical or atypical. When the structures are well defined and not too much weakened by pressure atrophy, a typical operation can be proceeded with.

Third Step.—This step deals with the sac and its contents; the cord, cremasteric muscle, and subserous lipomata.

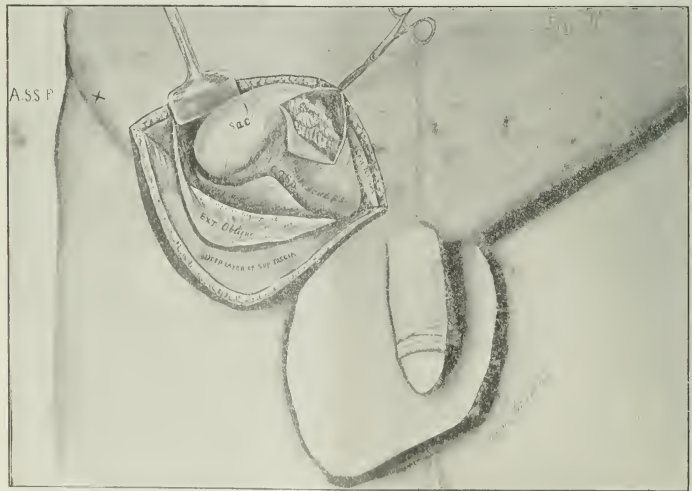
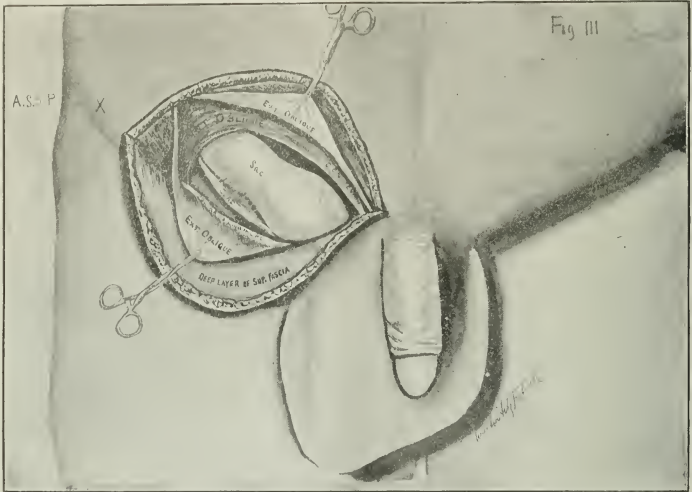
The sac is carefully dissected from the cord and internal ring; it is always opened (Fig. 4), contents inspected and dealt with, and ligated high up over the inserted finger (Fig. 6), cut off, and the stump dropped. In atypical operations the sac is usually preserved, as recommended by Macewen. If the sac be congenital, divide it in two, the distant half to form a tunica for the

testicle and the proximal to be treated as above mentioned.

When omentum is found within the sac it is liber-

ally withdrawn, tied en masse, cut off, the stump covered with its own peritoneum and returned within the abdomen. (Fig. 5.) This decreases the intra-abdom-

inal pressure and lessens the tendency to a return of the hernia. At this stage of the operation when the sac is opened, it is frequently found advantageous to place the



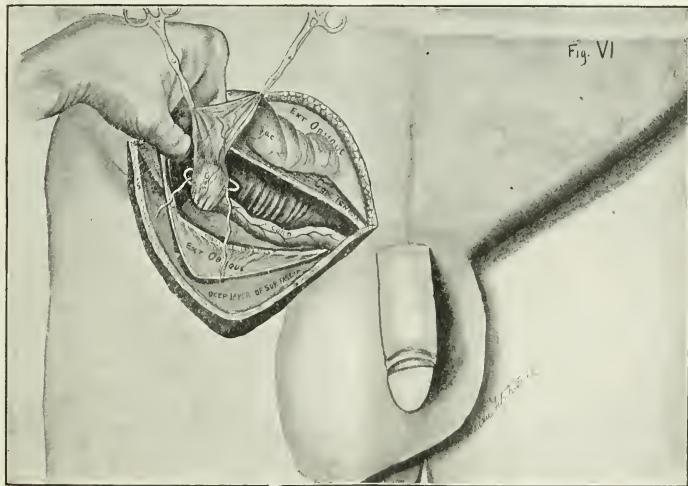
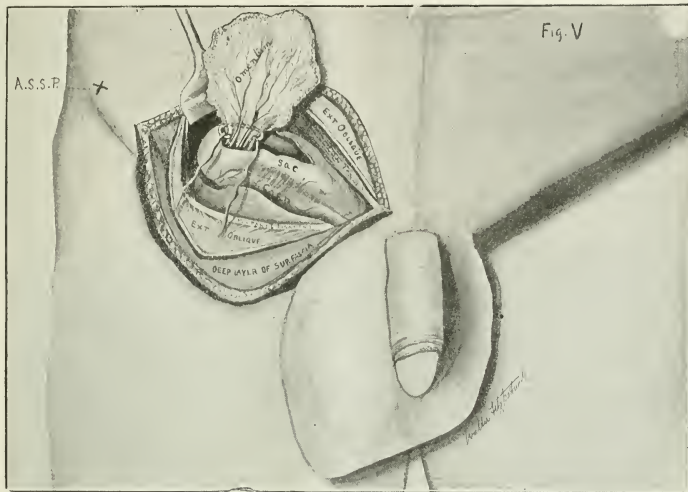
ally withdrawn, tied en masse, cut off, the stump covered with its own peritoneum and returned within the abdomen. (Fig. 5.) This decreases the intra-abdom-

inal pressure and lessens the tendency to a return of the hernia. At this stage of the operation when the sac is opened, it is frequently found advantageous to place the

patient in the Trendelenburg position to prevent protrusion of and injury to the intestines. The cord is not disturbed. I have never been satisfied

with the raising and transplantation of the cord. In more cases than have been recorded the testicle has come to grief by this unnecessary procedure. Tearing the

nor brilliant surgical results to justify its continuance. Leave the cord alone, for it is the sacred highway along which travel vital elements indispensable to the perpet-



cord out of its bed is without an anatomic reason to recommend it, a physiologic act to suggest it, an etiologic factor in hernia, congenital or acquired, to indicate it,

uity of our race. The veins in the cord are not disturbed, unless a varicocele complicates the hernia. If the cremasteric fibers are unduly thickening the cord,

they would better be removed along with adventitious tissue that is not unfrequently present.

An abnormal quantity of subserous adipose tissue is often deposited around the sac and cord and along Poupart's ligament, an etiologic factor in hernia, and if not removed tends to cause a return of the hernia. A systematic search should be made for fatty aggregations and they should be removed."

Fourth Step.—Restore the structures to their normal positions. The transversalis fascia forms the internal ring. In hernia its fibers have become more or less stretched above and around the cord. The ring in consequence is abnormally large and the fascia bulges outward. To rectify this condition take up the slack in the fascia and make an accurately-fitting ring for the cord by means of a suture, interrupted or continuous. (Fig. 7.) Do not injure the deep epigastric vessels, nor pass the needle too deeply in the direction of the large iliac vessels.

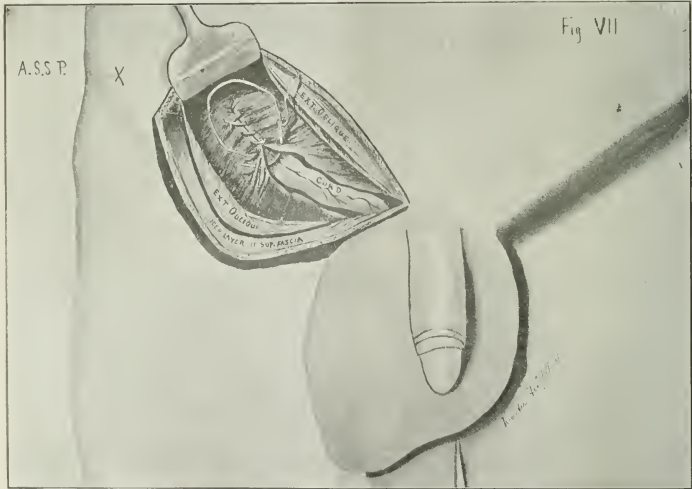
and coapt all its structures, like to like, especially the deep layer of the superficial fascia. (Fig. 10.)

COMMENDABLE FEATURES.

The different structures in the abdominal wall are placed in their normal relationship. a. The tying of the sac restores the normal rotundity of the peritoneum. b. The suturing of the transversalis fascia forming a new internal ring at the same time obliterates the hernial infundibuliform process. c. Sewing the internal oblique and transversalis muscles to Poupart's ligament secures a normal origin for them and they then find perfect protection to the internal ring cord and canal. d. The suturing of the separated fibers of the aponeurosis of the external oblique protects the underlying muscles and cord, while the skin flap covers all.

2. The four lines of suture are not opposite each other, thus securing an overlapping of the weak parts—lines of repair—by normal tissues.

3. The semilunar incision has great advantages: a.



The internal abdominal oblique and transversalis muscles suture to the internal aspect of Poupart's ligament, and restore their normal origin. I usually freshen the lower border of the muscles and scarify the surface of Poupart's ligament to insure firm union, and extend the sewing fully two-thirds down Poupart's ligament, which is the normal origin of this muscle in the female. Take care not to split Poupart's ligament by grasping with the needle the same longitudinal fibers each time. (Fig. 8) It is surprising how easily these two structures come together without the least discernible tension, and it is gratifying to observe how perfectly these powerful muscles cover and protect the internal abdominal ring and inguinal canal. (Fig. 8½.)

Bring together the separated edges of the aponeurosis of the external oblique muscle. Restore the external abdominal ring. (Fig. 9.)

In bringing the skin flap into normal position, be sure

The hernial area is uncovered as in no other way, thus affording an accurate observation of structural relationship, etiologic factors and pathologic conditions. b. There is less tendency of skin infection, extending to the deeper structures. c. Should, unhappily, a return of the rupture occur, there is no scar over it and a truss can be better borne.

4. Of all the operations I have performed, this is the simplest and easiest to execute. There is a good scientific reason furnished for every step in the operation.

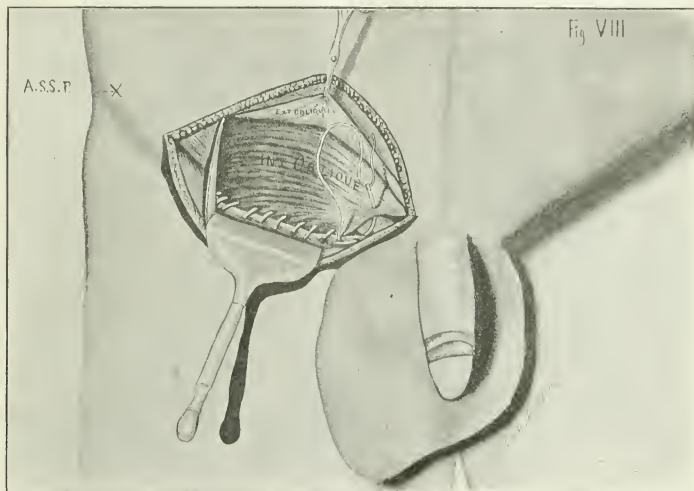
5. Results so far are excellent. In the last eighteen months I have performed the above operation sixty-four times, counting each case of double hernia as two operations. There have been no relapses as yet. I do not wish to say that recurrence can not take place. The ages of my patients varied from 5 to 76 years; station in life, from poorhouse cases to the most affluent. Seven hernias in 4 men were complicated with enlarged pros-

tate, where at the same time I performed gonangiomy; 4 were strangulated; 1 (double) had chronic gonorrhoea; 2 cases had non-descending testicle; 4 had varicocele; 2 had a femoral and umbilic hernia; 1 case had an epigastric and a femoral hernia as well, all three operated on at the same time; and 1 had oblique inguinal congenital, and an acquired direct hernia on the same side.

There was one death on the fourth day after the operation—an old man, 74 years old. He had enlarged prostate, chronic cystitis, diseased kidneys, etc. The effect of the anesthetic was most likely the cause of death. Three cases suppurated, 2 had chronic gonorrhoea and the third had chronic cystitis. In 61 out of 64 cases primary union occurred. All the strangulated cases healed by first intention. Rubber gloves were used in 3 cases only—six operations. In doing the rest of these operations with bare hands, the fingers were allowed to touch the tissues as little as possible.

With a special flat, ruled probe accurate measurements were made on the operating table to ascertain: 1, the length of Poupart's ligament; 2, the length of origin of the internal oblique muscle from Poupart's ligament; 3, size of "Ferguson angle" and position of internal ring.

In the sixty-four operations the internal abdominal oblique and transversalis muscles were deficient in every case. To differentiate between the border of the internal oblique and the fibers of the cremasteric muscle a blunt dissector or protected finger is passed underneath the conjoined tendon and made to travel rapidly to Poupart's ligament, well under the border of the muscle, thus sending the cremasteric downward and hugging the main muscle to its origin, and then the measurements are taken. The origin—which is the main thing—of these two muscles was deficient in every case, the average length being $1\frac{1}{2}$ inch. It was rare to find an



The wound was occasionally cleansed with salt, and the skin with bichlorid solution (1-2000). In about half the cases chromoform catgut (Nos. 0, 1, 2 and 3) was used in skin, as well as in deeper structures. The last six months I have discarded Nos. 2 and 3. If additional strength is deemed necessary the catgut is used double. Horsehair and silkworm gut were the other materials used for the skin. Different stitching methods have been employed, viz., interrupted and containing in the deeper structures, and for skin I used external interrupted, subcutaneous interrupted, external continuous and subcutaneous continuous. Half the stitches were removed on the sixth or seventh day, the rest within ten or twelve days. The patients were kept in bed from twenty-one to twenty-eight days, enjoined not to assume any work for six weeks after operation, and advised to wear a broad support—no truss—for three or four months.

origin of 2 inches; $\frac{1}{2}$ or 1 inch was much more common.

CADAVER WORK.

As already intimated, I requested Dr. Raymond Custer Turk to execute fifty inguinal dissections in this connection. In support of my "Typic Operation for Radical Cure of Inguinal Hernia" I shall here give a few quotations from his thesis, which clearly establish my claims:

In the course of numerous operations for the relief of oblique inguinal hernia. Dr. Alexander Hugh Ferguson, of this city, has observed: 1, that with but few exceptions there was a marked deficiency in the origin of the internal oblique and the transversalis muscles from Poupart's ligament; 2, that these muscles arising only from the outer portion of Poupart's ligament, with their lower fibers deficient in number and strength, afforded but poor protection, if any, to the internal abdominal ring; 3, that a strong barrier being thus removed, the descent of the hernia through the internal ring and downward along the inguinal canal was greatly facilitated.

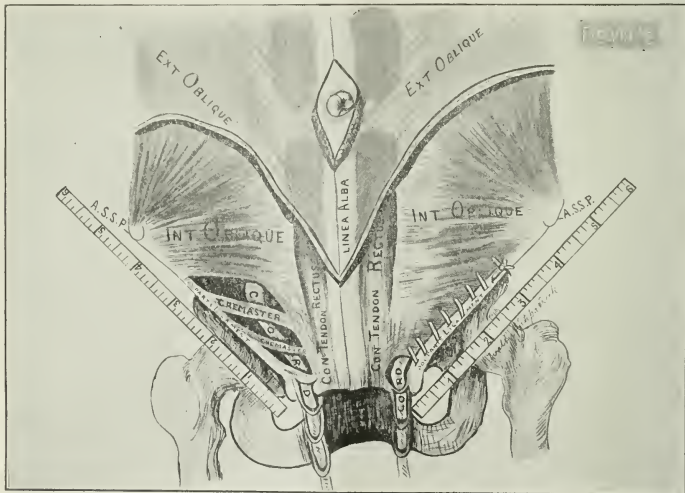
Nearly every writer on hernia makes the statement that the

hernia in its descent pushes the arched fibers of the internal oblique and the transversalis muscles out of its way, displacing them outward and upward. Dr. Ferguson, while granting that the muscles are to a greater or less degree thus displaced, asserts that this displacement would not be possible, providing always that no congenital defect in the internal ring existed, were there not an abnormally short attachment of the muscles to Poupart's ligament; that the fact that the internal oblique, by reason of this deficiency in the origin of the muscle fibers and their consequent abnormal upward arching, fails to adequately cover and protect the internal ring and assist in the support of the abdominal viscera at that point is not altogether an effect of hernia, but rather a cause. He further asserts that in a fair percentage of cases of indirect hernia, a congenital—not an acquired—deficiency in the origin of the internal oblique had been present, and had formed in the individual a predisposition to the hernia, and that the hernia had been then occasioned by the gradual "giving way" of the peritoneum and of the transversalis fascia, or by a more immediate "exciting" cause.

Arguing on this hypothesis, Dr. Ferguson concludes that in an individual of well-developed internal oblique and transversalis muscles having a firm, normal attachment well down

which 27 were of adult males and 9 of adult females, whose ages it was impossible to obtain; 1 of male and 2 of female children, with given ages, and 11 fetuses of both sexes, with ages varying from seven months to full term. In regard to the latter, they were either still-born or had died shortly after birth, for in all cases the divided funis was present.

To insure against possible mistake, the lower border of the muscle passing from Poupart's ligament to the conjoined tendon was carefully exhibited, and the cremasteric fibers differentiated. The length of origin of the internal oblique given, then, is the distance between the anterior superior spine and the lowest point on Poupart's ligament, from which well-marked internal oblique fibers pass over to the conjoined tendon. The spermatic cord, or round ligament, was then followed upward along the inguinal canal to the internal ring, the fibers of the internal oblique being thus divided in the direction of the canal. The infundibuliform process of transversalis fascia was then removed, and the margins of the internal ring defined. A needle or probe was placed as exactly as possible in the center of the ring, and from the center the following measurements were taken: the distance to the anterior superior spine of the ilium; the distance to the spine of the pubes, and to Poupart's ligament. For the length of



along Poupart's ligament, these muscles, especially the internal oblique—by closely covering and protecting the internal ring—offer strong resistance to pressure from within, and thus render the liability to hernia very small.

The lower fibers of the internal oblique, leaving Poupart's ligament and passing inward to the conjoined tendon, normally form, with the ligament, an acute angle. This we have taken the liberty to call the "Ferguson Angle." The lowest point of the muscular origin in its relation—external or internal—to the internal ring, considered together with the degree of the Ferguson angle, goes far to show the relative strength or weakness of the resistance offered by the muscle at the internal ring, and hence should not be overlooked in the study of the causation of hernia.

Acting on Dr. Ferguson's suggestion, dissections were undertaken with a view of determining in the normal cadaver: 1, the average length of the attachment of the internal oblique muscle to Poupart's ligament; 2, the position of the external and internal abdominal rings; 3, the length of the inguinal canal; 4, to estimate the amount of protection afforded the internal ring, and, 5, to note other points of interest in this connection which might come under observation in the course of the work. There were in all fifty cadavers dissected, of

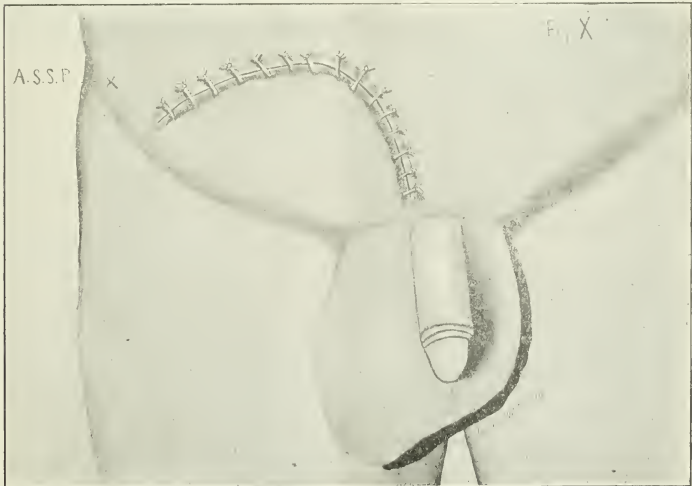
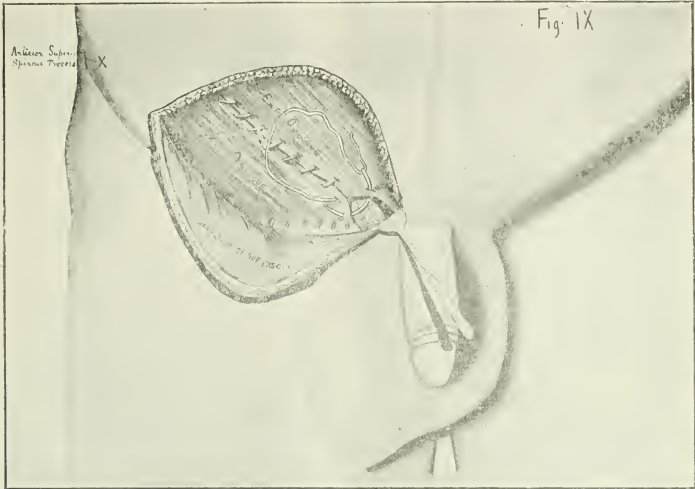
the canal the distance was taken between the center of the internal ring and the outer angle of the external aperture.

The average length of Poupart's ligament was found to be 11.2 cm. (4 $\frac{3}{8}$ inches) in the male adult—25 subjects, Dissections 40 and 43 not being counted in the averages—and 12.5 cm. (4 15-16 inches) in the female adult—9 subjects. The average distance of the apex of the external ring from the pubic spine was 2.1 cm.—13-16 inch—in the male, and in the female 1.57 cm.—5 $\frac{1}{8}$ inch. These measurements present no points of particular interest or importance other than those given by obstetricians and anatomists regarding the greater width of the female pelvis, and the smaller size of the ring in woman than in man. In a majority of the male subjects, however, I found the length of the external ring to be less than an inch (2.5 cm.), the distance usually given, in several but half an inch (1.3 cm.), in one three-eighths of an inch (1 cm.). As shown by the tables, in these dissections, the size of the female ring averaged a little less than three-fourths that of the male.

The average length of the origin of the internal oblique muscle in the male was found to be 8 cm.—3 $\frac{1}{8}$ inches. On comparing this with the average length of Poupart's ligament, it will be seen that the muscular attachment averages a little

more than two-thirds the length of the latter. Gray, Morris and others state that the internal oblique takes origin from the outer half; Quain, that it arises "from the outer half or two-thirds of the deep surface of Poupart's ligament." The

directly on Dr. Ferguson's assertion that the internal ring derives its greatest protection from the internal oblique muscle. For it is well known that the lower (innermost) fibers of the muscle are the weaker, therefore the longer the ligamentous



results obtained here do not bear out the text-book statements, the internal oblique being attached in a majority of the normal cadavers to rather more than the outer two-thirds of ligament. This fact is important, bearing as it does

origin, the farther the weak fibers pass below and internal to the internal ring, the greater is the protection afforded the ring by the strong outer muscular fibers which pass over it.

Dr. Turck was fortunate in getting a full-term male fetus that had a left congenital hernia with retained testicle, while the right side was normal. Having carefully dissected the left side, he then says: "Diagrams 1 and 2, which are life-size, drawn from the general averages, show the relative position of the rings and the length of the internal oblique origin in the male and female. The difference between the sexes is even more strikingly shown in comparison of individual cases."

COMPARISON OF THE AVERAGES OF MEASUREMENTS IN MALE AND FEMALE.

The Doctor, having assisted me at several operations, and possessing a thorough knowledge of the technic of my operation, carried out an interesting and convincing experiment on this fetus, viz.:

Measurements were taken which showed the length of Poupart's ligament to be 3.5 cm., the distance of the center of the internal ring from Poupart's ligament 9 cm., the distance from the anterior superior spine 2 cm., and from the spine of the pubes 1.8 cm. The length of the origin of the internal oblique muscle was found to be but 1.3 cm., about one-third the length of the ligament. It will be seen from these measurements, taking into consideration the 90 degrees of the Ferguson angle, that the internal ring derived but little, if any, protection from the internal oblique. The fact that the 90 degrees of the Ferguson angle persisted when no hernial protrusion was present, and that the angle was further increased when the descent occurred, would seem to indicate that the abnormal upward arching—and weak origin—of the internal oblique was not altogether due to the hernia, but

testine descended easily through the ring. The gut being returned, the cut edges of the internal oblique were united by interrupted suture, without, however, in any way reducing the size of the internal ring, and pressure once more applied to the abdomen. No amount of force, however, produced a protrusion of the abdominal contents, demonstrating clearly the valve-like action of the internal oblique.

Finally, let me draw your attention to two dissections on a male adult, who had a left oblique inguinal hernia.

SHOWING LENGTH OF ORIGIN OF INTERNAL OBLIQUE AND POSITION OF INTERNAL RINGS IN DISSECTIONS 43 AND 44—MALE

Dissections 43 and 44, respectively, of the left and right side of the cadaver of a male adult, are represented in diagrams 8 and 9. In this subject there was present on the left side an oblique inguinal hernia. The exceptionally enlarged ex-

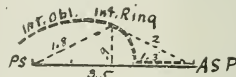


Diagram 6—Left side—Congenital hernia.

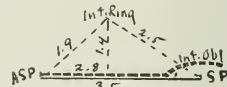


Diagram 7.—Right side—Normal.

ternal ring, the downward and inward displacement of the internal ring, and the marked deficiency in the origin of the internal oblique, together with the largely increased degree of the Ferguson angle—in this case about 90 degrees—are, when compared with the normal relations of the parts shown on the right side, clearly exhibited. That the internal oblique muscle, because of its deficient origin and the pathologic arching of its fibers, failed to protect the left internal ring, is self-evident. That this defect in the muscle was altogether induced, or, we may say, artificially produced, by the hernia, is improbable, especially when the length of origin on the right side (3.1 cm.) is considered. It seems likely that this subject illustrates exactly one of Dr. Ferguson's points, namely, that a congenital defect in the muscle had predisposed the subject to the hernia.



Diagram 1.—General average in male—twenty-five dissections.

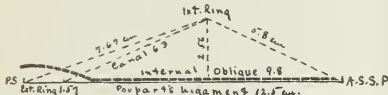


Diagram 2.—General average in female—nine dissections.

that there was a congenital defect and, as such, a contributing cause to the escape of the gut.

Experimentally, the gut being replaced in the abdomen, the processus funiculovaginalis was cut off flush with the internal ring, the testicle being placed between the peritoneum and transversalis fascia well to the outer side of the ring, and the ring closed by interrupted sutures through peritoneum and transversalis fascia. The internal oblique and transversalis muscles were then sutured to Poupart's ligament well down toward the pubic spine, after Dr. Ferguson's method of operation. Strong pressure was then made on the abdomen, forcing the viscera downward into the pelvis and against the lower abdominal wall, especially at the internal ring—the same procedure which had caused the hernial descent before the normal relations of the parts were restored—but no protrusion through the internal ring was obtainable.

For comparison, dissections were conducted on the right side of the same fetus, and the measurements revealed a radical difference in the position of the parts when compared with those of the left side. Diagrams 6 and 7 show the position of the parts on the right and left sides. They represent exactly the measurements given in the other, and when compared clearly demonstrate the greater amount of muscular protection which the right internal ring received. That this child, or man—providing development had gone forward normally—would have had a right oblique inguinal hernia is altogether improbable.

SHOWING RELATIVE LENGTH OF ORIGIN OF INTERNAL OBLIQUE, AND POSITIONS OF INTERNAL RINGS IN DISSECTIONS 29 AND 30.

After dividing the internal oblique fibers upward to the internal ring, the ring was enlarged to the size of the internal ring on the left side before the latter had been restored, and downward pressure again applied on the abdomen. The in-

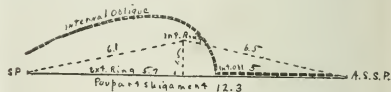


Diagram 8.—Left side—Oblique inguinal hernia.



Diagram 9.—Right side—Normal.

ATYPIC OPERATIONS.

Atypic operations for the radical cure of oblique inguinal hernia are all those which do not in the completed operation leave all structures as they are present in a normal inguinal region. It is not necessary to mention these, but I wish to draw attention to plastic procedures on the sheaths of the rectus muscle, when the conjoined tendon is abnormally thinned out (Bloodgood); to the utilization of the sac (Macewen); and to the employment of the sartorius muscle to strengthen the inguinal region (Ferguson).

Some cases may present themselves—but they must be comparatively rare—where it may be advisable to do plastic work in addition to the typical operation.

PROSTATIC HYPERTROPHY.

RAMON GUITERAS, M.D.

Professor of Genito-urinary Surgery, New York Post-Graduate Medical School; Lecturer in the Medical Department of New York University.
NEW YORK.

SOME OBSERVATIONS ON THE BOTTINI OPERATION.

One of the curses of old age is hypertrophy of the prostate. Why it occurs in some unfortunates and not in others is a question that is difficult to answer, and if it could be answered it would then be possible to learn the cause, a question which now is such a puzzling one to the most learned and observing surgeons. It would seem natural to suppose that those who had in early youth suffered from venereal troubles, or had indulged too freely in the dissipation of life, would be the ones picked out for punishment in old age, but such does not seem to be the case, and in my personal experience it seems rather an unjust reward for the steady, the forbearing and the righteous.

To describe just what this condition is would be to unfold a mystery which the most distinguished pathologists have apparently not yet fathomed. For although many, in describing its pathology, make it easy to understand, others seem to be at variance with their opinion, e. g., some pathologists say that it is always a fibromatous growth and never a glandular one, while others say that it is often glandular.

The cause and pathology are, then, the two great points to be considered, and it would seem that, where there are so many eminent pathologists connected with the homes for aged men, autopsies ought to disclose the latter condition and there should be unanimity of opinion, as pathology is an exact branch. It seems to me, therefore, that the inference must be drawn that the subject has been sufficiently studied and that the pathologists neglect to examine, in a routine way, this little gland tucked down between the rectum and the pelves, in the same way that they overlooked the vermiform appendix before it began to play such an important role in the surgery of the day.

To speak superficially of the pathology as it is considered today, it would seem that enlargements of the prostate are variously classified according to their microscopic anatomy or the clinic symptoms to which they give rise. As the symptoms are chiefly due to the physical qualities of the tumor and are thus mechanic in their origin, it is manifestly more important to classify prostatic hypertrophies by their macroscopic appearance rather than by their microscopic. But at the same time it is worth mentioning that there are supposed to be three chief varieties histologically: 1, myomatous, or fibromyomatous, in which the stroma of the gland is principally involved; 2, adenomatous, in which the glandular elements predominate; and, 3, mixed forms, in which both stroma and glandular tissues are involved.

Such specialization, according to Socin, has but little surgical interest, because in clinic diagnosis it cannot be applied to good account and thus has no influence on prognosis or treatment.

Viewed clinically, prostatic hypertrophies occur in three chief forms.

1. Uniform enlargement in all directions, with the general form of the gland preserved. As the symphysis pubis and the urogenital diaphragm prevent the gland from growing downward to any great degree, the

tendency of the tumor is upward and backward into the cavity of the bladder. Thus about the orifice of the urethra is formed a ring of thickened gland tissue under the mucous membrane of the bladder. These forms of hypertrophy do not reach so great a development as others and are more mild clinically.

2. Irregular enlargement. By far the greatest number of cases belong to this variety. All parts of the gland may be enlarged, but certain portions are much larger than others, and thus many kinds of tumors are formed. The part chiefly involved is that portion of the gland just behind the beginning of the urethra. In the first form mentioned this part fades into the lateral lobes of the enlarged gland without sharp demarcation, but here it forms a tongue which overhangs the internal orifice and is termed by Mercier the "valvule prostatique." This increases to a large independent tumor which is separated from the rest of the gland by deep grooves, and thus gives rise to the well-known "middle lobe" of the prostate.

If both lateral lobes be enlarged at the same time, we have a threefold gland clearly marked, with an egg-shaped tumor on each side and a triangular pyramid behind; an arrangement which gives to the urethral orifice a "Y" shape, with the stem forward and the legs backward. The surfaces of the tumors may be smooth, or, more frequently, they are irregularly prominent, as if made up of a number of smaller tumors which project into the bladder. These nodules may separate and remain as free bodies under the mucous membrane of the bladder. The anterior commissure of the gland is seldom the seat of the hypertrophy, because there are but few if any glandular elements presented here.

3. The third form occurs when all the gland is normal except in one small area, and is termed the localized variety. It is a very rare form.

As the prostate hypertrophies, the orifice of the urethra becomes elevated, and the return flow of blood from the vesical veins is impeded by pressure on the prostatic plexus. This results in imperfect evacuation of the bladder, and consequently in residual urine. Cystitis develops, as is evidenced by a frequent desire to urinate—due to irritation of the neck of the bladder from venous congestion—and the other symptoms usually present. If the hypertrophy continues, these symptoms increase or are replaced by graver ones, and we have dilatation of the bladder, hypertrophy of the muscular and fibrous coats, and the formation of diverticula; dilation of the ureters and pelvis of the kidney, congestion and catarrhal inflammation of the entire urinary tract, with an accumulation of the urinary and inflammatory products, and perhaps septic inflammation extending from the bladder to the kidney—pyelonephritis—resulting in chronic uremia and death.

Thus we see what conditions must be relieved in order to benefit our patient. His general health should be improved; his bowels regulated, and his skin kept active by warm baths; his clothing should be warm, to prevent taking cold, and he should eat moderately and drink plenty of water. His urine should be kept in the best possible condition by the use of internal urinary antiseptics, as the benzoates, the salicylates, boric acid, etc. Oleum gaultheriae, eucalyptus, and urotropin are also of great service. Locally, his bladder should be emptied by the catheter twice a day and washed out with a boric acid solution; other antiseptic solutions, as permanganate of potassium, nitrate of silver, and borolytol, being used at intervals. When the patient has been brought into the best possible condition gen-

*Presented to the Section on Surgery and Anatomy, at the Fiftieth Annual Meeting of the American Medical Association, held in Columbus, Ohio, June 6-8, 1898.

erally and locally, an operative procedure can be considered, but an operation should never be performed until palliative means have failed.

Ligation of the internal iliacs, resection of the vas deferens, castration, prostatectomy, and the formation of a suprapubic fistula have all had their day and advocates, and the mass of practitioners seem now to be coming to the opinion that the operation by the Bottini galvanocautic incisor is in most cases the quickest, the simplest and the best.

This instrument was devised by Bottini of Pavia. When he performed his first operations—1875—he made use of the so-called “cauterizatore prostatico,” representing an instrument of the shape of a catheter of medium caliber, with a short beak, the latter carrying on a porcelain disc a platinum plate about three-fourths of an inch long. With this plate, made red-hot by the electric current, he cauterized the prostate thoroughly at different spots, if necessary repeatedly. When the eschar had been pushed off, improvement often began to set in; at times it took thirty days before the patients could notice the effect of the interference.

Two years later he was able to publish five successful cases treated in this way. With increasing experience, he discarded the cauterizer and made use only of the second instrument, the “incisore prostatico,” which removes the mechanic obstruction to the outflow of the urine at the neck of the bladder by slowly burning a groove or grooves through the same, and not by superficial destruction. This instrument has a male and female shaft, not unlike a lithotrite. The beak of the female part forms almost a right angle with its shank, and has along its concave surface a deep groove along which the male shaft glides. The shank of the male arm shows a platinum knife at its distal end, about five-eighths of an inch long, which is drawn along the groove of the female arm, toward the handle, on turning an Archimedeian screw at the outer end of the instrument. A scale (Sc.) attached to the latter admits of exactly gauging the length of the groove to be cut. The instrument further shows the so-called cooling apparatus, which was added to it in 1882. Freudenburg has made a modification of this instrument, which is the one usually used in Germany and this country. It differs principally in having a larger and better-cooled handle, and the water-pipes at a more acute angle to it. It is also a heavier instrument.

This operation has been performed about two hundred times, but I have only found about one hundred well-reported cases, exclusive of my own.

Bottini has performed this operation 80 times, but we have found only 23 cases sufficiently well reported to be of value for compounding statistics. Some of these are so lacking in important parts of their histories and the details of the operation and after-treatment that they convey little to the mind of the reader, excepting that “miracles” have been performed in a certain part of Italy by one Bottini.

In reading over Bottini's 23 wonderful reports here commented on we notice: 1, that no deaths have been reported; 2, that twenty of these patients, who had been suffering for from eight months to six years from prostatic trouble, were cured in from eleven days to three months, and all but one of them, i. e., 19, in less than one month; 3, that these cures have been accomplished by a single cut, 2 cm. or more in length, either in the posterior or one lateral lobe, or often in two lobes, sometimes, though rarely, in three; 4, that the time for the operation varied from forty-five to

ninety-five seconds. The three remaining cases were very much improved.

Any investigator devising an instrument like the Bottini incisor should naturally be proud of his achievement, but it is difficult for a reader in a distant land, accustomed to observing enlarged prostates and the sequelæ of their observation, to arouse his enthusiasm to such a point as to be able to agree with the discoverer of the galvanocautic incisor.

A reader of these reports can easily see how the heated iridioplatinum blade can glide through the prostatic bar burning a furrow through it, and reducing the height of the dam, and he can also understand how by severing and searing the vessels, the blood-supply can be sufficiently shut off to cause additional atrophy. He cannot understand, however, how a chronic cystitis which has existed for months and years can in a few days be perfectly cured, or how tone can be restored to the wall of an atonic bladder in that time.

Bottini, in some of his reports, spoke of the cases having had gonorrhœa, as if he considered it a possible causative factor of the hypertrophy. I do not think that such is the case, and, in reviewing in his mind the patients whom he has treated for this trouble, he can not remember a single one where he could establish a direct relation between the two. As the patients in whom reference to such a relation was made were about forty years of age, or under, it is possible that the symptoms mentioned may have been due to some other prostatic or seminal vesicle trouble rather than to senile hypertrophy.

In speaking of his operations, Bottini says very little about the anæsthetic used. He occasionally speaks of having given chloroform or cocaine, but often makes no allusion to it.

The frequency with which he has resorted to permanent catheterization in after-treatment, sometimes for fifteen days at a time, is a noticeable feature of these reports, and leads one to think that perhaps the bladder remains more tone than is generally supposed by being allowed to contract gradually.

It is gratifying to remark that no cases of syncope, or bladder or renal congestion followed by uræmia developed in these cases, as so frequently occurs in this country.

Another thing that strikes one as most remarkable in reading over Bottini's reports is that in only one case a marked rise of temperature, that is to 104, was mentioned. This was said to be due to malaria. The writer is, however, of the opinion that most such rises of temperature occurring after this operation in cases associated with a bad cystitis are due to septic absorption.

It was interesting to read the report of one of his cases in which a calculus was present in connection with middle lobe hypertrophy. The stone was first crushed, and then an incision made posteriorly with the incisor, it occurs to the writer that it might have been better to first perform the Bottini operation, and later the litholapaxy, as this would allow the operator to insert a larger evacuator, which is so important in litholapaxy.

Meyer has reported twelve cases, the most interesting and instructive that have been described, on account of the candor displayed in their narration, and the skillful way in which he met every obstacle.

In most of the cases he performed but one operation, although in 2 of them he was obliged to operate twice. The results were: 2 cured, 6 improved and four deaths. In most of the cases he made three incisions, and in some

four, all of good length. In the reports a marked elevation of temperature after the operation. In the first a chill was followed by temperature of 103.8, with delirium; in the second, 103.6, orchitis and abscess of testes; in a third, 101; in a fourth, 103. Two of these cases died. One of the cases was interesting on account of the number of operations performed to no avail. They were: 1, vasectomy, no benefit; 2, perineal prostatectomy, no benefit; 3, suprapubic cystostomy for inspection; 4, double castration; 5, Bottini, under ether. The patient finally died. In two of his cases Meyer found it necessary to perform a suprapubic cystostomy. Most of his operations were under local anesthesia, although two were put under a general anesthetic, in one case ether, in another Schleich's.

Freudenburg has performed this operation about thirty times, but only six of his cases are here commented upon. He has done more than any other surgeon, excepting Bottini, to perfect this operation, as he has modified the instrument in a way to make it more generally acceptable to the operating surgeon. He is a careful and conscientious man and a good observer. His results, however, while they correspond with those of the other German and American surgeons, cannot compare with Bottini's, operated on by means of his original crude instrument. This would lead us to think that if Bottini's reports can be accredited, the Freudenburg modification is a failure, but such does not seem to be the opinion of other surgeons, almost all of whom have endorsed the Freudenburg instrument as the best. His reports are intelligible, and he does not claim such perfect cures as does Bottini. He has a tendency, however, to paint the pictures of his cases before operation in a bad light, as if in an apologetic way, to explain the results that may follow. He speaks of many of them as emaciated, run down and in bad condition, with bladder and kidney complications. He usually makes three incisions of fair length, operates under eucaïn and precedes each operation by a cystoscopic examination. Most of his cases have improved. He had two deaths.

Lohnstein has operated 12 times, but only 6 of his cases have been sufficiently well reported to be of use. He usually makes two incisions, one posteriorly and the other through one of the lateral lobes, although he has made them through both lateral lobes, omitting the posterior and anterior incision. He operated twice in 2 of his cases. Of the 6 here reviewed, 5 were improved and one died. One patient collapsed before the operation could be completed. He reports another case that collapsed on being catheterized, illustrating the mistake of too rapidly emptying the bladder. The other 6 cases were only referred to, and not reported in detail, as the results were not permanent.

Simon has reported 8 cases. His reports are very interesting to read, as his methods seem different from other operators. He usually makes one incision, a posterior one, although in some he incises a lateral lobe in addition, and in others he makes three incisions. He does not seem to look at the operation so very seriously, as he performs it on patients in bad condition, suffering from cystitis, nephritis, and arteriosclerosis, having a large amount of residual urine at the time of the operation, and he allows them to return home on the following day—with at times as much as fifteen ounces of residual urine in their bladder—and then treats them in the dispensary. Some of his cases before operation had from twenty to fifty ounces of residual urine, which was very much improved by a posterior incision. He cysto-

scoped one of these cases two days after an operation, and saw a dark groove in the site of the incision; 3 cases were reported as cured, 2 as improved and 3 died.

Crespi reported 6 of Bottini's cases. There is nothing additional to be learned from this group. They were not difficult ones, and all seem to have been benefited; 1 case was operated on twice. The most interesting of his cases is a patient who was first operated on by Bottini's method, followed by two years of relief. He then had vasectomy performed, which reduced the hypertrophy one-half, and was followed by the disappearance of blood and pus from the urine. He was then again operated on by the Bottini method, and improved. Crespi reports 4 more cases, varying in age from 64 to 78 years, 1 of which was cured in a day, another in 3 weeks and 2 others improved.

Morton has reported five cases, all improved by the operation. In each there was still some residual urine present at the last report, and the patients still had frequency of urination at night. Morton made moderate-sized incisions, and operated most consistently.

Hanc reported 5 cases, ranging in age from 58 to 68 and his results were fair. In 1 case he operated twice, and in the other once.

After careful operations, frequency still existed, especially at night, though not in so marked a degree. It is interesting to notice that in the cases operated on twice the bladder still contained twelve ounces of residual urine, and he had to use the catheter.

The report of Bruce-Clarke's 4 cases as given us by Jermoli are incomplete and unsatisfactory. The operations were evidently performed under general anesthesia, and the results were all cures in a short time, notwithstanding the fact that the patients had considerable residual urine, and had suffered from prostatism for a long period.

Cecchecorelli reported 4 cases, varying in age from 41 to 60 years; all had cases of long standing, associated with catheter life; 3 of them were cured in from nine to seventeen days, and the 1 improved for a while and then died.

Lewis reported 2 cases. These were well described. Both were operated on twice, and improved. He used air to inflate the bladder. In speaking of one case after operation, he said that the patient could empty his bladder all but two or three drams, which amount is often found in a healthy viscus. This statement I take exception to, as an unobstructed, healthy bladder should be able to empty itself.

Freeman has reported 2 cases with excellent results. He speaks of 1 patient having considerable bladder irritability after the operation. I am glad to hear this mentioned, as personally I have found it to be the most persistent and obstinate post-operation symptom that we have to contend with.

Lemander has operated in 3 cases from 65 to 77 years of age. They were all of long standing, with symptoms of obstructive cystitis; 1 was relieved, 1 discharged with a permanent fistula, and 1 died three months after the operation. In the first case after one incision of 3 cm. in length, the patient did not urinate for twenty-two hours. The last 2 cases were of especial interest, the first because he was made worse rather than better by the Bottini, and was then improved by a vasectomy. The second has many points of interest: 1, both testes were very much involved by disease ascribed to catheterization; 2, their removal had no influence on the size of the prostate; 3, calculi were found in the bladder, complicating the case; 4, a suprapubic

cystotomy was performed; 5, an incision 1.75 cm. in length was made by the incisor after this, thus enabling the operator to see the action of the cautery knife through the suprapubic opening; 6, a second incision, 3 cm. long, was made by the incisor three weeks later, followed by retention, and, finally; 7, a permanent fistula had to be resorted to.

The reader can only condemn the presence of the assistant's finger in the rectum during the operation, as mentioned in one of the cases, as in order to detect the presence of the instrument he has to press up the anterior wall of the rectum in the region of the prostate, which might cause the heated blade to burn through, making a ureterorectal fistula. In criticising the poor results in these cases it would seem that the incisions were too short, and too few.

Downes, Weber, Chassaigne, Kreisel and Rydygier have also reported cases; most of which were improved. Rydygier's case died four days after the operation, of urinary extravasation, and septic peritonitis, due to catching the back of his instrument in a pocket in the bladder instead of behind the prostate, and thus burning through the serous surface of the bladder. This is an accident that is difficult to foresee, and can only be avoided by making a cystoscopic examination of the bladder some time before the operation.

Rochet has reported two cases. One died and the other was discharged seemingly improved.

The writer has performed this operation 20 times, with 2 deaths. The first 12 were all benefited and reported in the *Medical Record*—of the 8 others, 2 died, a total mortality of 10 per cent; 1 died of chronic Bright's disease and would not have been operated on had not the hospital interne reported the urine negative; death a few weeks after showed the cause to be chronic interstitial nephritis, which had been present at the time of the operation, but not to the knowledge of the operator. The other case died of sepsis. It was due to an accident, and illustrated two important features. The writer had given this operation to the house surgeon and had placed himself behind the operator with the battery. The posterior incision was being made when the writer left his post to look at the battery, which was not working well. After rectifying this, he told the operator to proceed; but during this time the patient had pulled backward, allowing the concavity of the beak to slip over the convexity of the prostate, and the cut was accordingly made through the membranous urethra into the perineum. The result of this was retention of urine, necessitating a perineal section, which was followed by sepsis and death. The two important principles illustrated by this are: 1, that the battery should always be placed on the patient's left, where it can be seen by the operator and easily grasped by him, if necessary, with his right hand; 2, that if the patient pulls away from the operator, as he is liable to do under local anesthesia, the operator must not allow his arm to remain stationary, but must follow up the patient so that the instrument will always remain in the same relative position until the incision is completed.

Of the remaining 18 cases, 15 have improved, and in two of them no residual urine is now present, while in the other 13 only about one-eighth to one-quarter of the amount present previous to the operation now exists; 3 others have been too recently operated on for comment at present. What these patients seem to complain of principally after the operation is irritability of the bladder.

GENERAL CONCLUSIONS.

Castration, vasectomy and iliac ligation are of very little benefit in prostatic hypertrophy.

The choice of operative procedure is between prostatectomy and the Bottini.

In commenting on these two, the writer thinks that the former is by far the most difficult and dangerous; in fact, he believes that in the hands of a good genito-urinary surgeon in equally picked cases, the mortality in prostatectomy would be found to be twice that of the Bottini, and that in the hands of the general practitioner it would be three times as great.

There are certain cases suitable for enucleation and others only for the Bottini.

Those for enucleation are the large, so-called glandular hypertrophies, where the prostate feels like a good-sized tumor by the rectum, and the urethra is felt to be much elongated and distorted by the hypertrophy. Here the operator can find something to enucleate and the pieces come away easily. The writer has performed the Bottini operation in a few of such cases on account of the refusal of the patient to undergo an enucleation and the benefit resulting from it has been surprising to him.

The cases calling for the Bottini are more those where the hypertrophy is not marked, but where rectal examination shows a marked induration, and urethral examination shows middle lobe impingement. In many of these cases an enucleation would be impossible, while in no case of the large tumor variety would a Bottini operation fail to be of benefit.

In comparing the mortality of prostatectomy with the Bottini in the future, statistics may show it in the latter to be as great as in the former, the same as is noticed in comparing prostatectomy with castration.

One of the reasons for this will probably be because both castration and the Bottini are considered easy operations, and ones that can be performed in almost any case, whereas the prostatectomy would be reserved for especially chosen and suitable cases.

Bottini is in a measure responsible for looking so lightly at the danger of this operation, as his reports resemble those of cases touched by a fairy's wand. Willy Meyer, in one of his articles, said: "It is almost incredible that this, as it seems, splendid operation should have been practiced for twenty-two years by virtually only one gentleman—namely, the inventor of the method, Enrico Bottini of Pavia—and that, in spite of the fact, he has repeatedly drawn the attention of the profession to his work."

It seems to the writer that the surgeons reading Bottini's report would consider them too good to be true, and for this reason have not paid sufficient attention to them. There appears to be among the other Italian observers engaged in this work a tendency "to follow the leader," and to paint the reports of their cases in the same rose hue. The German and the American observers, however, go into this subject in a more thorough and scientific way. They describe their operations more clearly and do not hesitate to mention their failures and deaths. The standard of what a cure is after an operation seems to vary; some place all under this class who do not die, while others consider the same as simply improved.

It would seem from reading over these reports that the Italians must have a better tolerance for the operations than the Germans and Americans. Such is not the case, however. The writer has a surgical service in the largest Italian hospital in this country, and 25

per cent. of the cases operated on have been Italians, notwithstanding which he has observed less improvement in them than in others.

The class of cases demanding this operation comprises those in whom there is nearly a complete retention of urine and the patient has to depend almost entirely on the catheter, also those with the tenesmus and irritability of the bladder so great that catheterization and washing out of the bladder are not able to relieve it; again, when the cystitis is very marked or troublesome, and when hematuria is a frequent symptom. An increasing amount of residual urine is another urgent cause, or when catheterization is followed by hemorrhages or bad attacks of cystitis. The cases in which it is contraindicated are where the kidneys are badly diseased, medically or surgically, or where arteriosclerosis is marked and where the heart action is weakened through valvular or fatty changes.

The question of anesthesia is an important one. The writer does not think that either cocaine or eucain relaxes spasm sufficiently, and, besides this, he is sure that most patients suffer considerably when operated on under their influence. Cocain is also said to be dangerous, and eucain in one case was found to have produced syncope. Of the general anesthetics, ether is bad for old men whose kidneys are at fault, and chloroform is bad for the heart. This has led the writer to give nitrous oxid gas in a number of his cases. The patient is put under quickly and comes out almost immediately. The danger in the hands of a man who understands its administration is nil.

In Colton's Dental Bureau, in Cooper Union, N. Y., it has been given over two thousand times without an accident. The patients have at times been kept under its influence for over two hours. It can be given on a full stomach.

In the ordinary operation three cuts are usually made. The first one is always posterior, the two others are on either side in cases of lateral lobe hypertrophy. In cases where the enlargement is irregular and situated principally in the middle lobe, the second incision should be anterior and the third through the larger of the lateral lobes. The posterior incision is usually 3 cm., the anterior 2 cm. long and the lateral 2.5 cm. The time for each cut is usually eighty or ninety seconds, and the strength of the current from forty-five to fifty amperes.

Immediately after the operation the patient may be allowed to pass water, if he desires, and he should be put to bed. Patients are generally able to walk from the table to their beds, although it is safer to carry them.

The internal treatment consists in urinary antiseptics, diluents, and antispasmodics, if necessary. As a diluent, water taken in large quantities is usually sufficient. If it is found, however, that the patient will not drink much, and that the amount of urine passed is below normal, its flow should be further stimulated by a mild diuretic, and for this purpose I am in the habit of giving a mixture of acetate of potassium, sweet spirits of nitre, three times a day in a glass of water. As a urinary antiseptic, I generally give salol in ten-grain doses three times a day, or urotropin in the same strength, the latter preferably when the urine is foul and ammoniacal. Benzoate of sodium and benzoic acid in fifteen-grain doses are also of service.

The antispasmodics are codein, morphin and belladonna. These are given for frequency, pain, tenesmus or burning. They may be prescribed singly or com-

bined, and afford the patient a great deal of relief. Codein may be given alone or in combination with belladonna, and perhaps benzoate of sodium. Morphin is rarely used, and then only for pain. It is very efficacious in combination with the extract of belladonna, a quarter of a grain of each, in suppositories at night, in cases where there is considerable frequency, pain, burning, and tenesmus. The diet should be liquid for the first few days, then semisolid soft—and full diet at the end of the week, if the patient has no rise of temperature and is feeling well.

If retention of urine occurs, as it frequently does, a catheter should be passed into the bladder and allowed to remain for twenty-four to forty-eight hours. On withdrawing the catheter, if the patient is still unable to pass much urine, he should be catheterized regularly until the sloughs have been passed, when, if he is still unable to urinate, a second operation should be performed. If the patient has complete retention and nothing can be passed into his bladder, he should either be aspirated suprapubically, or a perineal section performed.

If there is much hemorrhage, it can usually be stopped by a hot irrigation, and if not, a perineal section should be performed, after which a thick-walled perineal tube can be inserted into the bladder, around which gauze can be packed, thus making pressure between the sides of the tube and the cut posterior urethra.

The bowels should be moved by salines on the second day, after which they should be kept open for some days.

An elevation of temperature usually takes place on the night after the operation or on the following day, rising from 100 to 105 F. This rise generally goes down to normal after the bowels have been moved, but I have seen cases with a temperature of from 99 to 102 for some weeks after the operation. In such a case the fever usually disappears after the sloughs have been thrown off.

Where the bladder and the kidneys are very much involved a continuous temperature may indicate a disease of the latter organs, which should then be treated accordingly. Extravasation of urine and perineal abscess may occur, but it is improbable, as the tissues are practically seared and sealed by the burning process.

ESTIMATION OF HEMOGLOBIN.*

A COMPARISON OF THE VARIOUS METHODS.

BY B. M. LINNELL, M.D.

CHICAGO.

Most of the effort heretofore to arrive at an estimation of hemoglobin in blood has been made by means of the various color tests. These tests have multiplied until the catalogue of the various instruments resembles the list of "sure cure" remedies for the hives. This fact alone shows a dissatisfaction on the part of the clinician with the results obtained by the various color methods. The two instruments with which we are most familiar in this country are Von Fleischel's hemometer (the German), and Gower's (the English instrument.) The use of these instruments has demonstrated the sources of error as enumerated.

1. In color tests in general:

a. Two eyes rarely agree in accurate estimation of varying shades of color, thus producing individual variations.

*Presented to the Section on Practice of Medicine, at the Fifteenth Annual Meeting of the American Medical Association, held in Columbus, Ohio, June 6-9, 1899.

5. Eyes of the same individual vary at different times, due to fatigue and influence of varying intensity of light.

I have made a test of 225 cases with students examining Fleischel's hemometer. The apparatus was prepared and placed where each student made the color comparison for himself without the knowledge of the other. The variations between the various readings were about 20 per cent. Considering this error might be due to the inexperience of the observers, I made the test at a meeting of medical men, most of whom were accustomed to the use of the hemoglobinometer. The readings were as follows: A, 35; B, 39; C, 50; D, 48; E, 32; F, 30; G, 35; H, 39; I, 35; J, 42; K, 35; highest reading, 50; lowest, 30; average, 38.2; largest number of agreements of reading at 35, four. Two of the readers, F and J, are frequent users of this method, and their readings differed 12 per cent. The greatest variation was 20 per cent., the same as obtained by the students. A part of the error is accounted for by the limitations of the color test and part by the inaccuracies of the instrument used (Fleischel's).

The variations of the same eyes at different times is easily demonstrated by the observer making several readings of the same specimen, covering up the indicator while doing so each time. In my own case I have found variations of 10 per cent. with different readings of the same specimen. I have oftentimes found errors of like observation in others accustomed to use the hemoglobinometer.

2. Fleischel's instrument:

a. The errors common to color tests.

b. The normal standard of hemoglobin as represented by the instrument is too high for healthy American subjects; 80 to 85 per cent. represents nearer the normal of healthy male lives between the ages of 20 and 30, as indicated by Fleischel's instrument in this country.

c. The quantity of blood used in the test is so small that the least amount of variation in quantity used causes a great amount of variation in percentage. A difference of percentage results with a bulging or depression of the blood at the ends of the capillary tubes.

d. The area over the glass wedge under observation represents a variation of 20 per cent. The middle of the field must be picked out to obtain a correct estimate.

The above considerations have to deal entirely with the sources of error. The objections to the use of the instrument are the cost of the instrument and the necessity of using artificial light in the comparison.

3. Gower's instrument:

a. Errors common to color tests.

b. The colors of the standard tube and the hemoglobin solution are not always the same, and sometimes can not be brought to be the same. The hemoglobin often has a grayish-pink color, while the standard solution is more of an amber-pink to my eye. This makes great difficulty in comparing the shades. It makes it impossible in some cases to make an estimation of the hemoglobin.

c. In adding water to dilute the hemoglobin, one is apt to overdilute the solution, thus making it necessary to repeat the test.

d. One cannot make a number of estimates of the same specimen and strike an average.

It has the advantage of the use of a large quantity of blood, thus diminishing this source of error. The surface for comparison is larger and more uniform. The tests can be made by either natural or artificial light. It is a much cheaper instrument.

A rough method of estimation, which is a good one, is by comparing the patient's blood on a towel, hand-

kerchief or white filter or blotting paper. This has the disadvantage of the general color test, and no table of comparison, but is easily and quickly made, and will be explained more in detail later on.

There is evidently a need for a more mechanic method of determining the percentage of hemoglobin. This seems to have been found in Hammerschlag's method, which consists in placing a drop of blood in a solution of benzol and chloroform. Add one or the other of the solutions to the mixture, as the drop floats or sinks, until it remains stationary in the center of the solution; then the specific gravity of the mixture will be that of the blood. This is a modification of the method of Roy, who used a number of bottles of salt and water graded from 1025 to 1075. Lloyd Jones elaborated this method, using glycerin and water, and had a case made containing twenty bottles of solutions of different specific gravity, which he called a hemobarometer. Owing to its simplicity, Hammerschlag's method has come into more general use. This is the method used in my experiments. The normal specific gravity, as determined by Hammerschlag, is 1060.5 in healthy males of adult life. As shown by the tables in 28 observations made on 8 different persons, the average is 1060.3, the maximum observation being 1065, and the minimum 1056. The specific gravity in females is lower. In the 3 cases tabulated the maximum specific gravity is 1059.5; minimum, 1055; and average, 1057.5. The ages are all between 21 and 55, only one above 33.

In order to ascertain the amount of variation which takes place during a day under ordinary conditions, I made 17 tests on a male subject 21 years of age and in good health, during sixteen hours. The tests began at 8:30, after a breakfast, one hour previous, consisting of 1 cup of coffee, 2 slices of bread, 1 dish of rhubarb. As seen by the table, the highest sp. gr. was 1065, taken at 8:30 a. m. The next specimen, taken at 10 a. m., was 1061. I have reason to believe the first test was wrong, as it did not reach such a high mark at any other time during the day. The most of the estimates were about 1061. Dinner, with 1 glass of water, 1 cup of coffee, and 6 oz. of water one hour later as fluids, was followed by no marked fall of sp. gr. The lowest point was reached at 5:30 p. m., and was 1058. After this test the subject took a half hour's spin on a bicycle, in the open air, coming back in a mild perspiration. The hemoglobin was found to be 1063. This was the greatest change during the day, a rise of 5 points. At 9:30 p. m. observations were resumed; sp. gr. 1061. The subject drank 18 oz. of water after test, which was followed by a fall of 1 point, to 1060, but returned to 1061 in two hours. The general average of the readings for the day was 1060.8. The blood count at 3:10 p. m. was 5,600,000; hemoglobin, Gower's, 96 per cent. The variations under normal circumstances are very slight, only 2 to 4 points. These observations were made at different points about town after riding, walking, sitting quietly, eating and drinking.

I now present a table showing a comparison of the sp. gr. with tests for hemoglobin and the counts of red blood-corpuscles, both in health and disease. It will be noted that the sp. gr. varies more with the variations in percentage of hemoglobin than with the corpuscle counts. In Case No. 2 is this especially true, the reduction due to secondary anemia, a case of pulmonary tuberculosis. The examinations were made at the same sitting, but the blood was taken from different locations on the body, namely, lobe of ear, great toe and finger. The sp. gr. varied 7 points, but so did the other esti-

mated in about like proportion. The variations were probably due to the fact that the blood did not flow so freely from the toe and ear as from the finger.

In Case No. 1, a normal, healthy subject, the difference is not so marked, only 1.5 points. The hemoglobin percentages did not vary so much, while the counts vary about the same as in Case No. 2.

In Case No. 3 the sp. gr. was 1044.5, while the five hemoglobin readings varied from 37 to 47, all made by different persons and with the same specimen, except one reading by Gower's method, which was 40 per cent., the average of all being 40.7, corresponding closely to Hammerschlag's table.

In Case No. 4, one of chlorosis in which the count was not recorded, the sp. gr. was 1046, and the average hemoglobin percentage 49.7 per cent. (Fleischel's), which again corresponded closely to the table. In Case No. 2 the average of the sp. gr. tests was 1051.3, the hemoglobin, 70.8, and count 4,300,000 reds, the sp. gr. being a little lower than the corresponding hemoglobin percentage in the table.

In taking the sp. gr. I found that a great saving of time was accomplished by having the necessary apparatus collected and kept together in the following described case, and in bedside examinations some such arrangements is quite necessary to secure the best results.

The apparatus consists of an ordinary urinometer and flask, 3 bottles with cork stoppers, one each containing chloroform, benzol, and a mixture of the two, 2 simple pipettes, a stirring rod, a few sheets of round filter paper, a pipette graduated to 20 cm., with rubber tubing and mouth-piece, a glass slide and cover-glasses, one-half-dozen pen-nibs, all arranged in a case with compartments for each article.

In making the test the following points are suggested for obtaining the more rapid and accurate results:

1. All of the apparatus must be perfectly clean and dry, especially the urinometer glass. The drop of blood will cling to the particles of blood or lint left in the glass and often flatten itself against the sides.

2. Before obtaining the drop of blood from the patient the benzol and chloroform mixture should be poured into the urinometer glass and brought to a little above that of the blood as estimated. A rough estimate may be made in two ways: 1. Compare a drop of the patient's blood with that of one of a known sp. gr., namely your own. If the colors differ widely, dilute a drop of your own blood by means of the graduated pipette, using ordinary clean water as a diluent, to about 50 per cent. The mixture can be made on the glass slide which accompanies the case. Compare this with the patient's blood. The sp. gr. of blood with 50 per cent. hemoglobin was about 1045.5. If the patient's blood is lighter than the central specimen diluted to 50 per cent., then the sp. gr. of the chloroform-benzol mixture should be started below 1045.5. If darker, the mixture should be higher. This method is recommended only when the blood seems to be greatly reduced in hemoglobin, and it presupposes knowledge of the per cent. of hemoglobin of the examiner's blood. This method forms a good test for a rough color estimate. By practice one becomes expert in the estimation.

3. The finger is usually selected by us as the most reliable place to obtain sufficient blood with one puncture. The side of the finger is preferred, as the subsequent discomfort is not so great.

4. The best and cheapest instrument for producing puncture is a sharp pen-nib with one point removed. A

new one can be used with each patient, and thus the danger of infection is minimized. The same precautions in regard to not squeezing the blood out must be observed in this method as in all.

5. The mixture should be slightly above the sp. gr. of the blood, if possible, because in adding chloroform it is much easier and quicker to mix the two. As the heavier chloroform passes down through the mixture, it is partially mixed and is easily completed by slightly stirring with the glass rod. The lighter benzol, on being added, drop by drop, remains on the top, and either the urinometer glass has to be placed against the hand and carefully tipped upside-down, which is the better method when needed, or the contents must be agitated greatly with the glass rod in order to procure a uniform mixture.

6. In making estimations, I have found that the percentage of error is greatly reduced by using drops of about 10 cm. I draw about 15 cm. of blood up into the tube and then blow out 2 or 3 cm., wiping it away, then put 10 cm. into the mixture, leaving 2 or 3 cm. in the tube. The first and last portions of the blood are apt to contain either air or the water used in cleansing the pipette. Smaller drops of blood, however, do not vary the results materially if accuracy of technic is observed.

7. In mixing the benzol and chloroform it is much quicker and easier to use pipettes, pouring the solutions in drop by drop. In pouring out of a bottle it is very easy to pour too much and have to go over the process with the other solution. Then, the pipettes are more easily handled. In my laboratory I use bottles with ground-glass caps, with pipettes cut in lengths to suit and kept in the bottle.

8. The best kind of urinometer is one graded from 1025 to 1075. The spaces are wider, hence greater accuracy of reading is obtained. An ordinary urinometer, which is accurate up to 1060, will do, as pathologic conditions are such that readings with a higher sp. gr. are of no special clinic significance. The urinometers should be tested carefully to 1060. Most of them I have found erroneous in the higher numbers of the scale. The urinometer glass should stand firm and have a smooth rim to prevent the leaking of the solution when turned up against the hand.

9. In place of the graduated pipette a "white corpuscle counting" pipette from the haemocytometer may be used, or an ordinary glass tubing drawn out into a pipette. The case is so arranged that the corpuscle counter may also be carried to the bedside and a specimen taken for examination. The contents are prevented from escaping by a rubber band placed about the ends of the pipette. The case is made as small as possible, compatible with convenience and accuracy in its use. It may be obtained from Sharp & Smith, instrument makers, Chicago.

We need a system of estimating hemoglobin which will eliminate the necessary inaccuracies of color comparison.

The tests seem to show that the sp. gr. varies with the percentage of hemoglobin. Variations under normal conditions in blood are not great enough to interfere with the value of the sp. gr. test. Hammerschlag's is mechanically accurate and eliminates the necessary errors of color comparisons. The errors made in taking the blood are common to both methods.

DISCUSSION.

Dr. JEDSON DALAND, Philadelphia So far as the color

tests are concerned, I believe the reader of the paper is correct when he states that all are objectionable. A certain percentage of error in the use of von Fleischel's instrument can be reduced. I have come to the conclusion that very frequently, in making our comparison by looking through the entire field of the cylinder of distilled water and diluted blood, the attempt to cover this broad surface in one view causes a certain percentage of error. About a year ago, at a meeting of the Philadelphia Pathological Society, I suggested that a cap be placed on the cylinder, containing a slit measuring one-eighth inch in width, made of any material, which would limit the field of observation, and thus reduce some of the errors of the instrument. Another error to be overcome is the distance at which the eye is held from the instrument; a distance of eight or nine inches is the best. A number of other interesting sources of error regarding von Fleischel's instrument might be mentioned, but time will not permit. I agree with the reader of the paper that we do not usually get 100 per cent. of hemoglobin; the percentage is usually lower.

It is also well to remember that if two pipettes or more be used, the reading will be more accurate in cases where the percentage of red blood-corpuscles is less than 50. Gower's instrument is seldom employed; it is subject to a wide range of error. Occasionally the colored tube of gelatin is decolorized in the course of time.

As regards the method described, I have had no personal knowledge as to its use. The percentage of blood pigment as determined by various methods differs greatly. From a long series of observations extending over a considerable period of time, it is necessary to determine which method is the best. The translation of the hemoglobin percentage is subject to considerable variations taking place in the plasma, but this percentage is not very great; it is exceedingly limited. Although it is true that the specific gravity of the blood is chiefly due to its contained hemoglobin, the plasma also contains substances that vary in disease. It is therefore manifest that the specific gravity of the blood should not be considered as the exact equivalent of the amount of blood pigment present.

Dr. GEORGE DOCK, Ann Arbor, Mich.—I would like to corroborate everything the reader has stated regarding the advantages of the specific gravity method. It is easy to carry out. It must be borne in mind, however, that the specific gravity does not always correspond to the amount of hemoglobin present. A large amount of comparative observations with the specific gravity test and von Fleischel's hemometer have shown that hemoglobin chiefly affects the specific gravity, and there are few cases in which the readings do not correspond. Gower's method is much more faulty than von Fleischel's. In using the specific gravity method great care is necessary. If the estimation is difficult to make, a fresh drop should be used as a control, for in a trial which takes some time the density of the drop becomes altered by various causes. I have long taught that if one is limited to one method of estimating hemoglobin, Hammerschlag's specific gravity method should be chosen rather than Gower's instrument. The cap devised by Dr. Daland has for some years been a part of Meischer's modification of von Fleischel's instrument, a modification which also does away with several of the other sources of error in the old apparatus. The instrument is expensive, but we can hardly give up the estimation of the coloring matter of the blood, and for that purpose it should be preferred to the old apparatus or to that of Gower. The practitioner can, however, get along very well by the aid of Hammerschlag's method, carefully carried out.

Dr. HORACE B. ARNOLD, Boston—I made quite a number of experiments this spring on the effect of chlorosis on the heart, using the color and specific gravity methods in these cases. The results obtained are important, especially in the case of chlorosis, where the hemoglobin has a low percentage; this might have been due to the heart changes or to error in the color tests. In this case there was particular satisfaction in using the specific gravity method. The comparison made between the color test and the specific gravity method by my assistants showed that they ran close. In considering the cases of chlorosis it is important to take count of the blood-corpuscles, because in some cases we find an improvement in the condition with an increase in the amount of hemoglobin, and an increase in the number of red blood-corpuscles out of proportion to the increase in the percentage of hemoglobin. So in this case apparently there is a diminution in the percentage of hemoglobin.

ANGINA PECTORIS.*

BY JAMES DUDLEY MORGAN, M.D.

ATTENDING PHYSICIAN AT GARFIELD AND GEORGETOWN HOSPITALS, ETC. WASHINGTON, D. C.

Pain is so seldom directly associated with serious diseases of the heart that most specialists and practitioners of medicine are wont to treat lightly a patient's anxious inquiry about the heart, and to dismiss the case with no particular guidance or injunction, as one having an imaginary or neurasthenic origin.

Though it has been considerably over one hundred years—1768—since Herbenden gave the name of angina pectoris to a certain affection of the heart, which he declared must be distinguished from ordinary cardiac dyspnea, and a few years later Edward Jenner described some of the morbid conditions, which may be found in this disease, yet there is to-day no one certain and positively accepted statement of the cause of this sudden taking off of a human being, who may have previously complained but little, or not at all, of feeling badly.

Since Herbenden's time nearly all medical writers and clinicians have had something to say of the etiology of angina pectoris. Desportes located the disturbance in the vagus; Laennec in the sympathetic; Jolly in the intercostal nerves; Brouillard in the phrenic nerve; Kirsch in the spinal cord; Piorry and Cahn placed it in the brachial plexus; Romberg, Peter and Lancaux in the cardiac plexus; Leyden, Potain and Charcot express opinions not in harmony with each other; v. Basch declares it to be sclerosis of the coronary arteries; Osler says that the disease is associated more particularly with sclerosis of the root of the aorta and changes in the coronary arteries and in the myocardium. Constantin Paul, of Lariboisiere Hospital, acknowledges the frequency of atheroma in patients who have died of angina pectoris, but when he considers the large numbers of patients at Bicêtre and la Salpêtrière, who suffer from atheroma and are free from angina, he can not convince himself that the two diseases bear an undeniable casual relation to one another.

Kinnear believes the disturbance is due to hyperemia of the spinal sensory centers. Anders in his late "Practice" concerning the nature of angina, says: "We possess few if any positive data; and conclusive post-mortem evidence in support of the various theories that have been and are advocated is, as yet, wanting."

Theodor Schott of Bad Nauheim, Germany, in a very recent article on the treatment of cardiac neuroses, speaks of: 1, angina pectoris nervosa; 2, angina pectoris vasomotoria, and this complaint he attributes to spasmodic contraction of the vessels, and mentions that besides the disturbances of a nervous character, there exist also other abnormal changes in the heart; 3, a form of angina pectoris he calls vera, and states it is more frequent than the nervosa or the vasomotoria, a statement with which the writer does not believe most practitioners will agree. Musser says angina pectoris in its typical form and in association with diseases of the heart is not of common occurrence. Schott goes on to speak of the difference of the pulse in true angina pectoris, which was not appreciable to the finger and only to be found in sphygmographic tracings and which often indicated arrhythmia, tachycardia and bradycardia. He believes that the most frequent causes of this complaint are arteriosclerosis, chiefly of the coronary vessels, insufficiency and stenosis of the aortic valve, myocarditis, etc.,

*Read before the Medical and Surgical Society of Washington, D. C., April 6, 1896.

but he must confess that as yet the opinions of medical men concerning the nature of angina pectoris vera do not quite agree, but in general we are nowadays led to suppose that this disease is apt to affect the heart, when the latter has been enfeebled before.

These various affirmations and negations of conditions, which are necessarily found or are wanting in this much-discussed disease, are not brought forth to further mystify opinions, but with the desire that we may recall how little we know of angina pectoris and that a free discussion may engender more positive knowledge.

It could hardly be expected that this paper, in the time which is allotted, can take into consideration the numerous pseudo-anginas of the heart, for their causes are legion and spread over and ramify the body from migraine to podagra. It is freely admitted that cases of pseudo and true angina are sometimes associated, and that pseudo-angina may aggravate and precipitate an impending attack of true angina. The onset of this terrible disease is so sudden and startling, the suffering so great and agonizing, the termination so rapid and fearful, that consternation and fear seize both patient and friends. Balfour described the sensation of angina "as if a mailed hand grasped the chest in the cardiac region and squirted through its fingers flashes of excruciating agony."

A male, aged 42, who had previously shown no cardiac disturbance and was otherwise healthy and attending regularly to business, was seized on preparing to take his usual morning bath, with the most horrible constriction and agonizing pain in the chest. Within a half hour, after suffering untold torture with the agonies of pent-up life and suffocation, he died. At the autopsy, the left ventricle was dilated and the myocardium showed increased growth of connective tissue at the expense of the muscular tissue. The coronary arteries were in no sense occluded and the aorta was not sclerotic.

Another patient was a middle-aged married woman who had informed me that six years before, on a trip to Europe, she had been taken suddenly with the most fearful and terrifying pains over the region of the heart, associated with a sense of great suffocation, the heart feeling as if clamped within a vise; that Dr. Austin Flint, Sr., was aboard the steamer and attended her, and after some ten to fifteen minutes she was able to breathe more freely and was rid of the pain, but felt most profoundly shocked and depressed for the following twenty-four hours. He told her she had angina pectoris and must be careful in the future about her mode of living. She had no perceptible organic lesion. Being hastily summoned one day to her residence, which was some ten minutes' walk, I found she had suddenly been seized with a dagger-like pain in the heart and, exclaiming, "O, my heart," died within a few minutes. Autopsy revealed no morbid condition of the heart nor its vessels.

The writer has had what he considers a few cases of true angina pectoris, in which happily the fatal termination was at least postponed, and will present the notes of one or two, which seem most characteristic.

During the early hours of the morning, being hastily summoned to see a gentleman, aged 57, who was declared to be dying, I found the patient sitting upright in bed, with his hands over his heart, and laboring for breath. His hands and feet were cold, face blanched, pulse small and inclined to irregularity. He had a most distressing appearance, and I expected him to collapse at any moment. I gave him ether internally and nitrite of amyl

to inhale, and applied heat over his heart and to his extremities; later on dry cups were applied over the chest. This patient recovered after a severe struggle, and within less than half an hour pain had ceased and breathing was more quiet; but it was three days before he could resume his journey to Boston. I was informed that the patient had a similar, but much lighter, attack, some eighteen months before. His heart showed no organic murmurs, but the rhythm was feeble. There was no perceptible arteriosclerosis. Examination of urine was negative.

Another patient, living to-day, whom the author attended some ten years ago for frequent attacks of angina pectoris, has some interesting points connected with his case. He was a man about 40 years of age, of no bad habits nor history, inclined somewhat to corpulency, but had no digestive disturbances, nor was he in any way a neurasthenic. For a man of his size and strength, he had what you might call a feeble and somewhat compressible pulse. The heart showed no intrinsic nor extrinsic disturbance. The urine was repeatedly examined with negative results. The gentleman has had some eight or ten characteristic attacks of angina pectoris, extending over several years, and but for speedy help and remedies, which he has been taught to keep on hand, he would have, it appeared, died in one of these attacks. The treatment consisted in a complete change in his mode of living. He was made to work less, and take moderate exercise; was forbidden alcohol in any shape, and less nitrogenous food was eaten; he was to lie down after bathing; take a midday siesta, and lead a life which would in every way relieve the demands on the heart. Massage was used and the precordial region was kept slightly irritated for months, and hot foot-baths were given at night. His slight indulgence in both coffee and tobacco was stopped, and he was ordered ether, iodid of potassium and trinitrin, which he took on different occasions, extending over a period of nearly a year. On retiring at night he was ordered to give himself a hot saline enema, which had a most salutary and beneficial effect on the various enunciations, besides giving tone, without tension, to a somewhat enfeebled arterial circulation. His bedroom was changed from the first to the third floor. His trips away were to the mountains instead of to the lowlands and seashore. This patient has not had an attack for eighteen months, and his wife and self are congratulating themselves that there will be no recurrence. He may yet die suddenly of this affection, for we are too often deceived, when we relax our vigilance and persuade ourselves that recovery is in sight.

William Pepper, who suffered for some seven years from premonitions of angina pectoris, was joyous and hopeful that compensation was taking place and remarked to his physician but a few days before his death that "the battle had been won." "At seven in the evening," his physician writes, "I left him gazing upon Mount Diablo, shadowed in the gathering darkness. I was called at 8. I found him in the attitude and with the expression of *angor animi*, from which he never aroused. At the time of his death he was recovering the lost cardiac compensation and appeared on the clear road to recovery."

Any affection of the heart or systemic system, which may disturb the regular and proper supply of blood to the coronary arteries, may precipitate an attack of angina pectoris. The danger lies in the myocardium not receiving sufficient blood for its nutrition and so cause the generation and accumulation of toxins,

which poison and depress the heart, and allow of an abnormal distension of its cavities. This distension of the heart and interference with its nutrition accounts for the great pain and distress in the precordial region. Smirnow, in speaking of the dilation and distension with blood, which the heart undergoes in the paroxysm of angina, attributes the torturing precordial pain to the stretching of the net-work of afferent nerve-fibrils, which are immediately beneath the endocardium.

The quality of the blood supplied to the nutrition of the heart is the cause of many true anginas of the heart. The effects of blood changes on the heart have been investigated by several authors. Ringer found that without the presence of a lime salt in the circulating fluid, contractility of the isolated frog's ventricle cannot be supported. He also found that the production of acid, particularly that which is formed in the course of, and as the result of, muscular contraction, is also inimical to cardiac contraction. A toxin within the blood depresses the heart, increases the length of the systole and finally causes a standstill in diastole. The accumulation in the heart's substance of a toxic material seems to act on the cardiac ganglia in such a way as to destroy the heart's excitability. Any slight obstruction of the supply of blood to any part of the myocardium leads quickly to the generation of a toxin. Cohnheim says the closure of one or both coronary arteries is not necessary, any one branch of a certain size, no matter which, is sufficient to produce a limited arterial ischemia, which in such deadly manner paralyzes irrestorably the whole cardiac musculature. The effect of this deficient nutrition is the product of a heart poison, a product of metabolism, which is in a normal state carried off in the course of the blood-current, but which accumulates under defective nutrition in the substance of the heart.

What makes the action of the heart regular? It is the change of nutrition, by which, through the blood circulating in its substance, the waste of its tissue is constantly supplied, the integrity of the fibers preserved and kept consequently in a condition to contract. If the supply of blood is cut off from the substance of the heart, the organ soon loses its irritability and power of contraction. Cohnheim and Schulthess-Rechberg, in experiments on dogs, observed that ligation of any large branch of either right or left coronary "has at first no effect whatever upon the rhythm or vigor of the cardiac contraction, nor consequently upon the blood pressure, but after the lapse of ninety seconds on an average, the heart beats begin to be somewhat irregular and infrequent, yet still without affecting the blood pressure, till suddenly and at the same instant both chambers stop in diastole. From this standstill, which occurs on an average not later than two minutes, there are no means of arousing the ventricles to new life and renewed contraction. It seems as if a deadly poison had forever destroyed the heart's excitability. Accordingly it is in all probability the system of ganglia which is affected in this fashion."

It would seem from all the facts at hand, clinic, pathologic and physiologic, that whereas sclerosis of the coronary arteries or aorta, or dilation of the heart, etc., is found in a large number of cases of angina pectoris, yet attacks of true angina may occur in patients who are entirely free from organic disease of the heart, and, vice versa, we may find most extreme calcareous conditions of the coronary arteries to exist, as in a pathologic specimen I have, from the patient living to some 60 years of age, with no obtainable history of cardiac distress, and dying of a complaint entirely foreign to angina pectoris. Frey maintains that stoppage of the heart in

angina is not a necessary result of closure of a large branch of the coronary arteries, but may be brought about by numerous other interferences with the heart.

In our treatment we must ever keep in view the picture of the heart whose muscular structure is improperly nourished, whose ventricles are suddenly distended, and whose nerve and muscular fibers are stretched, and I might say stunned, by the rapid engorgement of a circulating fluid, which from the apparent embarrassment in respiration, becomes poorly oxygenated. Relieve the tension of the vascular system by inhalation of nitrite of amyl, and if pain persists, give a few whiffs of ether, which, as there is danger of heart failure, is to be preferred to chloroform on account of its stimulating effects. Morphia should not be continuously used because of its resulting depression, and if given should always be combined with atropia, which is an excellent analeptic. Camphor, also, is one of the best of the cardiac stimulants. Irritation, in the way of sinapisms, etc., to the precordia, eases the distress. The ice-bag or very hot applications have the same effect. The kidneys, skin and respiratory functions should be kept active. In the interval nitroglycerin or nitrite of sodium and iodid of potassium should be used, and the doses should be pushed to tolerance. Good results are obtained from the baths as recommended by the Oertel's method or as carried out by Dr. Schott of Nauheim. A saline bath at the temperature of 92 and reduced 5 or 6 degrees in the course of the treatment has many of the good effects of the Nauheim bath. It is well in ordering the bath to see that your patient is gently massaged, and while in the bath, which should last not longer than ten to fifteen minutes, that slight restraint be given to the flexion and extension of the limbs and body, which the patient is directed to follow. These movements draw blood to the parts and lessen the arterial tension in the system, and with the stimulating effects of the bath have a most beneficial and somewhat lasting good effect on the heart and circulation, the blood pressure being lowered, the diastolic rest of the heart lengthened, and the force of the systole increased. The result is, the ventricles are fully emptied, the peripheral resistance lessened, the whole circulation becomes freer and more active and changes in metabolism promoted, and a general well-being of the patient is noticed. With the results of the use of electricity some claim good results, but it may be said that electricity seems to be more of an adjuvant than a curative agent. To obtain any measure of success in our treatment all excesses of every kind must be corrected and the general functions of the body made to act properly.

919 McPherson Square.

TUBERCULAR PELVIC PERITONITIS.

BY CHARLES C. ALLISON, M.D.

Professor of Clinical Surgery, Omaha Medical College; Surgeon-in-Chief to the Presbyterian Hospital, etc.

OMAHA, NEB.

It seems to be generally held that the lymphatic system affords the main avenue for tubercular invasion. Thus in children, whose exposed facial integument, with repeated abrasions, invites a tubercular cervical adenolymphangitis, (1) in the adult the nasopharyngeal space, directly exposed to multiple bacterial irritations, favors this predisposition an entrance into the lymph-channels and, with suitable soil, general dissemination through the larger ducts to the bronchial and mediasti-

nal glands. Through the same system a tubercular invasion may develop from the genital lymphatics, with easy access to the histologically allied tissue—the serous peritoneum. These neighboring glands in the process of caseation may directly infect the peritoneum, or a hematogenic deposit in this region of recurrent congestions may follow as a secondary expression of a distant tuberculosis. From the intestinal canal also an ulceration may allow the tubercle bacilli to reach the peritoneum, and thus start the destructive process on this organ.

Reasons are manifest, therefore, for the exposure of the general peritoneum to this disease, while there seems to be a strong analogy between the elective area in children—the cervical and bronchial lymphatics—where the surface of the body offers least resistance, and in the invasion of the pelvic peritoneum, occurring as it usually does in females between the ages of 20 and 40 years, during which time there is most exposure to the lymphatic system in the pelvic region.

That tubal tuberculosis is elective seems well established by an analysis of 1200 autopsies by Wothen, (2) in which 20 per cent. showed tubal deposits, involving in every case the peritoneum and in the majority of cases the tubal mucosa. This relatively large proportion of tubal disease includes primary deposits only, without general peritoneal or other tubercular expressions.

Studying this disease, therefore, as a pelvic manifestation, we find its occurrence bearing a direct relation to the circulatory changes and the lymphatic engorgements which occur with greatest frequency during the functional activity of the genital system. In either case the tubercle bacilli may primarily enter the lymphatic space, or they may gain entrance through a soil previously exposed by protracted multiple bacterial infection. The types of this disease are usually well-defined, and may be said to occur in three forms.

The acute miliary form generally involves the entire peritoneum and presents a well-marked train of an acute systemic disease, with early ascitic accumulations, attended by fever, emaciation, and as a rule the general expression of a well-defined tubercular disease. The chronic caseous type of inflammation is attended by a local collection of purulent material with extensive adhesions, tissue degeneration, involving the intestinal tract. The chronic fibrous type is a more subacute form, or it may be a late stage of the types mentioned, and is attended by a dense fibroplastic exudate, a small amount of blood-stained fluid in the cavity, and as a clinic evidence, nodular masses may be felt in the pelvis, and as pointed out by Kelly, these enlargements are apt to change their relations with the pelvic organs from time to time.

The prognosis of this disease is good, although some diversity of opinion is entertained by different writers on its ultimate termination. So able and experienced a man as Munde recently said that he had not yet seen, in his own experience, one case go on to complete recovery; yet, he added, other practitioners report successful terminations, and he expects to be able to score greater success in the future.

That this disease subsides without treatment is admitted. The process of involution leaves but slight thickening in the shape of fibroplastic or pigmentary changes as traces of what was once well-defined tubercular disease.

Symptoms.—Pelvic pain is regarded as a very constant expression of this disease, although the symptomatology takes a very wide range, and a marked development of this trouble may remain for a long time unrecognized. The increased thickness of the pelvic peritoneum, due to the tubercular inflammatory process, may be looked on as the cause of frequent and painful micturition, which is a fairly constant symptom.

Should this type become chronic and assume the fibrous form, partial fixation of the uterus, with irregular pelvic indurations, will be noted. The local tenderness and the low septic range of temperature will be of value in directing attention to the nature of the trouble, while a curettage may lead to very conclusive evidence, if the bacilli are found in the debris. Local ascitic accumulations in the pelvis, in this disease, may increase in size until there is marked abdominal enlargement, yet the general peritoneum remain uninvolved. In two cases we have met this condition, and in one tubercular masses in the pelvic omentum gave the first opportunity for certain diagnosis.

Treatment.—The outcome of these cases has grown to be recognized as more successful, since 1862, when Sir Spencer Wells recorded a recovery after celiotomy. The unmistakable spontaneous recoveries that are met are also an evidence of the favorable response which may be expected under intelligent treatment, and while medicinal and hygienic treatment must be accorded a very useful place in the therapeutic measures employed in the management of this disease, yet exploration of the abdominal cavity has led to convalescence in so large a number of cases, and at the hands of so many observers, that surgical treatment must be looked on as promising.

In the employment of surgical measures, our care must be directed not only toward the removal of extensively diseased organs, but to the release of adhesions, when these adhesions threaten the welfare of the patient, and this is more particularly true in the caseous type, which may usually be regarded as the most serious form of trouble; yet it is true that in the recent miliary invasion, or in a fibroplastic involvement the simple abdominal exploration, with salient irrigation, without drainage, is the appropriate and conservative measure which promises the largest number of recoveries.

The reason for such convalescence may be accounted for by the relief of pressure, the removal of ptomaines, and gain in nutrition, with the inhibitory effect on the tubercle bacilli of the phagocytic process thus established. And although Gregg Smith records as his most unexpected recovery a case of operative infection, yet we should take all surgical precautions against the introduction of sepsis.

Representative of the fibrous type of this disease is the case of a multipara, 52 years old, who for several weeks complained of severe pain in the right lower quadrant of the abdomen, in whom a bimanual examination revealed a firm mass fixing the right tube; the temperature ranged between 99 and 101 degrees, micturition was frequent and painful, and marked tympany and constipation were present. Abdominal exploration revealed a dense mass involving the cecum, some coils of the ileum, the right tube and ovary. The peritoneum was much thickened and removal of this extensive pelvic involvement was clearly inadvisable. The abdomen was closed without drainage, and at one and a half years after the operation the patient's condition remains good.

A caseous form of tubercular inflammation with very large cystic accumulation was met in a patient 35 years old, multipara, whose trouble was fairly acute, the

symptoms having been in evidence but a few weeks. Pronounced pain, fixation of the pelvic organs, dysuria, constipation, and notable emaciation were the leading symptoms.

Exploration revealed a large tubercular cyst springing from the left tube, with nodules scattered over the pelvic peritoneum and involving the omentum. Removing this cyst and the affected part of the omentum, with irrigation and drainage, was followed by a convalescence in which, one year later, was found a postuterine tenesmus; vaginal tampons of guaiacol and oil led to a disappearance of the enlargement, and to a symptomatic recovery.

A third case was met in a nullipara, aged 31, whose disease had been present for several months, and in whom the symptom of pain was not leading, but disturbed digestion, loss of weight, partial fixation of the pelvic organs and marked rectal tenesmus were prominent symptoms. A large tubercular cyst was found on exploration, springing from the left side of the pelvis, and surrounding the base of which broken-down glands and purulent material were found. The cyst was removed, the pelvic deposits evacuated, with free irrigation and drainage, followed by convalescence, in which case an unfavorable termination was expected, and this points to similar experiences at the hands of others, which go to prove that a tubercular peritoneum loses, in a large measure, its susceptibility to other forms of bacterial inflammation.

DISEASES IN SCHOOLS*.

SPREAD AND PREVENTION.
BY LAMBERT OTT, M.D.
PHILADELPHIA.

By reason of my two years' intimate association with a school section of Philadelphia, having thirteen schools and 6031 children—5224 being in primary grades, ranging from 6 to 10 years of age, and the remainder in grammar grades—I have been able to make some valuable observations.

A trite remark of mothers, often heard by the family practitioner is: "My children were free from disease until they began attending school," and I can bear testimony to the truth of this saying, not alone from an experience in my own household, but also from the multitude of evidence gained otherwise.

One thing is evident; that there is an increase of contagious diseases during the continuance of the school period. The condemnation of Froebel's kindergarten schools is based on the necessary aggregation of little children in those tender years, when the susceptibility to contagious diseases is at its height. It is claimed that home teaching, and its consequent isolation, enhances the child's chances of attaining maturity while it lessens the possibility of other children obtaining disease. I have often watched little children in school-rooms, in and out of session, especially when seated at double desks, and have been impressed with their frequent and close personal contact, such as placing their faces together, blowing in each other's faces in a banter and, when scrutinizing a fellow pupil's work, bringing the inspiratory current in a direct cross line of the other's expiration. It often amazes me how careless physicians are in permitting children of an infected house to attend school, catering to the whims of parents,

who from stupidity or vicious indifference would rather see others contaminated than have their own children lose time by enforced absence.

The disease usually spread in schools, naming in the order of their frequency, are: diphtheria, scarlet fever, measles, whooping-cough, varicella and variola, or varioloid. There are three sources of danger: 1, being in school during the inception and development of the disease; 2, returning to school too early in the convalescence, or permitting children of an infected household to attend school; 3, in daily attendance in school during a light and overlooked attack of contagious disease.

When any of the contagious diseases occurred among children of my patrons I found in many instances that a child in the next seat had previously been absent on account of sickness, and often had the same disease as the child I was attending. In some cases I was unable to find the source of personal infection in that special classroom, but in contiguous classrooms on the same floor children had been absent with the same disease, and had but recently returned to school; from this I concluded that the mode of contamination was during recess. I have asked other physicians to investigate similarly, and they have had a like experience. One practitioner, of very large experience, stated that he believed seven-eighths of the contagious diseases in children were contracted in school.

I believe the most damage is done by children being in school during the inception and development of contagious diseases, and by a too early return during convalescence. When we consider the insidiousness of the period of incubation in children's diseases, and how often in their early stages the ambitious child will conceal its ills, knowing that absence lessens its chances of promotion, we readily understand why children are frequently found in filled classrooms with the diphtheria patch well developed in the throat, the scarlet-fever case either with a mild rash or an increasing fever prelude to its appearance, or the child who will ultimately develop whooping-cough remaining in school, with that apparently innocent preliminary cough to spread its contagion. One can scarcely believe that fully-developed contagious disease could remain among forty or fifty children any length of time without being discovered, but this I have repeatedly seen. In several instances I have noticed children with their necks tied up, and on examination found them suffering with a light form of tonsillar diphtheria, or, if not with diphtheria, always sufficiently pronounced to alarm me. I have also found in several mild cases of scarlet fever in the classroom, and have frequently found children coughing suddenly in starts, and soon after detained at home with well-developed whooping-cough.

The commoner means of contamination are: by personal contact, inspiring exhalations, kissing; by the common use of a drinking cup; by exchanging working material, such as pencils, cleansing rags, or by passing around from mouth to mouth a whistle or a mouth-organ. The habit of children kissing one another, carrying the end of a lead or slate pencil to the mouth, lending it to a neighbor who also carries it to his mouth, prior to using it, is common.

A grave question arises, viz.:—When should we permit children to return to school during the convalescence of contagious diseases? My practice has been to recommend the return after the following lapse of time.

1. Diphtheria, four weeks from its inception and one week in the open air.

*Presented to the Section on Practice of Medicine, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

2. Scarlet fever, four weeks from its inception and one week in the open air.

3. Measles, two weeks from its inception and one week in the open air.

4. Whooping-cough, not until every vestige of the cough has disappeared.

5. Smallpox, two months from its inception and one month in the open air. Some physicians have considered this time as too long, and have also undervalued the one week of out-door life. My answer to them has been, "Where is there a better ventilator of body and clothing than a romping out-door life for a convalescent child?"

We have not only the improved germ tone, but a removal of the contagious element—germ which it undoubtedly is—and a consequent lessened possibility of imparting the contagion to the healthy children with whom they at once come in contact. I hold that these restrictions should be regulated and enforced by special enactment, for when left to the too-eager mother to get her child soon into school again, or the easy-going physician, who too often caters to the whims of his patrons, they will fail of their purpose unless supported in the form of a law.

The question may be asked, "Why should all diphtheria cases be detained from school five weeks?" If we should determine the time by the bacteriologist's report, then a much longer time would be necessary. In Philadelphia physicians have sent material obtained from the throats of cases apparently recovered from diphtheria to the city bacteriologist, in the sixth week from the inception of the disease, and after being two weeks out of doors; he reported, microscopically, a number of Klebs-Loeffer bacilli present. I do not believe any one is able to positively state when the last scale of the desquamation of scarlet fever has disappeared from a child, and that there is no possibility of further contagion. Therefore, if there is ever possible an element of doubt, why not allot ample time for their convalescence, and err on the safer side? It is a bad and vicious rule to permit one child to advance by hazarding the lives of fifty others. Parents usually object to the length of time, claiming it is an unnecessary hardship, but how few mothers understand this danger, and yet you will find this same mother offering the most strenuous objections when her child is exposed to this danger to which she subjects others by returning the convalescent too soon.

The fact that contagious diseases of childhood are preeminently spread in schools is accepted by the medical and lay public, and yet how tardy have been the efforts toward instituting preventive measures. Every physician can recall some loving, earnest mother among his patrons who has learned to distinguish between the lighter and the major ills of her children, and when such a mother calls for your services, you at once, and rightly, conclude that there is something radically wrong. Why not have every teacher acquire this training, and learn to distinguish a normal from an abnormal throat, to discern the flush of fever, scarlet rash, and any suspicious cough that might lead to pertussis? A few clinic lessons added to her curriculum, and making this a part of her qualifications necessary to acquire a certificate as a teacher, is not only feasible, but practicable, and will be followed by beneficent results. I hope to see the day in which every school teacher is thus qualified to distinguish children's diseases, and with the argus eyes always on the many little ones, what better means have we to prevent the spread of contagious

diseases in schools? She should not only be taught the differential points, but the means of contamination, which she can in turn impart to other pupils. A daily medical inspection is in vogue in some of the European and American cities, but this will only be occasionally necessary if teachers receive the proper instructions. When teachers are qualified in practical clinic essentials, they can make it their morning duty to have the pupils pass in single file, and, if watchful, they will learn to discover the suffused cheek, the dull eye and the heavy countenance. Any child trivially ill is at once sent home with a note of explanation, requesting the attendance of a family physician.

The law of Pennsylvania, compelling children admitted to school to present a certificate of successful vaccination, signed by a physician, is signally defective, for there is no doubt that a number of certificates are forged, by which means parents opposed to vaccination evade the law. An amendment to the law has been passed, to admit children who after repeated trials will not "take" the vaccin virus, which must be confirmed by a qualified physician, but I have never yet found a child who did not respond to primary vaccination, when properly done with fresh and healthy vaccin lymph. The law, by which the physician's signature should be authenticated, should be more stringent, thereby barring any possibility of deception. If it is an accepted fact, and I believe it is in Philadelphia, that enforcing the vaccination law has stamped out smallpox, why not give more attention to preventing the spread of other contagious diseases in all schools, instead of the belated attention of posting a yellow label over the door of the unfortunate victim? This tabooing the infected household prevents the usual intercourse of neighbors, which in itself is advantageous, but it unfortunately leads, on the part of the doctor and family, to collusively withholding such information from the proper authorities, thereby rendering the source of infection more dangerous by inattention to details, and the proper care against intruders.

The Philadelphia Board of Health forbids principals receiving such children in school, reported with infectious diseases, until they notify them when they may be safely returned to their classrooms. In many health boards, prophylaxis does not receive the attention it should, and the major work in that line should be directed within our schools. There should be in every city, as in Philadelphia, where there are 150,000 children attending the public schools, and probably 50,000 in parochial and private schools, a school medical superintendent, with sufficient salary to enable him to devote his entire time to his work, and a complement of qualified assistants apportioned to the different districts, whose duties should be to inspect school buildings, to trace sources of infection, to respond to the call of principals or teachers for the examination of suspicious cases, and especially to guard a classroom of children where any contagion has developed and is likely to spread. Such a board, properly salaried and organized, would in the course of time develop a fund of practical details, which would reduce to a minimum the spread of contagious diseases in our schools. Their work could also be that of instructing teachers in recognizing infectious diseases in their early stages, or where there is need of watchful attention, to aid and guide them in hygienic measures. His duties should be in part to see to the proper physical training of pupils, to the proper posture to be observed in sitting and writing, to suggest remedies against the enormously grow-

ing evil, especially in our public schools, of stooping, and thus acquiring round shoulders, and to superintending the voice and lung gymnastics so essential in the developmental periods of life.

Why should it not be the morning duty of each teacher to inquire of her class whether any child present has headache, sore throat, sick stomach or pain, or is feeling ill in any way? Such children complaining should at once be examined by the visiting medical inspector, and, if sick, should be sent home, or, if malingering, returned to the classroom. Believing, as we do, that infection is for the most part spread by children sitting in school during the inception and development of contagious diseases, the danger, therefore, can be minimized by early detection through these interrogatories, supplemented by a medical examination, which renders it nearly impossible for a child to remain in school two or three days with a diphtheritic patch the throat or a developing exanthemata. Or, if this procedure be objectionable, the teacher can in the early part of the term, or once a week if necessary, instruct her pupils to report immediately when ill.

In Brussels the schools are visited weekly by trained medical inspectors, who look after all matters pertaining to the health of the pupils, in suspicious cases examining the eyes for optical defects, and in frail children suggesting such work and physical training as accords with their capabilities.

DISCUSSION.

DR. HORACE B. ARNOLD, Boston.—In November, 1894, we started a system of school inspection by physicians. The city was divided into fifty districts, and one examiner was appointed for each district. A visit was made to the schools each morning. The plan was as follows: Immediately on the assemblage of the school children, the teacher looked them over and decided whether any child was ailing. If any child was found ailing, word was sent to the mother and a notice given to the medical examiner. The medical examiner examined the child and determined the trouble, and, if contagious, or if detrimental to the health of the other children, the case was sent home. We dealt with an extensive run of contagious diseases in the city and many cases in the public schools. During the first year—fourteen months—there were 16,790 pupils examined in the schools; of this number, 6,053 were not sick, but 10,737 were found to be ill, among which number 2,041 were sick enough to be sent home; 453 had contagious diseases and would have been sources of infection through the schools. Since that time the number of contagious diseases in the schools and city has suddenly diminished. In my ward, during the past year—as school inspector—I found more cases that contracted the disease outside the schools than inside. The physicians are obliged by law to report cases of contagious diseases to the Board of Health, when the examiner visits the case to learn if proper isolation, etc., has been carried out; if not properly carried out, the case is removed to the hospital. As a result of this practice, the results have been remarkable, for there are fewer cases of contagious diseases in the tenements than in the well-to-do classes. The reason is that since the new contagious hospital can accommodate all the cases that have their origin in the tenement districts, the prompt removal of the cases to the hospital limits the spread of the diseases.

Regarding Dr. Ott's opinion as to the period at which the child should be allowed to return to school, I believe it is too short. In watching a number of cases of scarlet fever, I found desquamation occurring five and one-half weeks. Dr. Cullom places the average period of desquamation at fifty days. As regards diphtheria, the child should not be allowed to return so long as the Klebs-Löffler bacilli are demonstrable.

DR. RAYBURN, Washington, D. C.—Another important point is regarding sending children to school too early in life. No child should be sent to school before the age of seven years. In Washington we have about 50,000 children who attend school. The idea of sending children to school at the ages of 4 or 6 is wrong. At this early period they take diseases easily. Children should not be sent to the primary department before the age of 7 years and no child should be kept in one session more than four hours in length; only an exceptional child is able to bear the strain on the system for a

longer period of time. In other words, no child should come to school before the age of 7 years. The trouble is that the public school system has grown too much. One should bear in mind that the children need sound bodies as well as sound minds.

DR. BRADDOCK, Minneapolis, Minn.—Any one who studies infectious diseases knows that they increase in number during the school period. Any one who studies inspection of schools will admit that Boston has the best system. Teachers can make inspection and they can help, but not without medical inspectors; teachers working with the medical inspectors give the best results. The time limit for scarlet fever and measles may be made, but not for diphtheria; some cases of the latter may not be safe for six weeks, and some not for six or eight weeks, before they may be sent back to the school. Its contagiousness is through direct infection and not through the air. In many instances the bacilli may be in the throat, although there may be no symptoms. If we exclude children with clinic diphtheria, we should exclude children who have bacilli in their throats. The time limit of four weeks is not long enough for scarlet fever, although some cases may be safe in less than that time.

DR. E. R. AXTELL, Denver.—The statement of Dr. Ott regarding the indiscriminate use of lead pencils is a true one. Two years ago I suggested to a lead pencil manufacturer that he incorporate quinin or some bad-tasting substance with the graphite, but nothing came of it. In the private schools in Denver we had trouble with diphtheria, and I have made visits there from time to time and found patches of diphtheria in the throat.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

- American Journal of Obstetrics (N. Y.), June.**
- 1.—"Treatment of Labor in Abnormal Pelvis." Edward P. Davis.
 - 2.—"Surgery of the Puerperium." Denlow Lewis.
 - 3.—"The Waleher, the Trendelenburg and the Mercurio Postures in Midwifery." Robert L. Dickinson.
 - 4.—"Prophylaxis and Treatment of Puerperal Fever, with Report of Three Cases of Streptococcus Infection Successfully Treated with Antistreptococcus Serum." John F. Moran.
 - 5.—"Occurrence of Streptococcus Pyogenes in Gynecologic Diseases." B. Brown, Hills.
 - 6.—"Some Considerations on Gonorrhoea in the Female." E. E. Morse.
 - 7.—"Case of Symphysiotomy." John F. Moran.
 - 8.—"Intestinal Obstruction from Ascariæ Fasciæ." M. Taylor.
- Yale Medical Journal (New Haven), June.**
- 9.—"Malignant Disease of Uterus, Diagnosis and Treatment." F. H. Wiegans.
 - 10.—"Progress of Medicine." O. T. Osborne.
 - 11.—"Insanity in its Medicolegal Relations." Gustavus Eliot.
 - 12.—"Lymphoid Hypertrophies of the Pharyngeal Vault." Carl E. Muenger.
- Pacific Medical Journal (San Francisco), June.**
- 13.—"Doctor as a Medical Jurist." C. K. Bonestell.
 - 14.—"Treatment of Bronchopneumonia in Children." D. A. Hodghead.
 - 15.—"Belladonna in Treatment of Bronchopneumonia in Children." J. A. Condit.
 - 16.—"Parsite and Pathology of Malaria." F. H. Whitsitt.
 - 17.—"Hydrocele." J. P. LeFevre.
 - 18.—"General Practitioner in Relation to Insane." Ernest Hall.
 - 19.—"Relation between Hyperchlorhydria and Motor Derangements of Stomach." A. W. Perry.
- Therapeutic Gazette (Detroit, Mich.), June 1.**
- 20.—"Treatment of Cardiac Asthenia in Pneumonia." H. L. Elsner.
 - 21.—"Report of Two Cases of Laparotomy for Perforation in Typhoid." W. J. Taylor.
 - 22.—"Evolution of Modern Therapy." Simon Baruch.
 - 23.—"Employment of Kalt Suture in Critical Cases of Cataract Extraction." S. D. Rixey.
 - 24.—"Cutaneous Burns and Treatment." Elice M. Alger.
- Western Medical Review (Lincoln, Neb.), June 15.**
- 25.—"Modification in Operative Method of Inveterate and Relapsed Cases of Talipes Equinovarus." A. F. Jonas.
 - 26.—"Diagnosis in the Country with a General Practitioner." G. R. Highsmith.
 - 27.—"Lead Heus Mistaken for Appendicitis." J. P. Lord.
 - 28.—"Circulation of Blood in Sick." T. L. Putnam.
 - 29.—"Empyema of Gall-Bladder." J. E. Summers.
- Louisville Journal of Medicine and Surgery, June.**
- 30.—"President's Address." J. M. Mathews.
 - 31.—"Address of Welcome." T. L. McDermott.
 - 32.—"Typhoid Fever." E. N. Hall.
 - 33.—"Burns and Scalds." J. S. Leech.
 - 34.—"Accidental Separation of Symphysis Pubis During Labor." B. S. Rutherford.
- Denver Medical Times, June.**
- 35.—"Commencement Address." A. B. Seaman.
 - 36.—"Puerperal Sepsis, is it always Preventable?" A. H. Garnett.
 - 37.—"Acute Bronchopneumonia in Children." C. P. Hough.
 - 38.—"Ancient vs. Modern Therapeutics." J. R. Baer.
- Colorado Medical Journal (Denver), June.**
- 39.—"Methods and Results in 175 Cases of Simple Fracture of Femur." C. A. Powers.
 - 40.—"Injuries Occurring in Minnesota Mines." W. E. Harwood.
 - 41.—"Unusual Course of Dissecting Aneurysm of Ascending Aorta." W. E. Shotwell.

- 42.—Floating Cartilage in Knee-Joint. Frank Finney.
 - 43.—Report of Case of Tetany in Adult. E. C. Hill.
 - 44.—Life in West Africa. A. L. Bennett.
- Richmond (Va.) Journal of Practice, May.**
- 45.—"Diagnosis of Abdominal Contusions with Hollow Visceral Lesions. H. M. Taylor.
 - 46.—Limitations of Conservative Surgery of Female Generative Organs. D. B. Johnson.
 - 47.—"Case of Inversion of Uterus, Treated by Thomas' Method. Henry C. Coe.
 - 48.—Report of Case of Rupture of Liver. Ed. C. Field.

- Medical Herald (St. Joseph, Mo.), May.**
- 49.—"Pulsating Pleurisy, with Report of Remarkable Case. F. P. Heary.
 - 50.—Importance of Giving More Attention to Diseases of Children. A. H. Hoar.
 - 51.—"Some of the Black Arts in Medicine. J. T. Davis.
 - 52.—"Proteolytic Value of Malt. C. H. Miller.
 - 53.—Merits of a True Sanitarium and Where It Should be Located. Paul Pappin.
 - 54.—"N. Y. State Medical Society and the Code of Ethics. N. G. Richmond.

- Pacific Record of Medicine and Surgery (San Francisco), May 15.**
- 55.—"President's Address. W. W. Kerr.
 - 56.—"Diagnosis of Primary Cerebrospinal Meningitis. W. F. Cheney.
 - 57.—"Clinical Aspects of Muscle Affections. H. C. Moffitt.
 - 58.—"Why Are so Many People Wearing Glasses? V. H. Hulén.

- Atlanta Journal-Record of Medicine (Ga.), June.**
- 59.—"Treatment of Medical Complications and Sequelæ of Typhoid Fever. H. A. Hare.
 - 60.—"Endoscopic Treatment of Chronic Urethritis. W. L. Chapman.
 - 61.—"Seven Cases of Diphtheritic Comp. Two Aborted by Antitoxin and the Cure by Antitoxin and Specific Treatment. E. M. Harbin.
 - 62.—Treatment of Some Cases of Cancer of the Skin. B. M. Hutchinson.

- Tri-State Medical Journal and Practitioner (St. Louis), May.**
- 63.—"Let the term "Amputation" be Abolished. T. N. Manley.
 - 64.—"Tent Life for Invalids in Colorado. G. F. Gardiner.
 - 65.—"Peritoneal Adhesions. Byron Robinson.
 - 66.—"Dislocation of Spine, with Report of Two Cases. J. H. Austin.

- Merck's Archives (N. Y.), June.**
- 67.—"Ichthalbin in Pediatrics. Th. Homburger.
 - 68.—"Theory of Urotropin, with Report of Some Personal Experiences. Herman Schiller.
 - 69.—"Contribution on Therapeutic Action of Triphenin. A. G. Servoss.
 - 70.—"Treatment of Acute Enterocolitis. C. C. Keener.
 - 71.—Original Researches with Salts of Strontium. L. L. Solomon.

- Medical Sentinel (Portland, Ore.), June.**
- 72.—"New Method in Treatment of Inguinal Hernia. Harry Lane.
 - 73.—"Variability of Drug Cases. H. W. Coe.
 - 74.—"Primary Tonsillar Syphilis, with Report of Case. H. C. Fenton.
 - 75.—"Fracture of Fibula, with Report of Case. E. M. Nerre. J. F. Watt.
 - 76.—"New Emergency Hip Bandage. W. F. Ames.

- Medical Fortnightly (St. Louis, Mo.), June 15.**
- 77.—"Malarial Fever; Typhoid Fever of Long Duration; Subacute Military Tuberculosis. Francis Deland.
 - 78.—"Hysteria Resulting from Severe Stridation. F. X. Derrum.
 - 79.—"Medical Inspection of School Children. Frank Hinchey.
 - 80.—"Treatment of Septic Conditions Following Labor, with Injection of Antistreptococic Serum. A. E. Ellis.

- Pediatrics (N. Y.), June 15.**
- 81.—"Mastoid Complications of Exanthemata in Children. E. B. Deuch.
 - 82.—"Early Training of Blind Children. W. B. Drummond.
 - 83.—"Case of Acetanilid Poisoning from External Absorption in an Infant. T. J. Winters.
 - 84.—"Growth of Children in Germany. Arthur Macdonald.
- American Practitioner and News (Louisville, Ky.), May 15.**
- 85.—"Malignant Disease of Sigmoid. J. A. Ouchterlony.
 - 86.—"Treatment of Diphtheria. V. U. Muss.

- Maryland Medical Journal, June 24.**
- 87.—"Medicine in Nineteenth Century. S. C. Chew.
 - 88.—"Fouquieria from Eastern Shore of Maryland. E. F. Corlett.
 - 89.—"Notes on Recent scientific Literature. W. H. Luard.

- Philadelphia Medical Journal, June 24.**
- 90.—"Care of Delicate Children. Henry J. Mulford.
 - 91.—"Scientific Charity. Edward T. Devine.
 - 92.—"Some Inapparent Sequelæ of Typhoid Fever. E. M. Pressly.
 - 93.—"Treatment of Stump in Abdominal Hysterectomy for Uterine Myomata. Byron Robinson.
 - 94.—"Case of Diaphragmatic Hernia of Fourteen Years' Duration. Resulting in Medial Displacement of Organs. F. W. Flague.
 - 95.—"Intubation in Diphtheria. Thomas W. Moore.
 - 96.—"Acetanilid Habit. Amelia West Gilmore.
 - 97.—"Syphilitic Perichondritis of the Ear. Francis H. Packard.

- Medical Record (N. Y.), June 24.**
- 98.—"Subacute Ataxic Paralysis and Combined Sclerosis—a Form of Spinal Disease Associated with Lethal Anæmia and Toxæmia. Charles L. Dana.
 - 99.—"Hairy Typhoidosis of Pleura Without Other Tuberculous Involvement of Lungs. Eugene Hudenpelt.
 - 100.—"The Post-Febrie Insanities. Algeo McLane Hamilton.
 - 101.—"Fibrins of Abdominal Wall. Aricel. Francis H. Packard.

- New York Medical Journal, June 24.**
- 102.—"Some Critical and Desultory Remarks on Recent Laryngologic and Rhinologic Literature. Jonathan Wright.
 - 103.—"A Primary Polypiferous-Cell Sarcoma of the Nose, with Universal Metastasis to Formations of the Mesencephalon. Mass in Right Ventricle of Cavity. Alfred Scott Warthin.
 - 104.—"How to Give Anesthetics. William S. Deutsch.
 - 105.—"Inoculation Theory of Malaria. W. B. James.
 - 106.—"Surgical Operations During Typhoid Fever. Arthur Macdonald.
 - 107.—"Robber Gloves in Aseptic Abdominal Surgery, with a New Method of Sterilization and Bacteriologic Proving. C. H. Richardson.

- Medical News (N. Y.), June 24.**
- 108.—"Fever in Aseptic Surgery. B. Farquhar Curtis.

- Boston Medical and Surgical Journal, June 22.**
- 109.—"Experimental Research Indicating that Paranzanthin Poisoning is Not the Cause of Epilepsy or Migraine. James J. Putnam and Franz Pfeil.
 - 110.—"Subsequent Histories of Arrested Cases of Phthisis Treated at the Sharon Sanitarium. V. Y. Bowditch.
 - 111.—"Care of Hysteria: Recovery after Prayer. S. G. Webber.

- Cincinnati Lancet-Clinic, June 24.**
- 112.—"Rupture of Spleen. Francis Downing.
 - 113.—"Place and Work of the Medical Profession. Edmund Cone Brush.
 - 114.—"Two Deaths from Snake Bites. J. W. Campton.

- Medical Review (St. Louis), June 24.**
- 115.—"Report on Progress of Gynecology. W. B. Dorsett.

AMERICAN.

1. *Labor in Abnormal Pelves.*—The summary of Davis' paper is as follows: 1. In 466 women examined by pelvimetry, 32 per cent. had abnormal pelves. 2. Among these, 20 per cent. required obstetric operations for safe delivery. 3. The mortality of the operations, which included the range of modern obstetric surgery, was nil from septic infection and hemorrhage. One patient died from nephritis. The fatal mortality of the operations, which included the range of one 4. The writer's experience in the Cesarean section and symphysiotomies includes fourteen Cesarean sections and eight symphysiotomies. The mortality for the mother was nil where the patient was uninfected and sound before delivery. When death occurred in the mother it was from previously existing streptococcus and pneumococcus infection or from infection with bacillus of comma before labor, or from eclampsia. In the fourteen Cesarean operations and eight symphysiotomies one child perished from inspiration pneumonia, its mother being infected before admission to the hospital. 5. In our experience celiohysterectomy with intrapelvic treatment of the stump, celiohysterectomy, symphysiotomy, forceps extraction in Walcher's position, version and embryotomy, in patients not infected before these operations were performed, have given excellent results.

2. See abstract in JOURNAL, May 27, p. 1173.

3. *Postures in Labor.*—Dickinson's paper is a study of the literature and facts as regards posture in midwifery, going back to the sixteenth and seventeenth centuries and bringing the subject down to recent times. His paper is illustrated by reproductions of ancient woodcuts and various diagrams from modern sources. His practical deductions are: 1. Posture will notably alter the shape of the pelvis in late pregnancy. 2. Increase in available room in the pelvic cavity as a whole cannot be brought about. 3. To obtain the largest conjugate at the inlet, the hanging dorsal posture is to be employed. The gain is nearly one centimeter. 4. To obtain the largest conjugate at the outlet, the full-flexed dorsal position is necessary. The increase promises to be from 1.5 to 2 cm.

4. *Prophylaxis and Treatment of Puerperal Fever.*—After a critical study of the literature, Moran concludes that the best practice is asepsis rather than antiseptic and that meddling examinations, douches, etc., are best avoided. The treatment should be based on a thorough physical and bacteriologic examination. If streptococcus infection exists, local treatment is likely to be beneficial. The surgical treatment depends on the case; of course, pus must be evacuated. In the general treatment, which embraces stimulants, strychnia, nitroglycerin to aid the heart, cold packs or sponging for fever, antipyretics are contraindicated as they depress the heart, and quinin is of little use except in malaria. Antistreptococic serum has been advised of late and Moran reports three cases in which the improvement following was, he thinks, more than a mere coincidence.

5. *Streptococcus in Gynecology.*—In reviewing the Johns Hopkins Hospital gynecologic records from October, 1894, to June, 1896, and from October, 1897, to July, 1898, Miller found complete bacteriologic records in 127 inflammatory cases, in seven of which the streptococcus pyogenes was encountered. The histories are given. Miller finds this proportion agrees with that obtained from the literature, so that this infection may be reckoned as comparatively rare. Four of his cases were puerperal parametritis and one of the others was probably of puerperal origin. In no case of pyosalpinx proper was this germ found, and he thinks it must be rare in this condition. The origin is undoubtedly from a wound and generally from a puerperal one. In only two of his seven cases was it otherwise, once from the intestines and once probably through the vagina. The route may be either through the blood-vessels or the lymphatics, preferably the latter. The characteristic symptoms are soft, elastic swelling, becoming later of a bony hardness, with frequent pus accumulations, which may burrow in any direction. The mass is generally in intimate connection with the uterus, which it immobilizes. He thinks that the streptococcus may exist and be infective

in the organism for months, or even years. Only one of the seven cases was fatal; it was one of general streptococcus infection that succumbed under operation. The others were all discharged improved after three to eight weeks' treatment; 3 have since reported, 2 feel well, and 1 is worse. In 4 of the three discharged, the peritoneal cavity was invaded at the time of operation, but in only one did symptoms of peritonitis appear and in this they were only temporary. Miller thinks that the germs may have lost their virulence to some extent or the patients have become somewhat immune or both factors co-operated. As regards the operation, the exudate usually begins in the true pelvis and should when possible be reached through the vagina, avoiding invasion of the peritoneal cavity. When diagnosis is dubious, an exploratory laparotomy may be needed, and when it cannot be reached by the vagina, incision should be made where it lies in contact with the abdominal wall. Incision or puncture with free opening of the mass with the fingers or by blunt dissection with free drainage is always indicated. Excision of tubes, ovaries or uterus is rarely required. More harm than good is done by removal of the appendages in streptococcus parametritis.

6. Gonorrhoea in Female.—Morse calls attention to the importance of this disorder and its frequency in women, which he thinks is greater than is commonly supposed. Married women are the usual innocent victims.

8. Intestinal Obstruction from Ascarides.—Taylor reports a case in which obstruction and intestinal inflammation requiring operation were caused by a mass of ascarides.

10. Progress in Medicine.—Osborne's paper is chiefly devoted to organotherapy, which he discusses in detail.

11. Insanity, Its Medicolegal Relations.—Eliot notices the features of the Connecticut law in regard to the commitment of the insane, criticizing in some points and speaking well of it in others. He is rather biased, apparently, against the plea of insanity in criminal cases. He concludes that the appointment by judges of experts in insanity does not insure the selection of the most competent men, while the appointment of experts by opposed parties results in the most diverse opinions, and that when these opinions differ, neither judge nor jury appears to be much influenced by the testimony.

12. Hypertrophics of Pharyngeal Vault.—Munger counsels the early removal of adenoids and thinks that it would be a good plan to have systematic examination of children's throats for these growths, and regulations for their removal.

13. Doctor as Medical Jurist.—Bonestell speaks of the importance of the physician giving special attention to cases in view of medicolegal exigencies, and making thorough notes as to details.

14 and 15. Bronchopneumonia in Children.—Hodghead reports a case in a child of 18 months with bronchopneumonia in which, after failure of the routine treatment, complete change was made, poultices removed, water given instead of milk, 1-10 grain of calomel given every hour until the bowels moved freely, alternating every half hour with two drops of tincture of belladonna. In twelve hours every serious symptom had abated, the bowels moved freely several times, and in twenty-four hours the temperature had fallen to 100, the child was breathing 35 times to the minute, all rattling in the larger tubes had disappeared, pulse had become stronger, cough better, and the child slept and took nourishment. The belladonna was continued in drop doses every two or three hours until the characteristic eruption was produced, after which it was gradually withdrawn. Since this case he had relied on these two drugs and with them his mortality has not been over 5 per cent. in a disease which ordinarily has a mortality of 60 to 80 per cent. Couits publishes experiences with belladonna in bronchopneumonia with children which correspond closely with those of Hodghead. He has given the extract of the old British pharmacopeia in doses of $\frac{1}{4}$ grain every three or four hours, without regard to the age of the patient. No disadvantage has been noticed except a slight delirium, easily controlled by lessening the dose, some flushing and rash.

18. The General Practitioner and the Insane.—Hall insists on the necessity of a thorough examination as to the condition and causes before sending patients to the asylum, and especially the condition as to the pelvic organs in females.

20. Cardiac Asthenia of Pneumonia.—Elsner remarks that the treatment of this condition has been very disappointing to the profession. The overwhelming toxemia has staggered our therapists and to meet it we must break away from the practices of the past. First, he protests against the indiscriminate use of those remedies which lower the vitality of the patients while they reduce the temperature, including under this head the coal-tar preparations. The indiscriminate

use of nitroglycerin is also a growing error. It may have its use in overcoming peripheral obstructions such as we meet with in senile cases with sclerotic or narrow arteries, but his experience with it has been unfortunate. In pneumonia, where we already have paralysis of the vasomotors, it is a dangerous drug. Veratrum also comes under consideration. Bleeding the patient into his own veins is a dangerous teaching and he does not venture to say how many lives have been lost by the persistent use of this cardiac depressant. The two drugs on which he relies to meet the indication in pneumonia due to paralysis of the vasomotors are strychnia and digitalis, and with these he would administer the diffusible stimulants, and he believes in giving these at short intervals. He has treated cardiac asthenia by administering, every fifteen minutes, 15 drops each of compound spirits of ether, aromatic spirits of ammonia, compound spirits of lavender and tincture of valerian—keeping this up night and day until the pulse shows improved tone and the heart action is better. Valerian is given for its quieting effect, but, with some patients who cannot take it, he has substituted whisky or brandy in corresponding doses. With this he has insisted on the internal administration every two, three or four hours, according to the case, of $\frac{1}{4}$ -gr. doses of spartein, with 4 to 6 gr. of caffeine. Finally, the alcoholic stimulant on which he depends is Tokay wine, and he thinks that it has been of great value in tablespoonful doses every half hour, given with the ethereal stimulant. Occasionally he has found it necessary to use high rectal injections of coffee and whisky and hypodermic injections of ether and oil during the periods of collapse. As regards the use of oxygen, he is uncertain and seems doubtful as to its great benefit. Naturally, the treatment here indicated requires skilled and faithful nurses. (See JOURNAL, June 24, p. 1642.)

21. Laparotomy for Typhoid Perforation.—Taylor reports two cases of operation for typhoid perforation and discusses the condition, especially the question of the early diagnosis which is so important for the welfare of the patient. He believes that careful and repeated examinations of the blood will be a very valuable aid in diagnosis and may enable us to operate earlier than would otherwise be the case, as with the onset of any acute inflammatory process, as Cabot and Thayer have shown, the number of white corpuscles is suddenly and largely increased. The danger from operation in cases of a mistaken diagnosis is not, he thinks, so great as to prevent it in suspicious cases. He sums up the indications, quoting Finney's conclusions: "First of all, the so-called diagnostic signs of perforating typhoid ulcer, most reliance is to be placed upon the development of an attack of severe, continued abdominal pain, coupled with nausea and vomiting, and at the same time a marked increase in the number of white blood-corpuscles; secondly, the surgical is the only rational treatment for perforating typhoid ulcer; thirdly, there is no contraindication to the operation, surgically speaking, save a moribund condition of the patient."

22. Evolution of Modern Therapy.—Baruch's paper is an interesting sketch of the fashions and changes of therapy in the past, leading up to our present ideas. The paper is to be continued.

23. Kalt Suture in Cataract Extraction.—Risley reports three cases in which he employed the cono-scleral suture devised by Kalt, which he claims diminished the percentage of iris prolapse. Risley's experience would seem to be rather favorable.

25. See abstract in JOURNAL, April 15, paragraph 46, p. 839.

26. Published in JOURNAL, February 11, p. 296.

27. Ibid, April 15, p. 800.

29. Empyema of Gall-Bladder.—Summers reports two cases of gall-bladder empyema and discusses the condition. He sums up as follows: The chief symptoms leading to a diagnosis of empyema of the gall-bladder are: pain, and acute symptoms of inflammation in the gall-bladder region—muscular rigidity, pain on pressure, etc.—fever, chills, sweating; pressure of a tumor. Probably there will be a history of cholelithiasis. Suppurative inflammation of the right kidney and also of the vermiform appendix when displaced must be excluded. The treatment is surgical, and consists in incision and drainage of the gall-bladder. It is usually wise to aspirate the gall-bladder before incising it. It is not necessary, neither is it always practicable, to suture a gall-bladder into the abdominal cavity. Gauze packing will often suffice to protect the abdominal wound against contamination, before aspiration and incision, likewise after the establishment of drainage.

30. This address was published in the JOURNAL of June 10.

33. Burns and Scalds.—After general description of the varieties of these lesions, Leech reports a case in which a man was scalded very extensively over arms, legs and part of the

trunk and face, the injury ranging in the first and second degrees in severity. The man was put to bed and the wounds dressed with caron-oil and hypodermics given. After eight days, the hypodermics were withdrawn gradually and the local dressing changed to an ointment of iodoform, oil sassafras and vaselin. Supporting treatment continued throughout, consisting of sherry wine, whisky, brandy and egg-nog. Recovery was uneventful and he was dismissed in a little over a month after the injury. A notable incident of the case was the spontaneous combustion of the dressings during the first week.

34. *Separation of Symphysis Pubis.*—Rutherford reports a case of multipara, aged 28, who had several difficult labors, and in whom the symphysis separated spontaneously during delivery. Recovery was long and tedious and complicated with septicæmia in spite of precautions.

36. *Puerperal Sepsis.*—Garnett maintains that in spite of all that can be done it is not always possible to prevent puerperal sepsis and that its presence, even in this day of extreme modern antiseptics should not be taken as an evidence of criminal neglect, as some have advocated. In support of this view, he asks why there should be published a study of forty cases of puerperal sepsis in the John Hopkins Hospital, where every facility for its prevention must have existed.

37. *Bronchopneumonia in Children.*—Hough, after briefly describing the symptoms, mentions his treatment, which consists of stimulating expectorants, with ammonia preparations, counterirritation with mustard and camphorated oil, care to the kidneys, the use of quinin in combination with ammonia and digitalis. Aconite is an efficient remedy in the acute stage and he frequently resorts to the hot mustard bath in threatened collapse, and an emetic if mucous accumulations, which the patient cannot expectorate, exist. Good, intelligent nursing and feeding is, in his opinion, the great essential, and he places as much confidence in wise, motherly care as he does in medication.

39. See abstract in JOURNAL, March 25, p. 661.

41. *Ibid.*, April 29, p. 937.

45. *Diagnosis of Abdominal Contusions.*—The importance of an early diagnosis of the ruptured solid or hollow viscera is the subject of Taylor's paper, and he reviews the various symptoms which may aid us. Shock, he thinks, has little diagnostic value, though it may be presented in such a way as to make its manifestation diagnostic. Prolonged shock points to visceral lesions. Abdominal distension is another symptom which is not uniformly characteristic. Abolished peristalsis, however, is especially valuable, being one of the earliest manifestations, and is appreciable at the right time. Muscular rigidity is next to abolished peristalsis, and he thinks it almost infallible. Pains, vomiting and facies are not unvarying signs, nor is the pulse. Senn's method of injecting hydrogen gas has not, he thinks, received the attention by surgeons that it ought. Percussion of the abdomen is not likely to furnish any valuable information.

47. *Inversion of Uterus.*—Coe reports a case of spontaneous inversion of the uterus occurring in labor after the use of ergot, which was reduced by laparotomy by Thomas' method.

49. *Pulsating Pleurisy.*—Henry reports a case of this condition and believes, contrary to some authorities, that the most important causes are a large effusion, relaxation of the thoracic wall, and a somewhat forcible heart beat. The presence of air in the chest may co-operate, but it is not essential. In the case he reports there were three strongly pulsating tumors, which is remarkable in its way.

51. *Black Arts in Medicine.*—This article discusses some of the unethical tricks adopted by some of the more unscrupulous members of the profession.

52. See abstract in JOURNAL, xxxi, Nov. 28, 1898, p. 1173.

54. *N. Y. State Medical Society and the Code.*—Richmond's article is a plea in behalf of the position taken by the New York State Medical Society, claiming that recognition of those that the law recognizes, provided they are up to the standard of professional gentlemen, should be the rule, and that we should rid ourselves of the title "regular" as egotistic and useless.

55. *President's Address.*—Kerr's address before the California State Medical Society takes up some of the questions of modern medicine in a very satisfactory way. It suggests an order of business for the more practical working of the society, alludes to the questions of vaccination, the ethical questions that arise, the crusade against tuberculosis, and asks the society to actively interest itself in these matters.

56. *Diagnosis of Cerebrospinal Meningitis.*—Cheney's article calls attention to the great number of deaths that have occurred in San Francisco within the last year as justifying the bringing forward of the subject, and calls attention to

its diagnostic points, which are few. As regards symptoms, the best are the suddenness of the onset, the initial symptom usually being chill, severe headache, and vomiting. Headache, however, is the most constant phenomenon. The development is rapid, delirium usually comes on early, soon followed by coma and stupor. The third symptom, which is rather characteristic, is the rigidity of the muscles of the neck. These are all the points that are really characteristic of this very variable disorder. He then mentions the one diagnostic method which outweighs all that have been mentioned, namely, lumbar puncture, and describes the methods of operation and detection of the Weichselbaum meningococcus. One other procedure that is available is the blood count, one of the chief features of the disease being a high degree of leucocytosis. The absence of this symptom, therefore, would throw doubt on the diagnosis, while its presence would absolutely exclude typhoid fever, the disease most frequently confused with cerebrospinal meningitis. The last diagnostic method he mentions is the autopsy, which is of no benefit to the patient, but may be of great use to the physician in future experience. He reports three cases observed by him within the past three months. (See JOURNAL, May 13, p. 1052.)

57. *Muscle Affections.*—This is a clinical paper describing cases of rheumatic myalgia, rupture of triceps with complications, infectious neuromyositis, diffuse myositis, etc.

58. *Why So Many Young People Wear Glasses.*—Hulen, after noticing the common eye defects relieved by glasses, and stating that in many cases people are wearing glasses who do not need them, or such as they do not need, concludes: 1. That the eyes of children in the schools are more taxed than they formerly were and eye-strain brings out troubles which would have been unknown had the demands on the eyes been less. 2. Because of the defective lighting of large cities, which, with a less robust population, severely strains the optic apparatus. 3. Because physicians are beginning to notice defects and correct them. 4. Because with all of the above there are more inheriting optic weakness than was formerly the case.

59. See abstract in JOURNAL, May 6, p. 996.

60. *Ibid.*

61. *Ibid.*

62. See abstract in JOURNAL, April 22, paragraph 48, p. 894.

63. *Tent Life for Invalids.*—Gardiner calls attention to the great advantage to invalids and convalescents of open air living in a tent in the mountains of Colorado. The ranches seldom can give such accommodations as are required, but with a tent, and he describes his own, the occupant has everything in his own hands.

65. *Peritoneal Adhesions.*—In this short paper Robinson considers the condition of peritoneal adhesions, which produce one-third of all intestinal obstructions. Its results are: 1. Peritoneal bands. Peritoneal bands may cause intestinal obstructions by a segment of the bowels becoming strangulated by a band or thorough aperture. 2. By isolated peritoneal adhesions. 3. By Meckel's diverticulum and fixed appendiceal loops. 4. Peritoneal bands may fix viscera. 5. They check peristalsis. 6. They cause pain by checking visceral function. Much of the immediate and remote pain subsequent to laparotomy is due to peritonitis and resultant peritoneal adhesions.

67. *Ichthalbin in Pediatrics.*—Homburger gives his experience with the use of ichthalbin in diseases of children. The doses he gives are from 1 to 2 grains to children under 6 months of age, three times a day; to children between 6 and 12 months, 2 to 3½ grains, and those from 1 to 2 years, 3½ to 5 grains. In older children, the dose may be still further increased. He says, in concluding his paper: "In finally summing up all the statements regarding the applicability of ichthalbin in pediatrics, it must, above all, be said that it is perfectly innocuous, and that, given in the form administered by us, it is an almost tasteless preparation which may be exhibited internally without any difficulty. It is able to change weeping eczemas into the dry form within a very few days, and this, too, in cases where external remedies alone were unable to effect the purpose. In combination with the remedies usually employed externally, it hastens the cure of dry eczemas." So also does it effect the recession of the multiple furuncles which frequently accompany the debilitating diseases of childhood. In wasting diseases, such as chronic pneumonia, serofilia, chronic intestinal catarrh, etc., ichthalbin effects an increase of the body weight, by increasing the appetite. Hence the remedy may be recommended particularly during the frequently debilitating antisyphilitic cures, as well as in convalescences frequently aggravated by anorexia and debility; and also other febrile diseases in children. Of the

intestinal catarrhs, the chronic are particularly influenced benevolently by ichthialbin, while the acute and subacute are less favorably modified. It is a valuable addition to our materia medica, and is well worthy of further consideration.

41. *New Method in Inguinal Hernia*.—Lane proposes a method, which he does not claim as new, because he believes it is being used by some practitioners of reputation in the East, of obiteration of inguinal hernia without a cutting operation. The treatment is made by the application of the positive pole of a galvanic battery through the borders of the internal ring, using a current of about 20 milliamperes. With the patient in a recumbent position, with hips elevated, a sharp-pointed, grooved director is introduced above the internal ring into the canal, using the forefinger of the left hand for a guide. When the director can be freely moved along in the canal, a long needle connected with a hypodermic syringe is introduced along its course well up to the internal ring and a 4 per cent. solution of eucain is slowly injected. After the parts are anesthetized, a platinum-pointed needle, insulated at its base, is introduced along the groove up to the internal ring, the forefinger of the left hand being used as a guide to keep back any intestine or omentum that may encroach, which, however, is unlikely. The director is then withdrawn, the needle being held in place against the upper segment of the internal ring and a light current from the positive pole of the galvanic battery is turned on and gradually increased until 20 milliamperes are used, then the point and face of the needle is passed over the surface of the ring, the cord always being held in safety under the forefinger. After going over all the surface of the ring except such portion as is occupied by the cord, the needle is withdrawn and the patient puts on a truss that has been worn if possible at least a month before the operation. The length of time which the current is used is usually about seven minutes. The usual immediate results are apparently a puckering and tightening of the internal ring and surrounding tissues. The treatment may be repeated in three or four days and sometimes a third and fourth one are given. After a time, varying from fifteen days to two months, the truss is removed and if the cure seems complete, no tumor protruding or pain or feeling of weakness, etc., a recovery is pronounced. The operation is very slight, producing very little if any general disturbance. He reports a number of cases in which a cure was produced in this way.

73. *Curability of Drug Cases*.—Coe reports two cases of the opium habit and remarks on the same. He says there is no class of patients in which it is more difficult to foretell the outcome than these. A favorable case may lapse and often the most unfavorable will make a perfect and permanent recovery.

77. *Typhoid Fever*.—DeLafield, in his clinic on typhoid, makes the following points: 1. If a proper case, do not continue tubuling too long—that is, after the third week. 2. If the disease is protracted over the fourth week, although the patient has typhoid fever, begin with scraped beef. This often makes a great difference in the heart's action. 3. When beyond the fourth week, look out for convalescence. Do not look at the temperature-chart at the head of the patient's bed, but look at the patient, who is the guide which tells you if he is convalescent or not. See if the tongue is moist and clearing off, and notice the expression of his face; see if he is sleeping at night and asking for food or getting hungry. The fourth week is the right time to look for convalescence. Do not be so stupid as to have a patient convalescent and not know it; that is a very dull thing to do; in order not to do it, look at your patient and not at the temperature-chart, for the patient is often convalescent with an afternoon fever; this fact is perfectly well known. Now the rule is to disregard the afternoon temperature and to go on increasing and varying the diet and get him out of bed. Dr. DaCosta was one of the first to call attention to the importance of getting patients out of bed when convalescent with afternoon fever.

79. *Medical Inspection of School Children*.—Hinchev pleads for a revision of the school courses of study so that study at home be not necessary, and for the appointment of medical inspectors of the school, whose duties shall be extended to examining every child asking for admission, the examination including the child's eyes and all mental and bodily defects so as to adapt the studies accordingly; also to include the examination of every child returning to school after illness, taking cultures from throats after recovering from diphtheria, and carefully investigating all cases of infectious disease.

81. *Mastoid Complications in Children*.—Dench discusses the subject of middle ear inflammation following the eruptive diseases, and insists on treatment of the mastoid if it has become involved. The incision through the soft parts is not sufficient even in very young children; he holds that the mastoid antrum should be entered in every instance. The opera-

tion can be performed in a few minutes and, if thorough aseptic precautions are taken, it is devoid of danger. He calls attention to the special points in the anatomy of infants and points out that it should be borne in mind that the tympanic ring is applied to the external surface of the temporal bone and that no osseous meatus exists. "The upper wall of the canal is attached to the squamous plate of the temporal bone and the lower wall of the canal lies in immediate contact with the upper wall. In order, therefore, to obtain a perfect view of the drum membrane in an infant, it is necessary to draw the auricle downward, backward and outward; in other words, to separate the inferior from the superior wall. In the operative technic this point must also be remembered. In infants, the surgeon is seldom called on to interfere before a postauricular abscess makes its appearance. When this abscess is evacuated, the surgeon should carefully follow the membranous meatus downward as far as the tympanic ring, exposing the posterior tympanic spine. If the cortex is perforated in this region, the mastoid antrum and middle ear will be easily entered. If, however, the line of superior auricular attachment is taken as a guide, there is great danger of entering the middle cranial fossa instead of the mastoid antrum. Particular stress should be laid on this point. As I have before stated, a post-auricular abscess in an infant is always so strongly indicative of inflammation in the mastoid antrum as to necessitate operative interference. While some cases recover after simple incision of the abscess, it is never wise to depend on this procedure."

82. *Training of Blind Children*.—Drummond noticed that blind children are often defective in other respects than vision on account of their having not been able to develop self-reliance, etc., on account of their disability. The proper method of training these cases can be expressed in a few words: They should be treated, as far as possible, exactly as if they were able to see. Bad habits should be carefully looked after and eradicated at the earliest possible date.

83. *Actinomid Poisoning*.—Westcott reports a case where severe symptoms of actinomid poisoning followed the dusting of the surface for intertrigo of the groin and thighs. The surface was comparatively small and he deduces that the use of actinomid, even in insignificant exposures of the skin in young children, is distinctly dangerous to life.

85. *Malignant Disease of Sigmoid*.—Noting the small amount of literature on the matter, Ouchterlony reviews the subject of sigmoid cancer, which generally appears in the form of scirrhus, encephaloid and colloid, very rarely as sarcoma. It seldom attains large dimensions and does not as a rule tend largely to invade other parts. It is rarely recognized in its beginning, and he describes the principal symptoms, which are not always localized, tumor, hemorrhage, discharge of pus, subnormal temperature, at least at times, and in his cases excessive dryness of the tongue and intense burning in the rectum. Complications were numerous, nephritis, peritonitis, abscess, obstruction, septicemia, etc. Diagnosis is not possible in the incipient stage and often difficult later. The course is more protracted than in other varieties. Surgery affords the only means of relief, though not of absolute cure, according to his observations. A case or two, however, have been reported which seem encouraging.

86. *Treatment of Diphtheria*.—Moss treats diphtheria as follows: Calomel in proportion to the age; tincture of chlorid of iron; three or four drops every four hours, and whisky, one or two table-spoonfuls every two or three hours; a general temperature, 65 or 70, and keeping the bowels open. Keep quinin out of the patient, washing and mopping the throat with a saturated solution of chlorid of potash every hour and a half or two hours during the day and less frequently during the night. The contact of the calomel with the diseased portion of the throat is beneficial and it should be given in such a way that this will occur. If there is much purulent discharge and soughing, with bad breath, syringe the throat and nose with a 3 per cent. solution of peroxid of hydrogen every two to four hours. If laryngeal diphtheria occurs, keep the patient in a room at the temperature of 85 degrees, with moist air, and give eight to ten drops of fluid extract of jaborandi, 1 grain of muriate of ammonia, and 10 drops of glycerin every two or three hours. If signs of suffocation supervene, give an emetic, preferably ipecac. He mentions intubation as a last resort and briefly refers to antitoxin without details.

87. See abstract in JOURNAL, May 6, p. 996.

90. *Care of Delicate Children*.—In a group of cases presented by Mulford, the cause of the condition is considered to be either an autointoxication, or the existence of what are commonly termed "adenoid vegetations." Autotoxis is considered by far the most frequent cause; although these two conditions frequently co-exist they may be quite independent of each other.

When, however, the adenoid vegetations exist to the extent of obstructing respiration, autoinfection is present to a certain extent, dependent perhaps on faulty oxidation. In treating such cases all respiratory obstructions are to be removed. Drugs are very sparingly used, even laxatives are but cautiously resorted to; intestinal lavage is much to be preferred. Much may be done by instructing the parents, in guiding their children in the formation of correct habits of life. The main things to be taught are to eat properly, to play, and to rest properly, and to give proper attention to the action of the bladder and bowels.

93. *Stump in Abdominal Hysterectomy.*—Robinson, after making a median incision with catgut, beginning at the angle of the wound above the umbilicus, closes the peritoneum down to the posterior surface of the uterus, thus closing the peritoneal cavity. The ovarian arteries are ligated with catgut, close to the uterus, a large clamp is placed on the uterine side of the broad ligaments on each side of the uterus, as far down as is wished to begin to make the peritoneal cuff. The ovaries are left, and as much of the uterine ends of the oviducts as possible, to keep the nerves of ovaries, ligaments, and tubes intact, to avoid precipitate menopause. He splits the broad ligament down to the uterine arteries and ligates. The peritoneal cuff is now stripped, making it as ample as possible. The uterus is amputated just above the internal os. The upper edge of the peritoneal cuff is sutured to the parietal peritoneal edge, which is produced by the median incision, and the peritoneum is cutely closed immediately after making the cuff if desired. The uterine stump, closed to a cone by catgut, is drawn into and fixed in the abdominal wound. The abdominal wall is then closed. The two sutures of the wound over the stump are allowed to remain united for thirty-six or forty-eight hours to allow escape of wound secretion. Advantages claimed are that immediate closure of the peritoneal cavity avoids shock to a great extent. Intra-peritoneal hemorrhage is impossible, as all arterial ligatures are extraperitoneal.

94. *Diaphragmatic Hernia.*—The condition resulted from a fall in infancy and during the following years, arose from a persistent hacking cough, stooping attitude, and proxy-sus of abdominal pain, no great inconvenience was experienced until after the eighteen year, when death resulted from intestinal strangulation. Post-mortem, it was found that an opening 7.2 inches in its longest diameter existed behind the external tendinous arch of the left side of the diaphragm; the entire small intestine was found in the thorax together with appendix and caecum coli. The stomach was displaced to the right and the liver displaced until it extended one inch below the umbilicus. The spleen was located on the upper surface of the diaphragm and below the heart. The intestines were discolored and showed signs of inflammation. The left lung was entirely collapsed and carnified.

95. *Actanid Habit.*—Gilmore's case, during a period of twenty months, used from 5 to 10 grains of the drug daily, with complete satisfaction and no marked desire for an increased quantity although resisting all efforts at diminution or substitution. The case was suffering from a carcinoma of the uterus.

97. *Syphilitic Perichondritis.*—Packard reports a case of perichondritis undoubtedly syphilitic in its nature, appearing twelve years after the initial chancre. The upper portion of the auricle, the helix, and anthelix were greatly infiltrated and exceedingly tender. The diagnosis was made from the history of primary and secondary signs of syphilis, the ready response to antisyphilitic treatment and the absence of any evidence of traumatism.

98. *Paralysis and Combined Sclerosis.*—This paper is fully illustrated by figures showing the changes in the spinal cord in those cases of spinal cord disease to which he gives the name of subacute spinal paralysis. They are characterized by symptoms of numbness, ataxia and paralysis involving the legs and then the arms, progressing at first slowly, and then rapidly and running their course in one or two years. The cause is unknown but is undoubtedly some form of toxemia. It is more often associated with pernicious or profound secondary anemia than with any other conditions, and is seen after severe malarial and lead intoxication. It occurs usually in middle life or later and more often in women. It resembles light grades of multiple neuritis, such as are due to arsenic or diabetes; on the other hand it somewhat resembles locomotor ataxia in its earlier stages. It is to be recognized mainly by the presence of anemia or cachexia, the age of the patient, the progressive and rather rapid character of the symptoms, absence of much pain or tenderness over the nerves, the absence of eye symptoms and of the visceral symptoms of locomotor ataxia. The pathologic anatomy consists in a progressive degeneration involving most the posterior columns, and to less

extent the lateral columns of the spinal cord, and later the gray matter and other parts of the white matter. At the beginning the disease is systematic, affecting, however, the cervicodorsal part of the cord more severely, as a rule, but usually developing two or three specially marked foci of degeneration lower down in the cord. Pronounced changes in the blood-vessels sometimes accompany the degeneration, which is noninflammatory and often ends in softening. The treatment of the disease is always ineffective in the later stages. In the earlier stage the trouble may be helped by the use of arsenic, quinin, tonics, proper feeding, and the use of saline injections.

99. *Miliary Tuberculosis of Pleura.*—Hodenpyl describes and illustrates miliary tubercular infection without involvement of the lungs. He concludes that it is of frequent occurrence and that miliary tubercles in the pleura may apparently assume unusual significance either in causing, in susceptible individuals, or under otherwise favorable conditions, a generalized tuberculous exudative pleurisy; or by complicating through concurrent infection, an acute exudative pleurisy of independent origin. Miliary tubercles in this situation are prone to become fibrous.

100. *East-Febrile Insanity.*—Hamilton's paper is a general description of certain types of insanity following infectious fevers, especially typhoid and influenza.

101. *Fibroma of Abdominal Wall.*—Miller describes three cases of the rather rare growth of fibroma of the abdominal wall and discusses the condition.

102. *Tuberculosis.*—In this review of recent literature, Wright first notices certain commercial tendencies as shown in incidents of the manufacture of diphtheria and tuberculous antitoxin, and then alludes to the various cures of consumption which he finds are not especially supported by facts, at least as far as the serum therapy is concerned. He next remarks on the question of the infection of milk and milk products and rather throws doubt on the special dangers announced from this source. He also remarks on the possibility of the infection by tuberculosis from dust and coughing, and ridicules Frankel's appliance for filtering the expired air of consumptives. The behavior of the larynx toward tubercle infection is next reviewed, and he thinks that the statistics, especially those of Kreig, are hard to explain except on the theory that the infection has reached the larynx through the lymph channels and not through the atmosphere. In fact, he rather doubts the infection of the lungs directly through inspiration of the germ, and believes that the tubercle bacillus enters the organism in a large number if not in the majority of cases in other ways than through the lungs or stomach. It is shown by post-mortem that other localities, which are closed to clinical investigation are just as apt to be the seats of tuberculous disease as those that are open and exposed. He next notices the symptoms of pulmonary hemorrhage as an indication of tuberculosis, and refers to the comparatively recent work of Massei, which describes a type of tracheal mucous disorder, giving rise to hemorrhage without tubercular infection, and insists on the importance of the examination of the sputum, which he thinks, is not sufficiently attended to even yet. He remarks on the possibility of mistaking syphilitic laryngeal infection for tuberculosis, and notices a recently reported case of Tricifletti as illustrating this fact. In conclusion he refers to the paper of Hansemann on the secondary tubercular infection, which he thinks goes rather too far in its opposition to the higher contagion views. The paper is a conservative one but judicial in its tone.

103. *Sarcoma of Nose.*—Warthin reports an interesting case of polymorphous-cell sarcoma of the nose, and calls attention to its very excessive malignancy and its adding a new form to the sarcomata found in this region. He calls a bibliography.

104. *How to Give Anesthetics.*—Deutsch calls attention to the importance of a thorough knowledge of the patient by the anesthetist, especially the temperament, habits as to stimulants, and condition of the respiratory and circulatory organs. He thinks the Alvis inhaler the best and pleasantest apparatus. He finds the pupillary reflexes a satisfactory guide to the degree of narcosis, and believes that anesthesia should be carried simply to the point where it will allow the surgeon to do thorough work and permit a quick return to consciousness.

105. *Inoculation Theory of Malaria.*—James goes over the facts as regards the mosquito theory of inoculation and believes that, this being proven will render the chances for prevention much more hopeful than was formerly the case, as proper drainage, etc., would render a mosquito-infected region much less dangerous than was previously the case.

106. *Surgery During Hypnosis.*—McDonald reports two cases observed by him, operated by Dr. Schmitt of Nice, one of an

putation of the breast and one of ectropion of the lower left eyelid. The patient, in a state of somnambulism, followed the directions of the doctor and apparently did not experience the slightest pain.

107. *Rubber Gloves in Surgery.*—Richardson believes that rubber gloves afford the best method, while at the same time, as a precaution against accident, a thorough sterilization of the hands and arms should also be practiced. He prepares the gloves by first washing them in a soda solution, inside and out, and drying over a heater or gas flame. The inside should be dusted with a dry heat sterilized soapstone. Each pair should be wrapped in a double layer of gauze and placed in a formaldehyde sterilizer for two hours, then wrapped in a towel already at hand and sizes marked with graphite.

108. *Fever in Aseptic Surgery.*—Curtis treats of the causes and diagnosis of fever occurring in surgery with primary union of the wounds, and illustrates it with temperature curves. In a certain proportion of these cases some slight infection may be credited as the cause of the fever, but this cannot be said to be the case in all, as such fever occurs after simple fractures and subcutaneous injuries where infection is out of the question, unless it occurs through the blood. He insists on the importance of examination of the blood for leucocytosis, Widal's reaction, material germs, etc. A large proportion of cases are undoubtedly due to absorption of toxic matter in the course of healing, though there are a certain proportion that may be credited to shock. In the diagnosis of aseptic fever, however, it can be distinguished from shock by the good quality of the pulse and we can readily exclude other varieties of absorption fever (toxins, bile, thyroid juice), by the history of the case. We can distinguish it from inflammatory fever by its early appearance, by the fact that the pulse remains relatively low, and the patient has few subjective sensations other than a little thirst and flushing. The character of the pulse as well as its rate is of importance, as in aseptic cases it remains quite soft. The pulse will probably be the best guide in doubtful cases. The fall of aseptic fever is not so characteristic. It may reappear in two or three days or the temperature may continue a little above normal for weeks. He alludes, however, to the fact that there are many mixed cases as in case of toxins from sterile pus in the tubes, as in pyosalpinx or severe shock.

110. *Sanitarium Treatment of Phthisis.*—Bowditch reports the results of thirty-six cases that have been treated and discharged as arrested cases from the Sharon Sanitarium from February, 1891 to September, 1898. Excluding two cases that were there only a short time and have been discharged but a little while, there were 34 cases; 6 of these died after various periods, mostly on account of unhealthy surroundings or occupations; 1 has not been heard from recently; 24 are living, apparently well, and in active work; 3 have had slight return of their former symptoms but are still active and apparently doing well. He gives the history of the diseased cases, showing the apparent or probable cause of death. In every case efforts were made to keep the patients from returning to the same conditions as those in which the disease had developed. This is not always easy. The treatment generally was insistence on fresh air, judicious exercise and good healthy food, medicine being used rather sparingly and as an adjunct to general treatment. The reports are of interest as showing that phthisis can be arrested by treatment in a sanitarium not especially favored by climatic conditions and near a large city. This being the case, the possibilities of the cure of consumptives are greatly increased.

112.—See abstract in **FOREIGN**, May 20, p. 1116.

FOREIGN.

British Medical Journal, June 10.

Misplaced Testes and Their Surgical Treatment. H. BERTRAM ROBINSON.—The author describes the different forms of ectopia and retentio testis. Of the former the perineal type is the most common. He reports four cases, in two of which he operated by dissecting the testis free and pulling it down into the scrotum through the bottom. The crural form is rare. If he had such a case he would operate by bringing the gland into its proper place through the floor of the inguinal canal, not hesitating to cut Poupart's ligament and re-suture it afterward. The pubescence form is very rare. The testis here is alongside of the root of the penis. It is said to be due to great development of the inner attachment of the gubernaculum. In the abdominal form the testis is out of position by passing upward outside of the external oblique above the external ring into the peritoneal sac similarly placed. It has been attributed to the action of a truss on an undescended testis, but Robinson can quote cases where this factor was lacking. He reports two cases, one operated on both sides, the testicles being brought down into the

scrotum. Four forms of the retentio testis are recognized, the abdominolumbar, where it does not descend at all; the iliac, where the testicle is in close relation with the internal ring resting on the psoas; the inguinal, where it occupies any portion of the canal, including the interstitial variety, where the sac extends between the structures of the abdominal wall; and the cruroscrotal, where it stops just outside the external ring over the pubic crest, requiring careful diagnosis from the pubescence and higher perineal ectopic forms. In all but the last of these, when complicated with hernia, the operation of castration is advisable, but if the testis is outside the ring, attempts may be made to carry it down to the proper location. In this case the lower part of the gland should be attached to the perineum behind the scrotum to prevent retraction, and the cord may likewise be fixed to the pillars of the ring for the same purpose.

Ameba Dyscystariae: Relation to Tropic Abscess of Liver. D. C. MARSHALL.—This is the report of a case of recurrent liver abscess, coming on after return to the tropics, in which death was caused by a thrombus containing large numbers of the amebae, a hitherto undescribed pathologic condition. Illustrations of microscopic sections showing the conditions are given. The author emphasizes the danger of recurrence and of the too early return to the tropics—within two years—after the abscess has been cured.

Removal of Fibroid from Uterus Unicornis in Parous Subject. ALBAN DORAN.—In this case there was a myoma of a rudimentary horn connected by an imperious band with a well-developed side. The woman had twice been pregnant, once carrying the child to term. The operation left the developed side intact. The author finds the condition a very rare one, the only one reported precisely like this being one of Dr. Armand Routh's.

Lancet, June 10.

Fragments of Pathology and Therapeutics. W. HOWSHIP DICKINSON.—The Baillie lecture of Dr. Dickinson was for his subject cardiac dilatation, especially in relation to valvular lesions. He describes the mechanism of the production of this condition and sums up as follows: "Both dilatation and hypertrophy are brought about by intracardiac pressure, which is either absolutely increased or is greater than the means of resistance. Commonly these two results are associated, though the proportions vary. Hypertrophy is apt to prevail when there is undue retention of the blood during systole, dilatation when there is undue intrusion of the blood during diastole. Hypertrophy is the more apparent when the exit of the blood is impeded, dilatation when the entrance of the blood is increased. The one affects the heart in systole, the other diastole. The origin of dilatation in distension during diastole, though not the only mode of its production, may perhaps be regarded as the chief and as one to which attention needs to be emphatically called.

Effect of Baths, Massage and Exercise on Blood Pressure. WILFRED EDGECOMBE and WILLIAM BAIN.—The following is the summary of the experimental study of Edgcombe and Bain: 1. Cold baths raise the arterial pressure, maximum and mean, and lower the venous pressure; after reaction the arterial pressure falls and the venous pressure rises. 2. Percussion added to cold increases the rise in arterial pressure. 3. Warm baths of plain water lower the arterial pressures and both absolutely and relatively lower the venous pressure. 4. Turkish baths lower the arterial and venous pressures to a greater extent, though the fall in venous pressure is proportionately not so great as that in arterial pressure. 5. Saline baths at warm temperatures lower the arterial pressure to a greater extent than plain water baths at the same temperatures; the venous pressure, though absolutely lowered, is relatively raised; where the amount of saline material in solution is considerable, a further lowering of arterial pressure takes place, while the venous pressure becomes absolutely raised. 6. Dry massage lowers the arterial pressure and relatively or absolutely raises the venous pressure, provided the abdomen be not massaged too vigorously; when this is done a rise in all pressures occurs. 7. Warm temperature plus massage, as in the Aix douche, has a more powerful effect in the same direction than dry massage alone. The effect of a series of Aix douches is cumulative. 8. The effect of exercise on the blood pressure depends on the severity of the exertion. In all forms an initial rise in arterial pressure occurs; if the exercise be mild, a fall occurs during its continuance; if severe, the rise is maintained; after exercise, moderate or severe, a fall takes place. The venous pressure is raised during all forms of exercise and remains raised during the subsequent arterial fall. The return to normal after exercise takes place more or less rapidly, according to the gentleness or severity of the exercise and the temperature of the atmosphere.

Systematic Muscular Development as a Radical Cure of Hernia. A. A. WARREN.—The principal point in this paper is the value and importance of systematic muscular exercise as a substitute for operation in hernia, especially in the young. The author has followed a number of cases in which great benefit occurred by strengthening the abdominal muscles in this way, and he claims that gymnasts and athletes generally show a much more firm and smaller internal ring than do ordinary individuals. He suggests the following exercises as among the best for patients to take: 1. The patient, with his hands at his side, raises himself from the dorsal decubitus to a sitting posture twenty or thirty times, twice or oftener each day. 2. Similarly from the horizontal position, let both legs be raised from the ground almost to a perpendicular; this also twenty or thirty times till there is distinct fatigue. 3. Modify the first of these three exercises by raising the body sidewise in a rotary movement, and thus exercise the obliques. Similar modification may be introduced by extending the arms during the movements, by the use of dumb-bells or exercisers, and so on.

Revista Med. de Chile (Santiago), March.

Toxic Action of Benzene and Some of Its Derivatives. A. L. SILVA. The kidney and the liver are the organs studied in this connection, and a diffuse inflammation found to be the type of the lesions produced by benzene, phenol, nitrobenzene and anilin, which affect the kidney and liver as a protoplasmic poison, attacking the tissues directly, or disturbing by the same mechanism the centers regulating the circulation or destroying the vital elements in the blood.

Bulletin de la Societe Medicale des Hopitaux (Paris), June 1.

Linear Scarifications in Treatment of Ulcerations of Cervix Uteri. A. SREBRY.—The cervix is drawn out and scarified with fine strokes, as close together and deep as possible and crossed, similar to the dermatologic treatment of acne, etc. No pain is experienced and the blood that issues from the scarifications is never important, not requiring hemostasis. Four or five seances are usually necessary to scarify every scrap of the diseased or ectopic tissue and evacuate any cysts that may be found. The results are highly satisfactory, and the cysts do not recur.

Journal des Sciences Medicales de Lille, May 20.

Surgical Treatment of Female Incontinence of Urine. H. FALQUEE.—The aim of Fischer's operation for essential incontinence of urine in women is to sever the nerves connecting the urethra or bladder or both with the genital organs, and other methods of intervention have only succeeded when this was unconsciously accomplished. A small, long flap a centimeter in width is cut out of the tissue of the vaginal mucosa each side of the urinary meatus after two vertical incisions, leaving the urinary meatus at the lower end of the urethra untouched. The raw edges are left to cicatrize separately, with a strip of gauze between, although each of the lips is sutured with fine silk. This "lateral and inferior liberation of the meatus" includes the resection of any adhesions or bridges binding down the meatus, and will be found successful in all forms of incontinence of urine in females.

Revue Generale d'Ophthalmologie (Paris), May 30.

Prophylaxis of Expulsive Hemorrhage After Removal of a Cataract. PRIBON.—Two observations are reported of this complication, both in persons about 74 years of age, both affected with pronounced arteriosclerosis. In one the hemorrhage occurred at once and the entire contents of the eyeball were expelled, which was prevented in the other by introducing the scissors into the hernia of the vitreous body, beneath which a mass of blood could be seen, and cutting down to this mass, thus allowing the blood to escape freely. There was slow, persistent hemorrhage for six days, and later hyperemia, iritis and a pupillary exudation, but the perception of light was retained, and sight seems to be gradually improving. To avoid a similar complication when removing the cataract from the other eye in these two cases, Peschel made a wide dissection in the shape of a letter N, not allowing any aqueous humor to escape. Four to seven days later he did a small vertical linear keratotomy in the temporal half of the cornea, crossing the membrane rather obliquely, and then by slight pressure expelling the softened remnants of the lens, completing the evacuation with a David curette; scopolanin and dressing. In the second case he reopened the wound in the cornea in five days to remove the last scraps of the lens. Recovery was normal in the first, vision 10-20. There was slight hyperemia and irritation in the other case, and vision 10-40.

Centralblatt f. Chirurgie (Leipzig), June 3.

Simple Method of Trephining for Intracerebral Injections. A. KOCHER.—This communication is not a plea for these in-

jections, but merely an announcement that the technic is absolutely simple and harmless and requires no special skill on the part of the general practitioner. After a subcutaneous injection of 1 per cent. solution of cocaine, the skull is bored through with a small drill held perpendicularly, the drill withdrawn and the syringe needle inserted in its place into the brain matter. The spot best adapted is 2.5 to 3 cm. laterally from the bregma, in front of the precentral sulcus, on a level with the sulcus between the middle and superior convolutions. This spot allows the passage into the ventricle without injury to the motor centers. Four cases of tetanus observed recently at the hospital (Berne) were all treated with these intracerebral injections of tetanus antitoxin and all recovered.

Deutsche Medicinische Wochenschrift (Berlin), June 1 and 8.

New Modification of Suspension Treatment for Nervous Troubles. S. H. SCHUBERT.—The inconvenience that the weight of the limbs is unnecessarily added to the weight of the suspended spinal portion of the body, and several other inconveniences of the usual methods, are obviated by this modification, which suspends the patient seated. A large pulley wheel is mounted on top of a solid post, and a rope passes over it, from one end of which the subject is suspended by means of weights on the other end of the rope. The subject sits on a chair or seat projecting from the post, and is suspended by the head and elbows. Bearing down on the elbows relieves the pressure on the head, and the weights can be graduated to suit individual cases.

Restoration of Function of Arm in Case of Paralysis of Deltoid Muscle. M. ROTHMANN.—By means of daily passive movements of the arm, galvanization and practicing the other muscles of the shoulder, Rothmann succeeded in restoring satisfactory function in an arm paralyzed after acute articular rheumatism, notwithstanding the persisting paralysis of the deltoid.

Injections of Toxin into Brain. J. BRUNO.—Injected directly into the brain, the effect of morphia, for instance, is not at all the usual picture of intoxication with this alkaloid, but violent clonic and tonic spasms are produced, showing a local irritation of the subcortical centers known to be the spasm centers in the rabbit. A very much smaller amount will produce intoxication by this method, and experiments with sodium ferrocyanid and methylene blue demonstrate that the fluid injected makes its way through the lymph-passages into the ventricles and thus produces the direct local irritation of the subcortical centers. Intoxication follows the injection of any substance that chemically acts the protoplasm of the brain cells; ferrocyanid, for instance, harmless injected into the general circulation, produces violent intoxication by this route, but indifferent substances, such as sugar, urea, salt and Glauber's salts, produce no reaction. It is evident that it is impossible to draw any conclusions in regard to the general effect of a substance circulating in the blood from the effect of these local cerebral injections.

Muenchener Medicinische Wochenschrift, June 6.

Accidents After Manipulative Reposition. H. KAPOSI.—Pays reported last year a case of fatal fatty embolism after "brisement force" on account of ankylosis of the knee-joint, and five somewhat similar cases are on record. Czerny recently undertook to correct a flatfoot by manipulations without force, under ether, and the application of a plaster cast. The foot seemed perfectly healthy, but an acute osteomyelitis developed, with complete necrosis of the cuboid, threatening amputation, and leaving the foot in a much worse condition than before, the patient a boy of 15, not very strong, but of healthy parents. He also reports a second case of accident: a young woman, whose clubfoot he corrected by manipulations and section of Achilles' tendon and plantar fascia. The nervous plantaris must have been unduly stretched, however, as a neuritis developed, causing insomnia, general nervousness, pain and lack of appetite, lasting for six months.

Wiener Klinische Rundschau, June 4.

New Method of Determining Amount of Urea in Urine. E. FREUND and G. TOEFFEL.—Equal parts of normal concentrated urine and 95 per cent. alcohol (5 c.c.) are evaporated to dryness on the water-bath, extracted with absolute alcohol and filtered, the alcohol then evaporated to a mere trace and about 70 c.c. of a saturated ethereal solution of oxalic acid poured over and left to settle. The ethereal solution is then carefully poured off over a filter, leaving the residue in the filter, in which it can be washed in several portions with 60 to 80 c.c. of ether. When the filter is dry the contents are washed and titrated with two drops of a 1 per cent. solution of phenol phthalein until decidedly red, and then the nitrogen determined by Kjeldahl's method: 1 c.c. $\frac{1}{4}$ normal solution of sodium solution corresponds to 0.015 gram of urea. Al-

bumin or sugar in the urine does not affect the accuracy of the test.

Wiener Klinische Wochenschrift, June 1.

Dangers of Application of Murphy Button. R. FORGES.—In the course of an operation for carcinoma, involving the pylorus and transverse colon, the Murphy button was applied to the colon, at a point exactly over the spine. The patient complained of a sensation as if a stone were resting heavily where the tumor had been, and, later, symptoms of occlusion developed, terminating fatally. At the autopsy the anastomosis was found perfect, but the duodenum was compressed and its lumen closed between the Murphy button and the spine. The enforced rest in bed and compressing bandage had contributed to this effect, which could easily have been avoided if such an experience had ever been recorded before as a warning.

Gaceta Medica (Mexico), May 15.

Bacteriologic Study of Yellow Fever. A. MATIENZO.—The conclusions of this study of a number of cases of unmistakable yellow fever observed at Tampico are that none of the microbes discovered to date are the specific agent of yellow fever, posure to 15 degrees C. below zero fails to affect its virulence and development, and other characteristics proclaim its kinship with the coli bacillus and Eberth's bacillus. Sanarelli himself states that it is impossible to isolate it in more than 58 per cent. of the cases. Matienzo believes that the true agent is an infinitesimal organism, impossible to discover with our present means of research, "smaller than the infinitely small," as is probably also the case with hydrophobia, small-pox and measles.

Nord Medical (Lille), June 1.

Thyroid Treatment to Accelerate Consolidation of Fractures. LAMBRET.—The JOURNAL has called attention to the success obtained in several cases of tardy consolidation by administering thyroid extract, and this effect has been confirmed by later experiences related in the *Brazil Medico* and other exchanges. Lambret now announces that he administers thyroid extract in appropriate cases from the beginning, and finds consolidation wonderfully accelerated. He describes one case in particular, a fractured limb; the patient was walking on it the seventeenth day. Sixty centigrams of thyroïdin were administered every day.

Lyclop. Russkoi Chirurgii, No. 1.

Surgery of Lung and Diagnosis of Pleural Adhesions. K. SsAPESHKO.—The writer has been remarkably successful in his interventions on the lungs for cavities, gangrene, abscesses, etc., restricting operation to regions he knew to be surrounded by preexisting adhesions, only requiring strengthening with a few stitches. He diagnoses pleural adhesions and defines their limits by means of a blunt, hollow, eyeless needle with one opening in the side 1 to 2 mm from the tip. The other end is connected by a rubber tube with a two-branched glass tube which serves as a manometer. The blunt tip of the needle is inserted through a small incision in the skin and slowly pushed through the musculature and into the pleura costalis, when it makes a peculiar sound. Pushing it still farther, if the pleura is free from adhesions, the needle pushes up the lung, and as soon as the opening in the needle enters the pleural cavity, the fluid is aspirated into the needle by the negative pressure in the cavity, and the fluid in the manometer rises. If the fluid remains unvaried, this is evidence that there is no pleural cavity at this point, and that the walls are adherent. This test has been frequently applied and has never failed. Ssapesko has also succeeded in producing adhesions artificially—dogs—by injecting one gram of a 5 per cent. solution of formalin, or 10 to 20 per cent of potassium, or 10 per cent of nitrate of silver. He is confident that adhesions could also be produced in the human pleura in five to seven days by injecting five or six drops of a 1 to 2 per cent. solution of formalin with the needle above described, after injecting five to ten drops of a 5 per cent. solution of cocaine.

Plastic Restoration of Urethra with Continence. G. D. ROMA.—He reports a new plastic urethra made in a case in which the urethra had been completely destroyed. It was then twisted as Gersuny suggests for the rectum, in two sitings, 180 degrees each time. The patient has complete control of the emission of urine, even when the bladder is full, except when she reclines on the left side.

St. Petersburg Medicinische Wochenschrift, May 27.

Treatment of Syphilis with Specific Serum. A. VYEVODOVSKI.—Sixteen patients with fresh syphilis injected with serum from others in the late condylomatous and tertiary stages, were very much improved and all manifestations disappeared. The effect on the blood was especially marked.

the amount of hemoglobin, the number of red corpuscles and the morphologic metamorphosis of the white corpuscles all very much increased. This effect on the blood is specific, as control tests with normal serum were entirely negative. In one case, completely freed from all syphilitic manifestations by the serum treatment, January, 1896, there has been no recurrence.

Torsion of Cecum. E. CANDAU.—The writer adds another to the twenty-five cases on record in which the cecum was twisted on its axis, closing the lumen. The thirteen unoperated cases all died, and in this case there were evidences of commencing peritonitis when the laparotomy was done, fifty-four hours after the patient felt "something go wrong" when lifting a heavy weight after a hearty meal. The cecum was merely straightened and replaced.

Societies.

International Conference for Regulation of Introduction of Spirits into Africa.—This conference, which recently met at Brussels, with twelve powers represented, passed resolutions to have the import duties on spirits very much increased, according to *Sen. Med.*, June 14.

Indian Territory Medical Association.—At the annual meeting of this Association, held at South McAlester, June 20-21, the following officers were elected for the ensuing year: president, G. A. McBride, Ft. Gibson; first vice president, F. S. Clinton, Luka; second vice president, W. O. Shannon, Durant; secretary and treasurer, LeRoy Long, Caddo. The next meeting is to be held at Wagoner in December next.

Seventh Russian Medical Congress.—One of the most interesting communications presented at this successful Congress, at Kazan in May, was the report of E. Assendelft, a general practitioner in a remote corner of Russia, who has kept up with the achievements of modern surgery in his isolation, and reported 669 operations for calculi with a mortality of only 2 per cent., and no deaths in a series of 100 cases of sectio alii, out of a total of 400.

Delaware State Medical Society.—The 110th annual meeting of this Society convened in Wilmington, June 13, the address of welcome being made by Dr. Henry R. Spruance. The election of officers resulted in: president, O. D. Robinson, Georgetown; first vice president, William H. Hancker, Farnhurst; second vice president, John W. Clifton, Clayton; secretary, John Palmer, Jr., Wilmington; assistant secretary, William P. Orr, Lewes. The next meeting will be held in Rehoboth.

Tri-State Medical Association.—This Association, embracing members from Maryland, Pennsylvania and West Virginia, elected the following officers at the close of a two-days session at Markleton Sanitarium, Pa., June 22: president, J. M. Spear, Cumberland; vice presidents, Americus Enfield, Bedford, Pa., R. Gerstle, Elk Garden, West Va., and W. J. Craigie, Cumberland; recording secretary, Percival W. Lantz, Alaeka, West Va.; corresponding secretary, F. W. Fachtman, Cumberland; treasurer, H. W. Hodgson, Cumberland.

South Dakota Medical Society.—At the recent meeting of this society, held in Yankton, S. D., the following officers were elected: president, D. W. Rudgers, Yankton; first vice president, T. F. Beveredge, Bridgewater; second vice president, C. M. Keeling, Springfield; secretary and treasurer, W. J. Maytum, Alexandria; assistant secretary, L. F. Diefendorf, Aberdeen. In a discussion of a new medical law, one similar to the present Alabama law was favored and funds were appropriated for having such a law drafted, while every effort will be made to secure its passage by the next legislature, January, 1901.

American Neurological Association.—This Association, at the annual meeting, held in Atlantic City, N. J., recently, elected officers as follows: president, E. D. Fisher, New York; first vice president, Morton Prince, Boston; second vice president,

James W. Putnam, Buffalo, N. Y.; secretary and treasurer, Graeme M. Hammond, New York; councilors, James Hendrie Lloyd, Philadelphia, and Joseph Collins, New York; honorary member, Dr. Robert T. Edes, Boston. The next meeting will be held at Washington, D. C., in May, 1900.

Minnesota State Medical Society.—The new officers of this Society, the annual meeting having just closed in St. Paul, are: president, Walter Courtney, Brainerd; first vice-president, W. H. Magie, Duluth; second vice president, Helen Bissell, St. Paul; third vice-president, E. E. Bennett, Glencoe; treasurer, K. J. Hill, Minneapolis; secretary, Norman Davis, St. Paul. The question of the disposition of the \$200 donated by the Society to the New Richmond cyclone sufferers came up, and it was decided to divide the money equally among the three practicing physicians of New Richmond, all of whom lost their homes by the disaster. The Society will meet in Duluth the last Wednesday in June, 1900. A further report of the meeting will appear in the JOURNAL.

St. Louis Medical Library Association.—This Association was recently organized and a goodly number of the representative physicians of St. Louis have joined. The intent of the organization is the development of a medical library which will be in harmony with the dignity and best interests of the medical profession of St. Louis. The following officers were elected for the year 1899: president, N. B. Carson; vice-president, John H. Duncan; secretary, F. L. Henderson; treasurer, A. R. Kieffer; librarian, Frank J. Lutz. The headquarters of the library are in the Young Men's Christian Association Building. The Association requests the various medical journals of the United States to put their journals on file with the Association, and would be glad to receive books from publishers, and indeed from all interested in the organization. Due credit for all contributions will be given.

French Congress of Ophthalmology.—Among the communications presented at this Congress, held at Paris recently, was Antonelli's report of fine results obtained in lachrymal affections with very small sounds made of gelatin and 50 per cent. protargol. Rohmer warmly endorsed the practice of open treatment of the eyes after operations for cataract. He has fully established that the natural occlusion of the lids and the lachrymal secretions maintain the aseptic conditions realized, while the daylight favors the contraction of the pupil and lessens the danger of hernia of the iris. He has his patients wear a small, light, loose curtain bandage over the eye, merely as a reminder not to touch them with the fingers. Gourfein stated that the lachrymal sac in rabbits can be infected with solid cultures of Koch's bacillus. De Wecker described his successful efforts to divert the exosmotic current traversing the retina, attracted by the excess of salts in the vitreous body, which he assumes may be the primary cause of detachment of the retina. He injects for this purpose salt solutions under the conjunctiva and the capsule of Tenon, preferring sodium sulphate and gelatin. This treatment favors spontaneous cure and can do no harm.

American Proctological Society.

Meeting, held at Columbus, Ohio, June 6, 7, 1899.

SPECIALISM IN RECTAL DISEASES.

Dr. JOSEPH M. MATHEWS, Louisville, delivered this address setting forth the importance of giving rectal diseases special study, and said in part: "It is a notorious fact that there is more quackery practiced in the diseases of the rectum than in any other department of medical practice. This state of things is to be deplored. These important and most serious affections should be entitled to a separate and special consideration; and who will dare to say that those who practice them are not entitled to the privilege of forming themselves into a society? Nothing will contribute more to the advancement and to the elevation of this long neglected subject than this contemplated organization. The principal part of our knowledge must ever

come from comparing our own observations with those of others; then how apparent to all must be the utility which the Society will afford in opportunities for the mutual communication of thought and action."

PRURITUS ANI.

Dr. TUTTLE said that the term "pruritus ani" has for the scientific physician only a vague significance, but for its victims it is portentous with evil. The condition should be dealt with, constitutionally, then locally. He is not a believer in pruritus anieentially. The constitutional condition on which the theory of this disease is founded, he admits, and reckons it an important element; but he insists that there is always an exciting cause for the disturbance and on this cause will depend the physical appearance of the parts; and we know full well the diseases which cause these physical changes in the parts, and these diseases occurring in the dysesthetic patient instead of causing pain produce itching until the irritation and scratching of the parts produce pain.

Among the causes enumerated, he mentioned oxyuris vermicularis, colitis, sigmoiditis, catarrhal diseases of the rectum and uric acidemia. These pathologic conditions are the ones which he has found most often in obstinate and obscure cases. To the scientific physician all treatment must be based on his conception of the pathology of the case; remove the pathologic cause, treat the disease and not the symptom. Nitrogenous diet, alkaline diuretics, salicylic compounds and hot baths compose the general routine of treatment. Local applications of carbolic solutions, larkspur, black wash, salicylic acid, chloral hydrate, extract conii, camphor, cocaine, tar, etc., may all be used in one form or another. Having determined the variety and type of the disease producing pruritus, it is not difficult to manage, and in most cases we may confidently expect a radical cure.

MODIFICATION OF WHITEHEAD'S OPERATION FOR HEMORRHOIDS.

Dr. EARLE of Baltimore, after reviewing usual methods of operations for removal of hemorrhoids, described his own method, which consists of clamping the tumors by sections, beginning at an incision in the fourchette where primary incision is made to determine the depth at which to place the clamp. After removing the tissue above the clamp by piecemeal a continuous suture, beginning at the primary incision, is inserted around the clamp. When the first section has been cut away and sutured, the clamp is removed and the suture drawn taut, and the clamp again put in position until the whole anal circuit has been treated. He has given this method a thorough trial, and unhesitatingly considers it the safest, easiest, and by far the best method he has ever tried. The operation is practically bloodless, and healing by first intention is secured. The convalescence is complete at the end of the week.

ACT OF DEFECATION.

Dr. THOMAS CHARLES MARTIN, Cleveland, said that a knowledge of the anatomy of the rectum is necessary to form an appreciation of the physiology of defecation. The bundles of circular fibers which constitute the muscular element of the rectal valve belong to the same mechanism and have the same function as those which form the ental sphincter. It is the function of the normal rectal valve to beneficently retard the descent of the feces, and it is obviously true that it may be the especial property of the valve in certain other than normal conditions to maliciously obstruct the descent of the feces. His experience convinced him that a perfect knowledge of the rectal valve constitutes the key to an understanding of obstipation, rectal stricture and their sequelae.

CONSTIPATION FROM THE STANDPOINT OF THE PROCTOLOGIST.

Dr. A. B. COOKE, Nashville, read an exhaustive paper on this subject, and defined constipation as a diseased condition of the alimentary canal characterized by a modification of function which results in the pathologic retention of fecal matter. He stated among the causes: 1, those springing from the violation of hygienic law; 2, defective innervation, expressed either in atony of the muscular coat of the intestine or in decreased secretion; 3, sluggishness of bowel function; 4, the habitual use of purgative medicines; 5, mechanic obstruction; 6, painful affection of the anus.

The relations between constipation and disease of the rectum are intimate and noteworthy in that either may be cause, effect, or both, with reference to the other. Rectal reflexes came in for a fair share of consideration. In conclusion he stated as his conviction that in a large proportion of cases constipation either originates in or is maintained by causes located in the distal ten inches of the intestinal tract. If this be true, the notorious inadequacy of ordinary treatment is at once accounted for, and the duty of the proctologist in the premises becomes obvious.

RECTAL ADENOMATA.

Dr. WILLIAM M. BEACH, Pittsburgh, presented this subject. He defined an adenoma as a hypertrophy of gland texture, noted briefly the nature of these growths and the value of the proctoscope in their early diagnosis and treatment. There are two principal types of adenomata: 1, the gelatinous, composed of elements of mucous membrane; 2, the mixed variety, consisting of mucosa and submucous cellular tissue. The adenoma with a long pedicle is benign, while growths with a broad base tend to malignity.

After discussing symptoms and complications, he pointed out that by means of the old methods of examining the rectum it is well nigh impossible to locate these growths of the upper rectum; and that the newer proctology substitutes exact methods in diagnosis and treatment of non-malignant adenomata that are most gratifying to both the patient and surgeon.

In conclusion he said that: 1, rectal adenoma may be hard or soft and contain the constituent elements of the mucosa and submucosa; 2, these growths are benign and malignant; 3, benign in their origin, they may become malignant; 4 early recognition is of first importance, and is made possible by the new methods of inspection.

POST-OPERATIVE TREATMENT OF HEMORRHOIDS.

Dr. J. R. PENNINGTON, Chicago, presented this subject, his tampon having been described in the JOURNAL of May, 13, p. 1081.

Illinois Society for Prevention of Consumption.

Prominent physicians and laymen organized this society at a meeting held in the rooms of the Chicago Medical Society, June 20, 1899.

The meeting was called to order by Dr. ARTHUR DEAN BEVAN, president of the Chicago Medical Society, who said that the prevention of tuberculosis is an important object, not only to the physician, but to the general public. Already so much has been accomplished by modern medicine in the prevention of disease, that difficult as the problem may seem, he ventures to predict that just as surgeons have prevented wound infection and suppuration in their operative work by the application of methods based on scientific knowledge of the causes of wound infection, so in the next few years it will be possible for the medical profession, aided by a better-educated public opinion and by state and municipal authorities, to practically eliminate tuberculosis from the community. Much has been done by German authorities in preventing trichinosis by proper inspection of hog products. Ten years ago trichinosis was common in Germany, and was the cause of a great many deaths, while now it is a comparatively rare and exceptional disease. Clinical research and laboratory investigation have proven conclusively that tuberculosis, like trichinosis, is one of the diseases communicated by animals to man. In this connection, he said he had now in his laboratory a microscopic section which furnishes a good deal of food for thought in this relation. From a butcher suffering from lupus of the face, diseased tissue was removed and Thiersch grafts placed over the raw surface. In the section there were found not only typical tubercular areas and bacilli of tuberculosis, but also trichinae. Undoubtedly this butcher got the trichinae from the pork which he had eaten. It is possible that in the same way he acquired tubercle bacilli from the animal food products which he handled.

Laboratory investigation has shown that a large proportion of the milk used in our cities contains bacilli of tuberculosis. The same may be said of butter, but to a less extent. Considering these facts: 1, that tuberculosis is produced by a known germ, and, 2, that the disease may be transmitted through some product of food or by some individual suffering from the disease, it does seem within the power of man, with our present knowledge, to eliminate this common disease from the community. To do this, we must have a widespread knowledge of facts. Public opinion must be educated, and we must succeed in obtaining laws which will prevent tuberculosis by proper inspection of dairies, etc.

REPORT OF COMMITTEE ON TUBERCULOSIS.

Dr. ARTHUR R. REYNOLDS read the report of the committee appointed last December.

"The undersigned, members of the general committee on tuberculosis, of the Chicago Medical Society, appointed for the purpose of formulating plans for the organization of a society for the prevention of tuberculosis, beg to submit the following report and recommendations:

"1. The formation of such a society, chartered by the State of Illinois under the act concerning corporations, is urgently rec-

ommended, and the time is opportune by reason of the universal popular interest in the disease. The society should be framed with reference to the popular interest. Hence its membership should consist, not only of medical men, but of the laity generally, and of both men and women.

"While it requires but three individuals to incorporate, its board of trustees should be large enough to insure a full representation of all desirable interests, and since it is proposed to extend its operation throughout the State, provision should be made for trustees from localities outside of Chicago. Their number may be fixed by the laws and need be specified in the certificate of incorporation."

On motion, the report of the committee was received and the committee discharged.

Hon. CARTER H. HARRISON, mayor of Chicago, took the chair, and said the magnitude of the work to be undertaken is shown by the fact that one-tenth of all deaths are due to tuberculosis, and that being true, any effort made by the physicians of Chicago or anywhere else in the Nation to remove the cause of this dreadful disease and to discover means of exterminating it would be gladly welcomed and the subject of gratulation of citizens.

On motion, Dr. JOHN A. ROBISON was elected secretary pro tem of the meeting.

On motion of Dr. EDWARDS, a committee was appointed to report on constitution and by laws of the society.

Mr. JESSE COX was then introduced and said that tuberculosis is a disease due primarily to poverty and ignorance—ignorance which prevents people from knowing what to do to prevent the disease, and poverty preventing them from being able to carry out what they do know. As long as these two factors prevail, not all societies would be enabled to fully eradicate the disease, but much could be done toward its extermination by such a society as this. The public can be educated; the legislature can be educated and perhaps acted on in other ways. Laws can be enacted which will enable officers to meet the different regulations which can minimize the disease.

Dr. L. G. MARILLET spoke on behalf of the Chicago Veterinary Society, and presented a summary of some of the points which he was prepared to demonstrate: 1. That the tuberculin test for bovine tuberculosis is sufficiently reliable to be practical. 2. That the sale of milk from tuberculous cattle should be absolutely prohibited, and that the apparent absence of tuberculous processes in the mammae of a cow is no assurance of non-infectious milk. 3. That tuberculosis is raging among the dairies of Chicago and vicinity, and the population of Chicago is actually being infected with tuberculosis through its milk supply. This is a broad statement, calculated to scare people, but it is not made with any such intention. It is simply a fact which he is prepared to demonstrate. 4. That proper veterinary inspection of dairies will eventually result in purifying the supply, and such inspection can be conducted at very moderate cost. 5. That such inspection should be conducted under the directions of the Commissioner of Health of the City of Chicago, who, in turn, should collaborate with the state officers in their efforts to entirely exterminate the disease from domestic animals.

Dr. A. S. ALEXANDER followed and said that in order to insure absolutely wholesome, pure, innocuous milk we must have: 1. A perfectly healthy, clean cow. 2. She must be fed on perfect, sound, sweet, nutritious food. 3. She must drink uncontaminated water. 4. She must be surrounded by perfect sanitary environment and housed in a fine stable. 5. The milk so produced must be protected against secondary infection. Tuberculosis may be eradicated from any stable by the proper use of tuberculin.

Dr. WILLIAM A. EVANS, continuing the discussion, said it was not his purpose to say anything relative to the methods by which the work of the society is to be accomplished. He desired to speak to three propositions: 1. Tuberculosis is the most widespread and deadly of all diseases. 2. Its economic importance. 3. The conditions arising from tuberculosis are remediable. He said in part: Of deaths from all causes throughout the world sanitarians are agreed that approximately one in seven is due to tuberculosis. Hirsch says that each year throughout the world five million people die from this disease, the nature of which is understood. It is a disease which is preventable. According to the census of 1890, 102,188 people died of tuberculosis in the United States during that year. Recognizing the fact that statistics on the subject of tuberculosis are always below proper statistics, and recognizing the advantage, if not necessity, of concealing deaths from this fell disease, it is easy to be seen that the number of people who die from tuberculosis in the United States each year must reach 150,000. This is a safe estimate. According to the statistics of Zubiana, there die each year in

France from 150,000 to 200,000. In Germany, according to the statistics of Leyden, the number of deaths attributed to this disease each year is 170,000. According to the statistics of Tatham, endorsed by Ransome and Thorne, they die annually in England and Wales, 60,000 people or 241 for each 100,000; Vienna, 450 for each 100,000; Buda Pest, 616 for each 100,000. In Philadelphia the annual death rate from this disease reaches 2800, or 11.6 of the total death rate. In New York City the annual death rate from tuberculosis is 3500 approximately. In Chicago, from 1857 to 1896, 39,000 people died from this disease, thus constituting $\frac{1}{10}$ of the entire mortality for this city. In the last six months, according to the statistics of the Health Department, there were 1552 deaths from tuberculosis, or a death to 8.4 per cent. According to the statistics of France, Austria, Germany and Italy, approximately one-fifth of the entire death rate of those countries is due to consumption. According to the Woman's Commission of Germany, at any given moment one out of fifty are either subject to or are suffering from this disease. On the basis of one out of sixty inhabitants, this means that to day there are in these United States 1,100,000 people suffering from tuberculosis. Figured on this basis, it means that in Chicago to-night there are 30,000 people who are affected with this disease. Biggs and Prudden of the Health Department of New York City say it is within the range of probability that there are 20,000 people walking the streets of New York serving as foci of infection for the spread of this infectious, contagious disease.

Dr. Evans then compared the death-rate from tuberculosis with the death-rate from other diseases, and gave the following: Smallpox and scarlet fever, 30 to 1; typhoid, 16 to 1; cholera, 5 to 1; all combined, $4\frac{1}{2}$ to 1. Tuberculosis kills thirty times as many people in Germany as do smallpox and scarlet fever combined. It kills sixteen times as many people as does typhoid fever; it kills eight times as many as does diphtheria; it kills $4\frac{1}{2}$ times as many as smallpox, scarlet fever, typhoid and diphtheria combined. According to the statistics of Laveran, from 1832 to 1854 cholera killed 57,335, while tuberculosis kills the same number of people in one third of one year. According to the figures of Celli for Italy, from 1805 to 1863, cholera killed 214,657 people, and during the same length of time tuberculosis killed 2,000,000 people. Says Anders: "I have found from an examination of the literature and of the available official statistics, that in all great cities in which active measures have been taken to obviate the spread of tuberculosis, there has taken place a decided, though gradual decrease in the death rate from this fell disease."

All sanitary legislation is based on antecedent education, and this is the philosophy of our existence to-night. There can come no legislation capable of coping with this disease until such a public sentiment has been created, until such a public view has been established that he who makes law will read what the sky contains for him. Ignorance is responsible for the conditions that exist. To awaken public conscience we must awaken public intelligence, and the scope of this Society is to awaken public conscience by reason of an awakening of public intelligence. A disease so well understood is one which can and surely will be combated. Practically every bit of laboratory work has been gone over in connection with this disease. The laboratories must furnish us facts that we can make all potent and all powerful.

Dr. Evans then concluded by quoting the words of the Prince of Wales in opening the British Conference on this subject. "You tell me that tuberculosis is a preventable disease. If preventable, then why not prevent it."

At the conclusion of Dr. Evans' remarks, the report of the Committee on Constitution and By-Laws was read, and, after some discussion, was adopted.

Officers were elected as follows: honorary president, N. S. Davis, Sr.; president, John MacLaren; first vice-president, William A. Evans; second vice-president, Edwin Klebs; third vice-president, A. H. Baker; secretary, John A. Robison; treasurer, Elbridge G. Keith; councillor, John P. Wilson; trustees—for one year, Frank Billings, J. B. Murphy, Truman W. Miller, A. H. Baker, Joseph Hughes; for two years, Mayor C. H. Harrison, Otto Young, N. S. Davis, L. O. Goddard, A. R. Edwards; for three years, Arthur Dixon, D. B. Scully, E. B. Gurler, John B. Sherman.

The efforts of the Society with regard to legislative action will be: To urge the State Legislature to appropriate a fund adequate to the needs of the State Board of Live Stock Commissioners; this sum to be probably \$50,000 for the first year, \$30,000 for the second, and \$20,000 the third.

To insist that the Legislature augment the executive force of the Live Stock Commission sufficiently to enable the Commission properly to fulfill its duties.

To urge that the Commission be empowered to administer

the tuberculin test to all cattle in the state without the consent, or, if necessary, against the wishes of owners of cattle.

To make it necessary that the Commission begin a systematic examination of all cattle in the state, in which all cattle not proving under the tuberculin test to be free from tuberculosis shall be condemned, and the owners compensated by the state at the scale of prices fixed by the Live Stock Commissioners.

To devise and recommend an efficacious plan for the prevention of the sale of tuberculous milk in Chicago; this plan, modeled for the most part after the method adopted by Buffalo, to recommend that the Common Council enact an ordinance creating a force of experts in veterinary medicine whose duty it shall be regularly to inspect the dairies supplying milk to the Chicago market, whether or not such dairies be within the city limits; and the plan further to provide that no can of milk shall enter the milk depots of Chicago without a number corresponding with a number on the sanitary report of the dairy from which the milk was shipped.

It is said, the Board of Trustees of the Society will meet on the first Saturdays in January, April, July and October. The Society will meet annually or oftener, if deemed necessary.

Chicago Medical Society.

Regular Meeting, held June 21, 1899.

SCIENCE OF MEDICINE AND ITS RELATIONS TO THE PUBLIC.

D. ARTHUR DEAN BEVAN delivered an address as president of the society. He began by saying that there is to day, at the close of the nineteenth century, a science of medicine just as truly as there is a science of chemistry, or of astronomy or anatomy. It is customary to deny to medicine the right to be called a science, and in the past centuries, and even until the past decades of the present century it was very proper to withhold this right; but the birth and development of modern pathology and bacteriology, and the development of physiology and anatomy and chemistry have changed this. These sciences are entitled to the highest claim of science and medicine which, in a broad sense, is the study of the human body in health and disease, and resting largely on these collateral sciences, has itself become a science. It is difficult for some medical men and for the public to realize this fact. Its general recognition will be a great gain for the world. Such a recognition must abolish from the thinking mind the poor, weak, temporary dogmas which have always clung to the skirts of medicine and which have masqueraded as new schools of medicine. Because if medicine is a science, there can be but one science of medicine. There can be no room for dogmas, and these dogmas dead will exist only as dried specimens on the shelves of medical history. If new dogmas arise, they will find adherents only among the queer people who to day still consult the astrologer or clairvoyant.

To prove that medicine is to day a science, let a few cases be examined with a modern medical man. A patient presents herself to the physician with a history of cough and emaciation. The physician analyzes the body of this patient as a chemist would analyze a substance submitted to him for examination. He considers the form, color, temperature of the body and the density of the lung tissue. He examines the sputum and finds the bacilli of tuberculosis. As a result of his analysis, his finding is that the patient has tuberculosis. Just as one chemist analyzes a substance and finds arsenic in it, so a man presents himself to a surgeon with a tumor of the neck, the surgeon considers the history, examines a small piece of the tissue under the microscope and finds actinomycetes. As a result of his examination, he knows that the patient has lumpy jaw, just as the chemist might analyze a piece of ore and find gold in it.

Medicine is a science and, like all sciences, it is dependent on other sciences. Just as chemistry is dependent on physics and mathematics, so medicine is dependent on chemistry, pathology and anatomy. Medicine does not hesitate to borrow from any branch of knowledge that may aid in its development, and it follows that as these aiding sciences develop medicine will advance. Medicine must lead the world know that it began the twentieth century as a pure science, and that it has left behind it the mystery, the superstition, the dogmas of the past.

The teaching of medicine must be in the hands of scientists. Students of medicine must be taught its truths and its limitations. The public with its evergrowing ability to grasp knowledge, must be taught its truths and frankly told its limitations. Nations and communities must learn to recognize great medical truths and enforce laws based on them for the welfare of their citizens. The practice of modern medicine means the

throwing overboard of a large part of the present materia medica. It means the starting on purely scientific lines, the building of a scientific system of therapeutics. Why should not the intelligent patient know that when he has pneumonia or typhoid, or, with few exceptions, almost any form of disease, no physician in the world to day can cure the disease with medicine? If he gets well, he cures himself. All that the physician can do is to surround him with conditions most favorable for his recovery. Let the public possess this knowledge; it will in no way belittle the office of the physician.

The country consumes millions of dollars worth of drugs each year, for the most part to the detriment of the consumers. Is it not the duty of scientific physicians to instruct the public as to the uselessness and danger of such folly. This task of revolutionizing medical practice can not be accomplished in a day; it will require years of time and much labor. It is, however, time to begin; it has already begun.

Medicine as a science will continue to grow; it will crush the dogma and the false, and in the end take its place as the highest and most useful branch of human knowledge.

Dr. Bevan then discussed the great duty which the science of medicine owes to the public, under four heads:

1. By developing and teaching the science and practice of medicine along purely scientific lines.
2. By demanding a high standard of knowledge and efficiency of men desiring to practice medicine.
3. By educating the public in the great truths of medical science.
4. By obtaining national, state and municipal recognition of the great medical truths which can be incorporated into laws for the good of the community.

These four propositions were considered separately. In Chicago there are twenty medical colleges. Possibly three of these are sufficiently well conducted to warrant their recognition as scientific schools; the others have no right to such a claim. They represent either some paltry or a pathologic desire of a group of men for the title of professor and the opportunity to advance and advertise themselves. This results in the turning out of poorly equipped medical men and the lowering of physicians generally in the eyes of the people. Let such professors with their cheaply bought titles pause and think what they are doing. The members of the Chicago Medical Society should place the stamp of their disapproval on such work.

Modern medicine demands a scientific training. The modern medical school must drill its students in the sciences of anatomy, physiology, pathology, chemistry, and pharmacology in well-equipped laboratories. These laboratories must be not only teaching mediums, but workshops for the discovery of new truths. After this preliminary work the student will study medicine, surgery, obstetrics and the specialties in well-equipped hospitals and dispensaries, and these hospitals and dispensaries must be not only places where patients are treated and students study, but they must be true laboratories where the problems of the human body in health and disease will be worked out, and from these laboratories must come the discoveries of new truths.

As our government is constructed, it is probable that it would be impossible to obtain a national law controlling medical practice, although such national control in the opinion of the speaker would be most desirable. In Illinois we are in a transitional stage; spasmodic efforts have been made by the better element of the profession to obtain effective medical legislation. During the last year considerable work was done by the Illinois State Medical Society and the Chicago Medical Society in the attempt to pass a medical bill which would have raised the standard to the present excellent standards of Minnesota and New York. This attempt failed and resulted in a compromise which is unfortunate and must be corrected. Every physician who desires to practice medicine in the State of Illinois should show evidence of a fair preliminary education and of four years' study in a recognized medical school. This evidence should entitle him to come up for examination before a State examining board. He should be examined in the cardinal branches of medicine, and if he shows proper fitness, be granted a license to practice. The diploma should under no circumstances be accepted as evidence of fitness. By united efforts the physicians of Illinois can have a satisfactory medical bill passed through the next legislature.

The third and fourth propositions which Dr. Bevan discussed are so closely correlated that be treated them together, viz.: 3, by educating the public in the great truths of medical science; 4, by obtaining national, state and municipal recognition of the great medical truths which can be incorporated into laws for the good of the community. These are broad subjects and can be but briefly referred to. When we see the good accomplished by vaccination, by quarantine against yellow

fever and cholera, by antitoxin in diphtheria, the lessening of typhoid by pure water supply, the elimination of trichinosis by inspection of hog products, as done in Germany, and now the great awakening in regard to the prevention of tuberculosis, one must be impressed with the tremendous possibilities of preventive medicine. The realization of these possibilities depends on the education of the people in the dangers of disease, the cause of disease, and the practical methods of prevention. When the mass of the people are once educated in dangers and means of prevention of disease, the necessary legislation will soon follow.

Finally, he desired that his address should emphasize two great functions and duties of the Society:

1. A demand for a higher standard of medical education and laws enforcing such demand.

2. The education of the public in the great established truths of medicine; the cause of disease, the known methods of prevention, and laws which will make this knowledge operative and effective.

With high ideals, with united effort, the Chicago Medical Society can accomplish much for the science of medicine and the good of mankind.

Following Dr. Bevan's address, the annual reports of the trustees, editor, treasurer, secretary, auditing and standing committees were read and disposed of.

The election of officers resulted as announced in the JOURNAL, June 24, p. 1458.

Appropriations were then voted for salaries as follows: for secretary, \$300; for treasurer, \$200.

Orleans Parish Medical Society.

Meeting held in New Orleans, La., May 27, 1899.

SPINAL CURVATURE, DORSOCERVICAL.

Dr. H. A. GILBERT related this case, occurring in C. Q., a native of Germany, 62 years of age, the mother of six children. She enjoyed good health up to the time of the climacteric, seven years ago. She was a large well-nourished woman, weighing 245 pounds; there was no history that threw any etiologic light on her case, save that of imprudence in exposing



herself to cold and dampness. About the time of the menopause she was troubled with rheumatism, which readily yielded to treatment. Later the patient lost the use of her left arm by paralysis, subsequently recovering it completely. She was next affected with paralysis of the muscles of the back, the head becoming bent forward and a little to the right, so that the chin came to rest on the sternum, in which position it has remained during the past four years. The patient is quite well otherwise, eating and drinking with zest, while at first she could see objects only when tilted back considerably, and the button holes which she had learned to make in her acquired position were crooked. She can now, thanks to the persistent use by Dr. Gilbert of nuxvomica, iodid of potas-

sium and electricity, not only see persons at some distance from her, but also cut her button holes straight.

Dr. HAMILTON P. JONES was inclined to think that perhaps the condition was due, not to paralysis, but to the adoption of that position which gave greatest relief from rheumatic pain in the neck. In his own attack of rheumatism, some years since, he had felt ease with his head flexed, and he had had to exercise some will power to keep from acquiring a faulty position.

Dr. C. J. MILLER suggested that the case might be one of arthritis deformans. He had had a case of this disease of eleven years' standing, under observation, in which the head was drawn back and there was involvement of various joints, notably of the temporomaxillary, which was the seat of partial ankylosis. In this case no benefit whatever had resulted from rheumatic treatment.

BOWEL TROUBLES IN ADULTS.

Dr. GEO. STUMPF sounded the praises of mercurous chlorid, while Dr. R. J. Mainegra favored the use of opiates and astringents, particularly of the camphorated tincture of opium and preparation of catechu.

Dr. MILLER referred to the treatment of amebic dysentery recommended to him by Dr. W. H. Watkins, a fellow member. During the past eighteen months he has used infusion of ipecac by the rectum in this condition, never failing to obtain relief from tenesmus and bloody stools. Regarding the use of opiates in the enterocolitis of children, he mentioned the fact that in several of these cases he had found albumin in the urine; in one such case opiates had an immediate bad effect, having to be withdrawn.

GNORRHEA AND MARRIAGE.

Dr. H. B. GESSNER brought up the matter of warning patients treated for gonorrhoea not to marry until the disease is known to have been completely cured. He had under his care a young man who contracted gonorrhoea in June, 1898; various injections had been used, causing a disappearance of the discharge from the meatus. Learning recently that this man was about to marry, he caused him to have his semen examined, and gonococci were found. This patient had never been warned of the danger of communicating the disease to an innocent wife. Surely it must be the duty of the physician treating such a case to warn the sufferer of the possible dangers to others, just as he would prohibit marriage for a term of years in a case of syphilis.

Dr. PHILIP ASHER mentioned a case of pyosalpinx operated on by Prof. Ernest Lewis, in which the infection was traced to an attack of gonorrhoea in the husband six years before marriage.

Dr. MILLER knew of three men who had infected their wives through ignorance of the possibility of doing so. In one patient, who had had gonorrhoea a year and a half before, clap threa's were present in the urine. Two weeks of irrigation with permanganate solution caused all evidences of infection to disappear. Three months later his bride developed ovaritis and salpingitis; gonococci were found in the removed adnexa.

Surgeon CORDEIRA, U. S. N., assigned to the cruiser *New Orleans*, made some remarks on the sanitary conditions aboard that vessel. He said that there had been but little sickness among the 400 officers and men of that vessel during the twelve-month port, during which she formed part of the blockading squadron of Santiago, and later cruised in the vicinity of San Juan (Porto Rico). While on this duty in the heat of summer they had been compelled to sleep on deck under the open sky, on account of the great heat stored up in the metal war machine with its dark paint. There had been no colds, no rheumatism, no infectious disease at this time, save a la grippe epidemic wholly of San Juan. This good health Dr. Cordeira attributed largely to the use of distilled water, mentioning in support of his view an observation at Guantano. The marines at this point, drinking distilled water from the *Marblehead*, enjoyed excellent health, while some Cubans encamped near by were much troubled with dysentery. Again, those on board the little vessels *Scorpion* and *Wasp*, which had no distilling plants of their own but were supplied with water from the *Marblehead*, enjoyed good health until one day, forced by want, they took on board water from Daiquiri. In a short time the *Scorpion* had thirty men sick with malarial fever; the same disease also developed aboard the *Wasp*.

Dr. T. S. DANBY asked whether there had been any mosquitoes in the neighborhood, and whether any disease, e. g., nephritis, had followed the prolonged use of distilled water.

Dr. CORDEIRA answered that no mosquitoes had been seen on the vessel while they were cruising off the Antilles; he had never observed any ill effect from the use of distilled water, which he himself had been drinking for fifteen years.

Philadelphia Pathological Society.

Meeting held June 22, 1899.

LYMPHATIC DIATHESIS.

Drs. BRYAN and WALSH reported a case with sudden death, the patient, a boy three weeks of age, who, when put to bed at night, manifested no signs of illness. On the following morning he was found dead. Autopsy showed the thymus gland markedly enlarged, covering the larger blood vessels of the neck and extending downward to the heart. There were two decided enlargements of the gland, one on either side connected in the middle portion by a smaller band. The weight of the gland was 28.33 grams. The tonsils were enlarged and lungs congested, as was also the left kidney. There were no signs of syphilis. Microscopically the thymus had the appearance of being normal with the exception that more lymph follicles were present. Enlarged follicles were also present in the spleen and intestines.

Hood called attention to the fact that sudden death occurred in cases in which the thymus was found to be enlarged. Jacobi, in 1888, also spoke of the subject. In one case it was thought that death had probably been due to compression of the trachea, but this idea has been partly overruled by another writer, who stated that in order for the thymus to cause compression it would necessarily have to be ten times larger than the normal gland. Another writer attributed sudden death in these cases to compression of the pneumogastric. More recently it has been held that death results from what may be known as the lymphatic diathesis, the exact cause of which we do not know. A section of the thymus was exhibited, stained by the Van Gieson method, which showed Hassel's corpuscles.

Dr. DAVID RIESMAN referred to the Berlin case in which sudden death had occurred after the administration of a dose of anitoxin. The autopsy had shown that the thymus was enlarged. He had last year performed autopsy on a case in which sudden death had occurred during anaesthesia. In this case the follicles of the intestines were enlarged. It was possible that some cases in which sudden death occurred during recovery from diphtheria and typhoid fever might be attributed to lymphatic diathesis.

Dr. GEORGE E. WOOD spoke of those cases in which Dr. Kocher had attributed sudden death from chloroform anaesthesia to the same cause.

Dr. ALBERT WOLDERT stated that some surgeons, in operating for goiter, have recommended that previous to removal of the gland the blood vessels be ligated in order to prevent profound depression or collapse held to be due to absorption of the glandular fluid, and as Dr. H. A. Hare had reported a case in which somewhat alarming symptoms followed a blow on the thyroid, these cases of sudden death in lymphatic diathesis might possibly be due to a form of rapid auto-intoxication.

ADDISON'S DISEASE.

Dr. W. E. HUGHES presented several specimens, the first being those found in a case of this disease. In this case discoloration of the skin first began on the face. A brief history of the case was as follows: A year previous to the time he presented himself for treatment the discoloration of the face began. Three months previously there had been severe pain in the right lumbar region, afterward located in the dorsal region, and still later a sharp pain was complained of in the left lumbar region, followed by vomiting. At one time temporary improvement occurred, but death finally ensued. At the autopsy the lungs were found in a state of fibroid phthisis, abdominal glands enlarged and cheesy, left kidney small, adrenals not much enlarged but thickened and cheesy masses were found throughout. In some cases of the cheesy masses, distinct ramifications of tissue were present, extending from the periphery inward.

IMPACTION BY GALL-STONE.

Dr. HUGHES also presented a specimen of common bile-duct, in which there had been impaction produced by a gall stone in which rather sudden death occurred. The common duct was almost closed by the stone; at one point slight dilatation was present, and below this the duct was again patulous. A specimen of retroperitoneal sarcoma was also exhibited by the speaker. In this case there had been no history of syphilis. Several months before entrance into the hospital the patient stated she had noticed that a lump had suddenly developed in the abdomen on the left side near the lower border of the ribs. Subsequently slight pain was complained of, but the presence of the lump seemed to be the greatest complaint. It was thought that the tumor was not attached to the kidney, from the fact that the hand could be slipped downward between the tumor and the lower border of the ribs, further than the

tumor was slightly movable and was covered by several loops of intestines, whereas in the case of tumor of the kidney only one loop of the bowel was usually present. He had seen three cases of retroperitoneal sarcoma.

The speaker also exhibited a carcinoma of the pancreas with compression of the common bile-duct. The gall bladder had contained a large amount of pus and several gall stones. The cystic duct was obliterated.

Dr. JOSEPH SAILER, in detailing the clinical symptoms, stated that the case had been one of considerable interest because it had been a question as to where the seat of obstruction lay, whether primarily in the common duct or in the pancreas. Hydrochloric acid had been present in the gastric contents. The patient had not vomited blood.

Dr. H. A. HARE spoke of a case of a young man in which after a blow on the abdomen, there rapidly developed multiple sarcomatous growths in various parts of the body. In another case after the removal of a small abdominal tumor it appeared that there had been general dissemination subsequently, as deaths soon followed from multiple sarcomatous growths.

HYDROCEPHALUS.

Dr. DAVID RIESMAN presented a specimen of hydrocephalus in a male of 17 years. The patient had during life suffered from several severe accidents to the head, and later suffered from dementia. At the autopsy the heart and lungs were considerably larger than normal, as also were the suprarenals. The weight of the brain was fifty-eight ounces. The ventricle of the corpus callosum was obliterated. The foramen of Monroe was patulous; the pia mater stripped off readily; the specific gravity of the fluid in the cranial cavity was 1.011 and contained no sugar. Regarding the essential pathology of hydrocephalus, one writer had looked on it as due to a form of serous meningitis, but this question has not been settled. Another writer found that in hydrocephalus the medulla of the suprarenals was as a rule affected, while the cortex might seem normal.

CYSTIC TUMOR OF TESTICLE.

Dr. RIESMAN also exhibited a specimen of cystic tumor of testicle, removed from an insane patient 51 years of age. The man had during life suffered from double scrotal hernia, on the left side being composed of a loop of intestine which was adherent to the sac. A polypoid tumor of small intestine was also exhibited by the speaker, which on examination proved to be a leiomyoma. The speaker also presented specimens of gall stones removed from an insane patient. He called attention to the large number—10 per cent.—of insane persons in whom these foreign bodies were present, and also that in cases in which the stone lay in the common duct the gall-bladder was usually contracted, doubtless due to an inflammatory process extending upward.

Cleveland Medical Society.

Meeting held April 9, 1899.

TYPHOID BACILLUS AS CAUSE OF POST-TYPHOIDAL SUPPURATION.

Dr. W. T. HOWARD, in a paper on this subject, called particular attention to the considerable number of cases of typhoid in which there are complicating suppurative processes, and that in nearly all of these the typhoid bacillus is the direct cause of the suppuration. The danger of the typhoid infection to the physician or nurse caring for these cases is very definite. There are now a number of carefully recorded cases of typhoid in which the bacillus occurs in the body without the characteristic lesions of the ileum and colon. The typhoid bacillus when it gains entrance to the intestine does not necessarily produce ulcers. Post-mortem it is always necessary to make cultures before it can be positively stated that the disease was not typhoid.

Dr. L. G. TOWNSLEE asked in what percentage of cases typhoid can be diagnosed by a bacteriologic examination of the urine. Dr. R. J. WENNER asked how long after an attack of typhoid the Widal reaction holds good.

Dr. H. S. UPSON pointed out the probability from recent progress of an entire regeneration of our nomenclature of disease. Formerly we named diseases by a symptom-complex; then we began to name them by their typical pathologic lesion, but now we are approaching a much better method of classifying them according to the germ which causes them.

Dr. HOWARD, in closing, said that Richardson found the typhoid bacillus in the urine in a considerable proportion of cases, and that in some cases the bacillus appeared in the urine early and in others late in the course of the disease. The Widal test being really a reaction of immunity, the blood serum of a person who has had typhoid will give it for a very long

time after the attack. Just how long we do not yet know. The only scientific way of classifying disease is according to etiology. He is in the habit of saying to students that diphtheria is any process in any part of the body caused by the diphtheria bacillus. In answer to a further question by Dr. Wenner he said that he did not consider the diazo reaction of much importance in typhoid, because it occurs in so many other diseases with which typhoid is likely to be confused.

CEREBROSPINAL MENINGITIS.

Dr. C. J. ALDRICH made some remarks on the epidemic of cerebrospinal meningitis now occurring in Cleveland, following at a later date full report of two necropsies of cases at the City Hospital. He spoke of the great value in the diagnosis of the disease of "Kernig's sign," which has not yet been properly estimated at its full value by the profession. It is very simple, consisting in inability for a child with meningitis to sit on a bed with the legs extended flatly, for owing to a contraction of the hamstring muscles they are bent at an angle of 20 degrees or more. Lumbar puncture is undoubtedly the most valuable method of diagnosis, but requires an extensive laboratory to make the necessary careful cultures.

Dr. W. G. STERN showed cultures from the cases of cerebrospinal meningitis at the City Hospital. The diplococcus intracellularis was found in the culture from serum obtained by lumbar puncture in one case. It was found that simply inoculating the culture medium with a drop or two of the suspected fluid was unsatisfactory. It was found to be much better to overlay the medium with 5 to 10 c.c. of the serum, when growth took place readily.

Dr. WENNER noted that the cerebrospinal fluid from a case of meningitis, if examined closely will always show some clouding.

Dr. HOWARD reported a recent case at Lakeside Hospital, in which the fluid drawn by lumbar puncture seemed clear but on putting it in the centrifugal machine a considerable amount of sediment was obtained from which cultures were readily made. This case had no eye symptoms, but had slight deafness and delirium which soon passed away leaving the case with practically no symptom but weakness, and becoming an apparently chronic case. In a necropsy done for Dr. H. W. Wickes of the Marine Hospital there was a large amount of thick yellow pus at the base of the brain. The optic and olfactory nerves were covered with thick pus. Pus was also found in the pia-arachnoid under the surface of the cerebellum. Cultures could not be made from this pus, probably because the organisms were in the cells. It was noticeable, however, that the total amount of pus was less than one would expect would cause death, leading to the conclusion that the toxins produced by the organism must be very virulent.

American Medical Temperance Association.

This association, composed of members of the AMERICAN MEDICAL ASSOCIATION, and having a membership of over one hundred and sixty active practicing physicians in the United States, held its annual meeting at Columbus, Ohio, June 8. The president, Dr. N. S. Davis of Chicago, delivered the annual address: "Is There any Causative or Etiologic Relation Between the Extensive Use of Alcoholic Drinks, and the Continued Increase of Epilepsy, Inebriety, and Insanity, Both Mental and Moral, in all Countries of Europe and America?" The secretary, Dr. Crothers, reported greater activity and inquiry during the past year. Twenty-six papers on alcohol and inebriety have been read during the past year in the different medical societies in the regular profession in this country. Nearly four hundred papers and notes on these topics have been indexed in the medical journals of America alone. The election of officers resulted as follows: president, N. S. Davis, Chicago; first vice president, H. A. Didama, Syracuse, N. Y.; second vice-president, Dudley S. Reynolds, Louisville; third vice-president, W. T. Bishop, Harrisburg, Pa.; secretary, T. D. Crothers, Hartford, Conn.; corresponding secretary, J. H. Kellogg, Battle Creek, Mich.; treasurer, G. W. Webster, Chicago.

Examining Eyes of Children.—Few children would escape if the eyes were examined in the primary grades. Besides the benefit of discovering and curing ocular troubles in the incipient stage, there is the additional benefit of warning parents of incurable affections which would forbid certain trades or professions, thus preventing useless expense and disastrous consequences. H. Cohn of Breslau has recently published a tabulated report of the eyes of every school child in Breslau (50,000). He considers it very important that the examinations be made in the open air.

THE

Journal of the American Medical Association

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance	\$5.00
Foreign Postage	2.00
Single Copies	10 Cents

In requesting change of address, give old as well as new location.

Subscriptions may begin at any time and be sent to

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

No. 61 Market Street, Chicago, Illinois.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, 100 Washington St., Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

Those new members of the Association should send their annual subscription direct to the Treasurer, Dr. Henry P. Newman.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the Editor, and all communications relative to the business of the JOURNAL, proof-sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 61 Market Street, Chicago.

Original communications are accepted with the understanding that they are exclusively contributed to this JOURNAL.

SATURDAY, JULY 1, 1899.

DISORDERS OF PERIPHERAL NERVES IN INFECTIOUS DISEASES.

Within the last few years a large number of cases have been reported in medical literature in which various symptoms indicating disordered activity of the peripheral nerves in the course of infectious diseases have been observed.

Some years ago Ross and Bury, in their well-known essay on "Peripheral Neuritis," pointed out that the great majority of cases of paralysis which have been recorded as following typhoid fever were not due to cerebral or spinal lesions, but to changes in the peripheral nerves, and the studies which have been made of the nerve alterations which take place in diphtheria have also shown that in a certain proportion of cases the degenerative change exists in the peripheral nerves rather than in the central nervous system.

In this connection, it is interesting to note that that most frequent infectious disease, pulmonary tuberculosis is also capable of producing results similar to those to which we have just referred, and literature in which cases of this character are recorded is not lacking. Pitres and Vaillard, two French writers, dealt with this subject as long ago as 1886 and in 1894 Carrière wrote on the subject in a Bordeaux thesis. More recently Carrière once more approaches this subject. He believes that disorders of the peripheral nerves in the course of pulmonary tuberculosis are very frequent, that they are more frequent in men than in women, that they by preference attack adults, are seen most commonly in the advanced stages of the disease and naturally occur in the chronic or subacute forms.

The manifestations produced by these lesions involve the functions of locomotion, sensibility, nutrition and vascular supply. In regard to disorders of locomotion or the secondary changes which take place in the muscles as the result of neuritis following tuberculosis, we find that the lesions may be limited or wide-spread; sometimes they involve the muscles in one limb or in part of one limb; at other times they are symmetric in both limbs and they usually develop slowly and insidiously.

In two cases which he has observed, the condition of atrophy of the muscles was like that which is seen in Aran-Duchenne paralysis. Unlike certain other forms of paralysis following neuritis with wasting and loss of power, when once developed it is usually fixed and does not have periods of temporary improvement. Certain masses of muscles seem to be particularly prone to this condition, as for example the pectoral muscles and the deltoids. On the other hand, in a certain proportion of cases the muscles of the lower extremities suffer more than those of the upper, and in certain instances, as is well known, tapping the muscles will produce a condition of undulating fibrillary contraction. In other instances, tremor is quite marked, it is usually of the small, rapid variety which disappears during the rest and may simulate that of disseminated sclerosis. For the same reasons the reflexes are usually disordered, sometimes being much enfeebled, at other times exaggerated, but it is a noteworthy fact that the pupillary reflexes are unaffected.

Neuralgia, as every physician knows who has treated this class of patients, is very frequent, occurring in not less than 75 per cent. of the cases and most frequently involves the intercostal and sciatic nerves. A more rare phenomena, which Carrière has observed in two cases, was false angina pectoris, in which the pains were severe and closely resembling those of true angina.

In regard to disorders of sensation, patients often complain of local sensations of heat and cold, particularly of the extremities, the hyperthesia over the muscles, particularly of the chest and neck, and a marked tenderness about the joints and over the surface of the tibia. In regard to trophic lesions, we find glossy skin, lesions of the nails, zona, and, as is well known, pulmonary osteoarthropathies. Of the serious local vasomotor disturbances we have localized urticaria, sweating, local asphyxia and itching of the skin. These various changes produced in the peripheral nerves by these infectious processes are undoubtedly due to the influence exercised by the toxins of the disease.

In the way of treatment, it is evident that one of the first necessities is to aid in the elimination of toxic material as much as possible, to insist that the patient should take a certain amount of rest and conserve his energies, that he shall have good, nutritious food, easily digested, and that the medicines which are employed should all of them be roborant in their character. While at first glance such drugs as antipyrin, quinin and other analgesic substances would seem to be indicated, as a

matter of fact these drugs, particularly the first, frequently seem to ultimately increase the difficulty by impairing the activity of the blood and Carriere thinks that local applications of oil of gaultheria, of menthol or guaiacol, chlorid of ethyl or of mentholated ether are much to be preferred as a means of remedying painful manifestations.

HEREDITARY TRANSFORMATION IN FICTION.

Some thirty years ago Moreau (de Tours) pointed out that an "incorrect conception of heredity looks for identical phenomena in each succeeding generation. Some have refused to admit that mental faculties were subject to heredity, because the mental character of the descendants were not precisely those of the progenitors. Each generation must copy the preceding. Father and son must present the spectacle of one being, having two births, and each time leading a different life, under the same condition. But it is not in the heredity of function or of organic or intellectual facts that the application of the law of heredity must be sought, but at the very fountain-head of the organism, in its inmost constitution. A family whose head is insane or epileptic does not of necessity consist of lunatics or epileptics, but the children may be idiotic, paralytic or scrofulous. What the father transmits to the children is not insanity, but a vicious constitution which will manifest itself under various forms in epilepsy, hysteria, scrofula, rickets, etc. This is what is to be understood by hereditary transmission."

The law thus laid down is simply an expression of the beneficent operation of atavism, whereby the type characters resist the acquired defects of the individual parent. The acquired defect taking the line of least resistance, according to the depth of degeneracy, the condition of the mother during pregnancy, and the condition of the father at the time of conception, manifests itself in a greater or lesser degree. Moreau indicated the lines along which such indications should be pursued when he divided the conditions due to degeneracy, in a family, into the following categories: 1, absence of conception; 2, retardation of conception; 3, imperfect conception; 4, incomplete products (monstrosities); 5, products whose mental, moral and physical constitution is imperfect; 6, products specially exposed to nervous disorders in the following order of frequency: epilepsy, imbecility or idiocy, deaf-mutism, insanity, cerebral paralysis and other cerebral disorders; 7, lymphatic products predisposed to tuberculosis and allied disorders; 8, products which die in infancy in a greater proportion than sound infants under the same condition; 9, products which, although they escape stress of infancy, are less adapted than others to resist disease and death.

The transformation of heredity is so often ignored even by the profession that it is hardly astonishing to find that the lay press entirely neglect it. In a recent review of "The Maternity of Harriett Wicken," by Mrs.

Dudency, the *Chicago Evening Post* remarks: "The author has neglected part of her opportunities. Harriett is the daughter of an ill-starred house, wherein, according to the dictum of Dr. Kiernan, there is degeneracy taking on many forms, all of them noxious. There is drunkenness, ne'er-do-well men and women, insanity, epilepsy, rickets and all the rest. Harriett chances to be skipped, in accordance with another law not well understood and is a fine specimen of the human animal. She marries a man with a robust longing for ratherness and her baby is witless. It has been clearly shown that genius, too, runs along these same lines of degeneration. It is no less true that such spirits as Mark Tapley's are quite as capable of transmission to descendants as the evil qualities which make up the burden of Mrs. Dudency's chapters.

"Into all lives, not only rain but sunshine falls; and it seems to be the author's misfortune here to have been unable to devise more than a moment's compensation to for all the woes of which her heroine is the unintentional conduit. Were the novel more forceful it would carry the tragedy better. It is well-planned and clearly written, but it lacks contrast which should have been given it in the failure of strength. Like all novels based on inheritance it takes a pessimistic view; and Mrs. Dudency cannot realize that there are pleasures in which she has had no share."

This criticism is in the main part just, but credits Dr. Kiernan with priority in views to which he makes no claim. It further displays the usual ignorance of the influence of the law of atavism in a normal direction. There is very little doubt but that atavism does dispose of much degenerate heredity, and would dispose of more were it not that the last is assisted by environment. The beneficent influence of atavism is shown in the ease with which the United States has assimilated the defectives poured into it for centuries. The criticism of the pessimistic tendency of heredity depicted in fiction is therefore just. Mrs. Dudency missed an excellent opportunity of teaching an optimistic lesson, by making the witless child a cretin and treating it with thyroid extract. This phase of the subject has hitherto been neglected in fiction. The beneficent effects of atavism were taught by Eugene Sue in "The Mysteries of Paris," in the case of the morally sound members of the Martial family. Of course, the classic fiction dealing with the transformation of heredity is the "Rougon-Marquart Series," of Zola. Here atavism is often beneficent in its effects.

STANDARDIZATION NEEDED.

The revision of the "United States Pharmacopeia," which is to be done next year is a matter of sufficient importance to receive the serious consideration of the profession. The physician is the one who has the greatest interest in the reliability and availability of the products of the pharmacist. They are part of the tools of his trade and on their efficiency his success to a

greater or less extent depends. It is a well-known fact that many of the crude drugs that form the basis of the pharmacopœial preparations are far from being as reliable as their proper medical usage demands. When such physiologically powerful drugs, for example, as colchicum, conium, hydrastis, hyoscyamus and others may vary in their content of active principle 200 to 300 per cent. in different samples, as has been amply demonstrated by competent authorities, it would seem that something ought to be done to eliminate these fluctuations of the crude drug from the official preparations. If the latter are not uniform in medical potency, what confidence can be placed in them or in the pharmacopœia, which certainly ought to be a reliable guide for accurate dosage and medication?

It is true, the last edition of the pharmacopœia did provide standards for cinchona, opium and nuxvomica and the recently published "British Pharmacopœia" goes a step further and "standardizes" ipecac and belladonna, but the principle has not yet been made to cover calabar, coca, colchicum, conium, gelsemium, hydrastis, podophyllum, stramonium or veratrum, to say nothing of important drugs such as aconite, cannabis indica, digitalis, ergot and strophanthus, which defy any and every chemical test thus far elaborated, and which, to be assayed at all, must be tested pharmacologically on the living animal.

It is, perhaps, demanding too much to ask the revisers of the Pharmacopœia who are soon to enter on their decennial task, to provide standards for all powerful drugs, but it seems to be well within the bounds of the reasonable and moderate to urge the expediency of extending the principle of chemical standardization to all drugs susceptible of accurate chemical assay and also of adjustment, by chemical means, to uniform standards based on a fixed percentage of active principle or principles in the finished preparation. Surely, the physician has enough to perplex and baffle him in the idiosyncrasies of individual patients, and in the irremediable difficulties of diagnosis—may he not justly demand protection from the disaster which follows in the train of a weak, inert, unreliable drug product, or of a preparation possessing an unusual and dangerous potency? The golden mean between the worthless and the toxic ought to characterize every fluid extract, solid extract or tincture administered in the treatment of disease.

The very general use of diphtheria antitoxin and the growing employment of an antitetanic serum for prophylactic purposes have acquainted the profession with the fact that the curative serums can be tested and standardized only by the physiologic method—by observing how much of the serum will preserve from sickness a test-animal into which is injected simultaneously ten times the fatal dose of the respective toxin. This is indeed a tedious, laborious, expensive and not absolutely uniform means of pronouncing on the exact strength of a given serum, but it is the only means available; there is no other, as no chemist pretends that he can test a

parcel of antitoxin with his reagents. Every word of this applies with almost equal force to the testing of a limited number of powerful and important drugs like ergot, digitalis, squill, convallaria majalis, cannabis indica and strophanthus. The chemical test for these drugs and their pharmacœutic preparations is very unreliable, and unless they are tested by the pharmacologist, on the living animal, their administration is a lottery affording no guarantee of prompt reaction or final cure. This fact is notoriously the cause of that unfortunate desuetude into which ergot and cannabis indica have largely fallen. Lacking uniformity of action and failing often to yield the expected results, the pharmacœutic preparations of the markets are discarded wholly by the disappointed practitioner. Professor Hare, in his "Therapeutics," ascribes the frequent failure of cannabis indica to the inferiority of the preparations encountered, and the worthlessness of much of the ergot on the market is beyond dispute. Witness also the report of Houghton¹, who pharmacologically tested six samples "supposed to be pure strophanthin;" one sample was *ninety* times as strong as another, and the remaining four varied between these limits of one and ninety.

If drug preparations can be made uniform in strength by the comparatively simple and inexpensive means of chemical assay, well and good, otherwise the physician has a right to ask the wealthy and prosperous manufacturer to apply the physiologic test to preparations whose activity can be gauged in no other manner.

HARMONY.

If there was one characteristic of the recent meeting of the AMERICAN MEDICAL ASSOCIATION more prominent than another, it was that of harmony and good feeling. As a consequence this occasion was one of profit to those present as well as to those absent. In this there was shown the great value of organization. All of the parts representing a great, living, active, working body were there engaged in the legitimate functions of the work to which each was individually assigned. Friction and discord were not only not observable, but were not present. All this shows that the physicians are getting together, and in doing so, constitute not only a grand, but a great army.

Scientific demonstrations either prove or disapprove theories, and are fatal to dogmas; and as dogmas melt and pass into mist, there comes a harmonious adjustment of forces. The unification and unanimous expression of a great body of scientific men has an educational as well as a psychic influence on the people, which in turn is reflected in its power on the national or state government.

A few physicians of Philadelphia got together and formulated a series of suggestions looking to improvement in the medical service of the army. Alone, they were a feeble force, but with a unanimous endorsement of their plans by the AMERICAN MEDICAL ASSOCIATION, they be

¹ Journal, Oct. 22, 1888

came great and potent and their suggestions will receive consideration.

The hypocritical members of the profession who have held aloof from the organization, ominously uttering doubts as to the highly scientific character of the work done by it, are gradually coming into the ASSOCIATION. There are still many who do not feel like associating themselves with the national body, but their reasons for this become less defined each year, and ere long, it is to be hoped by all, they will forget the antagonisms of years gone by. Every one has a profound respect for certain societies which have refrained from sending delegates to the ASSOCIATION. Those organizations, segregated as they are, exert a limited influence, but if they should become a component part of the great national organization, their influence would at once become more powerful and far-reaching.

The harmony of the Columbus meeting with its well-organized scientific demonstrations and discussions will have an influence in drawing together the factors which have so long been separated from the organization with which they have a natural identification. In the harmony of the late meeting will be found the magnet that will, it is hoped, draw together and unify the entire profession. Such a unification means a wonderful power for good; a power that will present to Congress and to the President suggestions which will not go unheeded; a power that will be recognized when it goes to the state legislatures in the interests of state medicine, and protection from mountebanks and charlatans. Harmony and united action are unseen but powerful agents for good and should be cultivated so that greater benefits may yet flow to the profession as well as to the people.

DEGENERATION.

We are afraid that the *British Medical Journal* is allowing "commercialism" to get the better of its professional rectitude. It does not seem to be satisfied with the income resulting from having two advertising pages to one reading page—68 reading to 128 advertising—but it has now begun to place advertising inserts among its reading matter. These are filled with advertisements of water as well as whisky, surgical instruments and proprietary medicines. We feel shocked at the evident decadence of the ethical and professional morals of our quondam dignified and correct contemporary. The staid organ of the British Medical Association sacrificing its dignity thus, just for a few "bob" is certainly a state of affairs not pleasant to contemplate. When this great weekly, which is supposed to represent, and be the quintessence of, journalistic purity, sets such an example, what may be expected from others?

A MATTER OF PRIORITY.

In the *Neurologische Centralblatt* of June 1, Professor Mingazzini of Rome makes a claim for a compatriot of his, the late Dr. Galassi, of the original discovery of the pulmonary phenomena described by Dr. Gifford in 1895 and rediscovered by Westphal this year. It appears

Dr. Galassi's observations were verbally reported to the Lancisi Society in Rome in 1887, and mentioned in its "Bulletin" in 1887 and 1888. It would seem from this that the "question of priority" editorially noticed in our issue of April 15, should, as far as the clinical observations and medical publication of the fact in society proceedings go, be settled in favor of the Italian observer. It happens, however, that the actual originality of the observation does not even rest here, for very soon after the appearance of Westphal's article Piltz' called attention to the fact that it had been noted by Wundt in his "Grundzuge der Physiologische Psychologie," published in 1880. Verily, as the wisest of men says, "there is nothing new under the sun."

THE TUBERCULOUS OSCULATION.

By following the rule of going away from home to get the news, we learn from one of our English contemporaries that "it has been found necessary in some parts of the United States to direct the attention of the legislatures to the desirability of prohibiting indiscriminate kissing, not, it would appear, in the interests of public morality or in deference to the susceptibility of the American Mrs. Grundy, but with a view of checking the spread of tuberculosis." The journal goes on to say that either the tubercle bacillus must possess unaccustomed virulence in the Western hemisphere or else kissing must be unduly and indeed unnecessarily prolonged. We have read somewhere a saying, apparently English in origin, that a thorough and complete kiss must last seven minutes by Shrewsbury clock, but have not heard of this being put in practice in this country. It is certain, however, as our English contemporary remarks, it will be one thing to prohibit indiscriminate kissing and another to enforce the veto, and we certainly agree with it that it is a lack of good taste to couple kissing and spitting together as nuisances, as it credits the American tuberclephobists with doing. It is to be feared, however, that it has been imposed on in this instance. If kissing has to be sacrificed for the sake of getting rid of tuberculosis, we opine that the latter will stay.

FOOD VALUE OF ALCOHOL.

The recent statements of the public press concerning the findings of Professor Atwater, the Government food expert, regarding the nutritive value of alcohol, are worthy of a passing notice. While some authorities have disputed it, the consensus of scientific opinion has always been that a certain amount of alcohol could be consumed in the body. Professor Atwater's findings are different from those of others only in that he finds a little larger quantity can be disposed of than some other hygienic authorities. He does not say that it is a healthful food or that it can be safely taken in a quantity sufficient to have any large effect in keeping the vital mechanism going. While it may be to some extent a producer of energy, its action even in small quantities, on special portions of the organism, may be deleterious. The experiments of Aschaffenburg in Kræpelin's clinic are in point as to this effect. He found that even a very moderate dose of alcohol—20 to 30 grams—had a distinctly bad effect on skilled workmen, type-setters, im-

¹ *Neurologische Cbl.*, No. 6, March 15.

pairing their capacity to work to a very considerable extent. Then we have the question of idiosyncrasy to meet. It is well known that small quantities of alcohol are very ill borne by some individuals and we cannot estimate even the food quality of alcohol in the average man by experiments on one or two. After all the question of the food value of alcohol is of infinitesimal importance. It matters very little whether two ounces of alcohol can be disposed of in the system or not when it is estimated that as a food they are not more than the equivalent to two ounces of milk or broth. The temperance reformers have overshot the mark in dwelling on this point. Alcohol is not taken as a food; it is taken for its action on the nervous system, which is altogether a different thing.

DOCTORATES IN LAW FROM A MEDICAL COLLEGE.

The *Medical Press and Circular* criticizes the action of the Jefferson Medical College for having conferred the non-medical degree of Doctor of Laws. It speaks, however, "with bated breath" in view of similar practices of English Universities which are in the habit of giving the degree of Doctor of Civil Law in a country where the civil law has never been in vogue, to individuals who cannot by any strain of the imagination be presumed to know anything about it. Its criticism is, however, well founded except perhaps in that it ignores the accepted fiction which long custom has consecrated. It would be no harm, nevertheless, if our institutions that have as their legitimate function the giving out of doctorates that mean something would cease the practice of bestowing those that mean nothing but an empty compliment. A degree in law from a medical college is not worth much and is unfair as not in accordance with true reciprocity. A degree in medicine from a law college in Philadelphia would, to use a common expression, certainly cause a "kick."

HUMAN TUBERCULOSIS AND HOUSEHOLD PETS.

The claim has frequently been made that children often become infected with certain diseases which are brought to them from other children by pet animals, such as cats and dogs, or indeed, that these animals may themselves be suffering from maladies which are capable of transmission to the human being, but while many physicians believe in the truth of these assertions, definite evidence has not yet been largely accumulated. It is also a known fact that some pet animals and birds are susceptible to tuberculosis, and while in the case of birds the bacillus is somewhat different from that which occurs in the human body, it has been supposed that this difference is simply produced by its surroundings, and that it is capable under certain circumstances of affecting human beings. Our attention has been called to this matter by an article by Tucker Wise, in which he brings forward certain evidence to prove that canary birds in particular are capable of spreading tubercular infection. He believes from his experience and literary research that tuberculosis among caged birds is an exceedingly common disease, and he points out how the fluttering of the wings of the bird distributes infected dust in the air of the room and thereby spreads tubercular infection. Altogether he has collected thirty cases of tu-

berculosis, which, in his opinion, were closely connected with infection from such pets, and he goes on to point out that in the distribution of the dust in the manner described, it may not only be inhaled from the dust of the room, but also infect various articles of food which are frequently put on tables in the neighborhood of bird cages. He also points out that it is estimated that nearly 400,000 canaries are sold every year in Great Britain, and therefore that this question of bird tuberculosis and human tuberculosis may possess a greater degree of interest than has been thought.

DIAGNOSIS OF TRICHINOSIS.

Atkinson has added another to the cases made famous by the reports of Osler, Cabot and Brown; the great increase in the proportion of eosinophilic cells in cases known to be actively infected with the trichinae. Normally these cells show a wide variation within their normal limits, from one-third of 1 per cent. to 3 per cent., yet even at the greatest they occur less frequently than any other form of white cell. In the cases of these observers the differential count has demonstrated over 50 per cent. of the leucocytes to be of the eosinophilic variety during the stage of active infection. Nor is it possible to mistake this cell for any other when the specimen, fixed by heat or in equal parts of alcohol and ether, is stained even most carelessly with the eosin and methyl blue of the Erlich triple stain, preferably the former. The intense pink with which the large spherical granules take the eosin stain, the polymorphous nucleus, the pallor of the latter even when long stained, its loose connection with the granules, all tend to make it distinctive. While this large increase may be looked on almost as pathognomonic, eosinophilia of moderate grade may occur in a vast number of other affections; in diseases of bone the writer has seen 5 per cent. of eosinophiles in sarcomatosis of the bone; in diseases of the skin, Cabot has reported a case of dermatitis herpetiformis in which the differential count of 500 leucocytes showed 19 per cent. of eosinophilia—in diseases of the spleen, of the organs of generation, of the sympathetic system, and in cases of the so-called uric acid diathesis. But there are other symptoms to be taken into consideration than this eosinophilia in making the diagnosis of trichinosis. The onset is as a rule sudden, with a chill, rigor, rapid rise of temperature, followed by profuse sweating. Intense itching pains in the limbs follow and the patients can hardly move without suffering the most intense agony. These pains are not of the aching variety common to typhoid fever, smallpox and influenza, but more of the rheumatic type. They are due to the myositis set up by the growth of the trichinae. The history of a case one might easily mistake for typhoid, but there are no rose spots, no enlargement of the spleen, no abdominal tenderness, pain, or tympanites; while, on the other hand, the Widal reaction is absent, and there is always a marked leucocytosis. One of the common symptoms to which little attention has been paid is edema of the eyelids without swelling of the feet and without albuminuria and the presence of urinary casts. A careful history will often elicit information of the patients having eaten raw meat. The case of Atkinson was remarkable in this respect; the man was a cook in a restaur-

rant, with the greatest love for raw meats of all kinds, fish, sausage, and would eat it by handfuls. This latter case pursued a rather uneventful course and was discharged in a little over a month, in good condition. During his stay in the hospital, portions of muscle were excised and the diagnosis conclusively proven by finding the trichinae among the muscular fibers. This case also illustrates the value of routine examination of blood films in hospital practice. Possibly had this not been done the diagnosis would not have been made. It may not have made any difference as far as the actual progress and recovery of the patient was concerned, still it is a part of every scientific and progressive physician to leave no stone unturned that might aid him in establishing his diagnosis.

DE MINIMIS CURAT LEX.

An unpleasant consequence of certain peculiarities of the English law regulating medical titles and the practice of medicine is seen in the celebrated Hunter case which has been the subject of much editorial writing by our British contemporaries. Dr. Hunter, for we can properly so call him, was a graduate of Jefferson Medical College, as well as a licentiate of the Society of Apothecaries and a regularly registered practitioner according to British law. A brother practitioner in his locality brought a complaint against him before the Medical Council, to the effect that he was falsely calling himself "doctor" and "physician." He was ordered prosecuted and this is reported to have given him so much mental anxiety and trouble that it affected his health and finally caused his death. Now the Medical Council is trying to escape the responsibility of its acts, claiming that it conducted the case in a friendly manner, that Dr. Hunter had expressed his willingness to defend himself and have the matter cleared up. It also claims that it was not cognizant of the exact circumstances under which the prosecution was carried on and that this also relieves it of responsibility. The facts are that Dr. Hunter's name was presented for prosecution with other cases, apparently without any distinction being made that it was any different from that of any other, notwithstanding the fact that he was regularly qualified. He had agreed to drop the title of "doctor" and asked what course he should pursue, and had been answered that no information could be given. The charge against him for the use of the term "M.D." having failed, he was prosecuted for calling himself "physician and surgeon," and was convicted in the lower court. After his death the conviction was quashed by the higher court, but in such a way as to leave the right of an L. S. A. to call himself a physician or surgeon still in question, and the Society of Apothecaries, it is said, still intends to test its legal rights. The whole matter leaves an unpleasant taste in the mouth: the "friendly" prosecution, the plea of irresponsibility, and the fuss made over names that admittedly mean nothing as indicating actual qualifications. It is not our affair though the coupling for prosecution of the use of a degree from one of our oldest and best medical colleges with really disreputable offenses against the medical law is not complimentary. It would seem better if the highest medical authority of a great country would drop hag-

gling about trifles and allowing itself to be the instrument of persecution by jealous professional rivals.

PROGNOSIS IN VALVULAR HEART DISEASE.

In some clinics of the larger hospitals it is a matter of almost daily occurrence to have patients present themselves with a history of failing health, slight exhaustion, sometimes dimness of vision, dizziness, and above all a painful spot in the region of the left nipple. In many cases, if not in the majority, there may not be leading symptoms which would lead one to believe that the patient was suffering from valvular disease of the heart. If one symptom is present in the early stage which predominates over the others, it would seem to be the pain in the region of the left nipple. In some cases this pain may be of a dull or dragging character, but as a rule it is rather sharp and more or less persistent without reference to the time of eating. In such patients the heart should at once be examined. We often meet with such cases in the dispensaries. The patient presents himself, thinking his ailment is of a trivial character, but on being requested to have an examination made, his attention is at once drawn to the heart by the physician's manipulations, and one of the first questions asked is, "Doctor, have I heart disease?" Heart disease to most patients means an incurable disease, and one in which the imagination is at its highest tension from fear of sudden and early death. It is not always easy to make reply to this direct question, and in many cases, if not the most of them, it is best not to do so. There are few patients who, when told that a valvular lesion exists, bear it well. In this condition it is really not diagnosis that the patient is thinking about, but prognosis. The words "heart disease," "early" and "sudden death," are constantly being turned over in his mind. In the clinics, where the patients are generally strangers, it is best not to tell the patient that he has heart disease. In nearly all cases it does harm. The most of them are laboring under a feeling of despondency from being out of work, family cares, or indigestion, and why should we add to their discomfort? In such cases it seems best to ask them to return again, and then again, after which time a better opportunity will have been gained of the person's characteristics. Further, the physician will be more competent to pass judgment on a case at the third examination than at the first one. He may see cause to change the original diagnosis. If he should tell the patient that the diagnosis had been changed it would cause a doubt to exist, and moreover a loss of confidence. The physician may and should be ready to acknowledge his mistake, but not always to the patient. That is another reason why a hasty diagnosis does mischief. It requires an expert of a high degree to differentiate the different varieties of heart murmurs at the first examination. If we should hear a murmur at the apex or at the base of the heart, that does not always mean that heart disease is present. A murmur situated in either region has been known to pass away. One celebrated writer states that: "With an apex-beat in the normal situation and regular in rhythm, the auscultatory phenomena may be practically disregarded." The prognosis, speaking generally, does not depend on the heart

murmur, but on the condition of the heart muscle. A heart murmur, co-existing with a regular pulse, of good quality, normal size, normal position, and normal apex-beat, is of little consequence when compared with that when those signs are absent. But how can we determine the condition of the heart muscle? This is not always an easy matter to decide. Neither the precordial pain, the size of the organ, nor the position will determine this point. We have three very important signs which are of some value: absence of apex-beat, dyspnea and weak pulse. Absence of apex-beat in valvular heart disease probably has not up to this time received the attention which its significance deserves. Muscular tone of the heart is necessarily associated with a strong contraction, and a strong contraction of the heart furnishes a pulse of good quality. Aside from the condition of the heart muscle itself certain other factors determine the prognosis in valvular heart disease, and must be taken into consideration, such as age, sex, occupation, climate, as well as the valve affected.

Medical News.

DR. HARRY FRIEDENWALL, Baltimore, has returned from a four months' tour of European hospitals.

THIS year the Metropolitan Hospital Sunday Fund, London, received a check for £10,000, about \$50,000, from Mr. George Herring.

THE PROFESSOR of chemistry, Dr. Istrate of Bukharest, has been appointed a member of the Roumania Cabinet, as Minister of Public Works.

SIR WILLIAM MACCORMAC of London has been elected an honorary president of the Thirteenth International Congress of Medicine to be held in Paris August 2-9, 1900.

THE FAITH HEALER, under whose treatment Dora Kraray, a child of Brooklyn, suffered from gangrene of the foot, making amputation necessary, has been sentenced to five year's imprisonment.

DR. J. B. ALEXANDER of Hiawatha, Kan., has been elected president of the Kansas State Board of Health and Dr. W. B. Swan of Topeka, secretary.

BY THE will of Charlotte Bostwick, Philadelphia, a contingent bequest of \$15,000 has been made the Germantown (Pa.) Dispensary and Hospital, to be added to the endowment fund of that institution.

DR. MARTIN MENDELSSOHN of Berlin was made "professor" on the occasion of the opening of the Sick Nursing Exhibition at Berlin, which he had arranged with special reference to the Tuberculosis Congress.

DR. J. ACKERMAN COLES of Scotch Plains, N. J., has presented to Brown University a life-size portrait bust of Benjamin Franklin, a replica of the one made in Paris, in 1778, while Franklin was minister at the Court of France.

A CONVALESCENTS' home for soldiers returned from the colonies has recently been opened at Sevres, near Paris, in the chateau occupied by Mme. de Pompadour, under the auspices of the association for the assistance of "militaires coloniaux."

DR. JUR. M. MORIANTA, Counsellor and Minister de l'Interieur at Tokio, Japan, has been detailed by the Mikado to study the question of sanitation in the United

States and is now in Philadelphia examining the method in vogue by that city's Board of Health relative to keeping the sanitary record and health statistics.

ABOUT three hundred and eighty candidates for license to practice medicine just appeared before the State Board of Medical Examiners in Philadelphia. Of this number about three hundred and twenty-five are regulars. About one hundred will be examined in Pittsburgh.

THE PARIS *Gazette Medicale* states that several physicians of Cologne and the Rhine countries have been arrested for selling pills to young men, which produced symptoms simulating heart disease, and thus secured their exemption from military service. The death of one who had taken too many pills led to the discovery of the trick.

THE FRENCH naval medical officer, Dr. Emily, who accompanied the Marchand scientific mission which made its way this year from the Congo to the Red Sea, has been dined and wined by the profession in France on his recent return. This is his third expedition to Darkest Africa although he is not yet quite 34 years of age. His works on natural history have attracted much attention.

AMONG THE paintings at the Paris Salon this year two medical subjects have attracted considerable attention. One, "A Consultation at the Hospital Paschal," represents Dr. Brocq examining the back of a young woman who stands picturesquely draped before him, with a number of internes in their gowns and several visiting physicians, all portraits. No lesson is perceptible. "The Accident" shows the physician summoned to the circus rider on a couch in the flies, with the clowns and musicians crowding around her and keeping back the gaping public. Still another "Accident" is a scene of a workman being carried past on a litter, the passers-by removing their hats, except one stylishly dressed man who is accosted by one of the workman, his words the title of the painting: "Flats off! Salute Labor's Wounded!" The physician is seen mounting the hospital steps in the distance.

SMALLPOX diagnosed as chickenpox at Valparaiso, Ind., has exposed that community for the past three months. The disease was conveyed from Mississippi by a student of the Northern Indiana Normal School, who was taken ill on his arrival in March. On account of the mildness of the attack and the prevalence of chickenpox the case was thought to be of the latter disease and after three days the student was allowed to attend his classes. It was observed that the subsequent cases developed in those who had not been vaccinated. Drs. Herman Spalding, chief medical inspector of the Chicago Health Department and A. W. Brayton of the Indiana State Board of Health, being ordered to make an inspection, at once pronounced the cases smallpox. There have been thirteen cases up to the present time, as nearly as can be ascertained. The vaccination of the community, the fumigation of infected houses and the prompt isolation of suspicious cases was immediately ordered. With these rules effectively enforced the authorities do not entertain fears of a general epidemic on the return of cold weather.

THE STEAMER *Nippon Maru*, from Hongkong via Yokohama and Honolulu, arrived at San Francisco June 27, having been detained at Honolulu several days in quarantine on account of two deaths which occurred on the voyage, from bubonic plague. One of these deaths occurred three days before reaching Honolulu, in the case of a Chinese steerage passenger. The ship's

doctor at first made a diagnosis of uremic poisoning, but being suspicious preserved the body for bacteriologic examination, which resulted in the discovery of the bacillus of the bubonic disease. The body was, therefore, cremated, and the vessel ordered into quarantine at Honolulu as above. The steamer arrived at San Francisco with the yellow flag flying and was at once ordered to the quarantine station, all the passengers being landed on Angel Island and neither doctors nor custom officers being allowed on board. Certain important papers were fumigated and sent on shore, but the *Maru* will be kept in quarantine for several weeks. She carried fifty-five cabin passengers, of which six are Europeans, while there are 138 Japanese and Chinese steerage passengers.

HEALTH REPORTS IN SOUTH AMERICA.—The reports of the National Institute of Hygiene in Chile, of the boards of health in Mexico, Brazil, etc., are accumulating a mine of information for future statisticians with their comprehensive, detailed, tabulated reports of hygienic, demographic and meteorologic conditions. When the countries undertook this work they had no established routine to overcome and could adopt from the start the latest and most approved methods in vogue, with the result that their stately volumes are models in every respect, and in their monthly bulletins they produce in popular form the prophylactic and other measures recommended by the highest authorities of all countries, devoting especial attention to tuberculosis, yellow fever, infant hygiene and the sanitation of cities.

Therapeutics.

SIMPLE SUMMER DIARRHÆA.

Food of all kinds should be stopped for twelve to twenty-four hours, and no milk given for several days. The intestinal canal should be cleared of all undigested food by full doses of castor-oil or syrup of rhubarb, preferably the former. Should there be excessive peristalsis attended with pain, camphorated tincture of opium may be given, in doses of 5 to 10 minims (.3-6 c.c.) to a child 1 year of age, which may be followed by some simple sedative intestinal antiseptic, such as bismuth subnitrate.

The following prescriptions are recommended:

R. Bismuthi subgallici	ʒi (3.88 gm.)
Sodii bicarbonatis	gr. v. (.3 gm.)
Crete preparate	ʒss. (1.94 gm.)
Creosoti	gtt. v. (.3 c.c.)
Syrupi cinnamoni	ʒiss. (1.84 c.c.)
Aque distillate q. s. ad	ʒiv (118.2 c.c.)

M. Sig.: Teaspoonful after each movement. *Griffin.*

R. Iodoformi	gr. iiii. (.19 gm.)
Naphtalini	gr. xv (.97 gm.)
Pulverie sacchari	ʒiiss (9.7 gm.)
Olii bergamii	gtt. ii (.12 c.c.)

M. ft. chart. No. xx.
Sig.: One in milk every hour in severe forms. *Comby.*

R. Zioci sulphocarbolicæ	gr. v (.32 gm.)
Benzoe	gr. viii (.51 gm.)
Bismuthi subnitratæ	ʒss (1.94 gm.)
Hydragryi chloridi mitis	gr. ss (.03 gm.)

M. ft. chart. x.
Sig.: One powder every one or two hours. For a child 2 or 3 years of age.

DIARRHÆA INCIDENT ON TEETHING.

R. Acidi sulphurici diluti	m. viii (.51 gm.)
Tincture opii camphorate	ʒi (3.7 c.c.)
Spiritus vini gallici	
Syrupi zingiberis	ʒi (11 c.c.)
Aque mentha piperatæ q. s. ad	ʒi (59. c.c.)

M. Sig.: Teaspoonful every three hours if necessary.

Geo. F. Butler, M.D.

FETID DIARRHÆA OF INITIAL STAGE OF SCARLATINA.

Filatov recommends the following:

R. Magnesi sulphatis	ʒi (3.88 gm.)
Acidi sulphurici	ʒi (3.7 c.c.)
Aque distillate	ʒvi (177.4 c.c.)
Syrupi	ʒi (30. c.c.)

M. Sig. A teaspoonful or tablespoonful, according to the child's age, from hour to hour.

This draught is markedly anodyne, and is well taken by little children.

ACUTE GASTRO-ENTERIC INFECTIONS.

Groech prescribes the following for patients suffering from acute infectious gastro-enteritis accompanied by vomiting, purulent dejecta, pains in the head, limbs, etc.:

R. Tincture iodi	m xv (.02 c.c.)
Syrupi simplicis	ʒv (18.5 c.c.)
Aque distillate, ad	ʒv (148.0 c.c.)

M. Sig. One tablespoonful every one or two hours, or three times daily, according to the gravity of the disease.

GASTRO INTESTINAL INTOXICATION OF INFANTS.

According to the *N. Y. Med. Jour.*, Perrier recommends in light forms unaccompanied by general phenomena such as vomiting, diarrhea, tumid abdomen, stationary or diminished weight, the suspension of milk, substituting for it boiled water, or slightly alkaline water, rice water, barley water, etc. The following prescription should be given:

R. Benzonaphthol	gr. iiii-ix (0.28-0.58 gm.)
Bismuthi salicylatæ	gr. ix-xv (0.58-0.97 gm.)
Syrupi aurantii flor.	ʒi (30 c.c.)
Mucilag. acacie	ʒxxx (84.34 c.c.)

M. Sig. One tablespoonful every two hours.

If the dejecta are fetid, infrequent, and if there is tympanitis give:

R. Hydragryi chloridi mitis	gr. ʒi-iss (.04-.09 gm.)
Sacchari lactis	gr. ss (.03 gm.)

In those forms in which to the before-mentioned symptoms are added fever, fetid breath, foul tongue, thirst and a loss of weight, milk should always be suspended, water alone being given. Gastric and intestinal lavage with boiled water, or a 0.7 per cent. saline fluid should be practiced; warm moist compresses should be applied to the abdomen, and if there is hypothermia, hot baths should be given, while tepid or cool baths should be used with hypothermia. About one fluid ounce (30 c.c.) of artificial serum should also be injected every three or four hours.

ACUTE DYSENTERY.

This disease has been treated with enemas containing sulphate of copper, under the directions of Sandwith, quite successfully. He directs that the patient should remain in bed with flannel over the abdomen, and be on a diet of boiled milk, rice water and seltzer, plus a little whisky. A dose of bismuth salicylate, 15 grains (.97 gm.), is given every four hours. The intestine is washed out daily with a quart of boric acid and starch solution, and for a few days, daily rectal injections are given with the following mixture:

R. Cupri sulphatis	gr. xv (.97 gm.)
Tincture opii	m. xv (.92 c.c.)
Amyli	ʒi (31 gm.)
Aque	ʒviii-Olii (236.5-946.3 c.c.)

Sig.: For one rectal injection. A cocain suppository may be inserted afterward if indicated.

The following prescriptions have been recommended:

R. Extracti ergotæ fluidi	ʒiiss (75 c.c.)
Tincture opii deodoratæ	ʒss (15 c.c.)

M. Sig.: Teaspoonful three times daily; or

R. Ergotinae (or aq. ex.)	gr. xx (1.29 gm.)
Extracti nucis vomicæ	gr. v (.32 gm.)
Extracti opii	gr. v (.32 gm.)

M. ft. pil. No. xx.

R. Sig.: One every four or six hours. *Bartholow.*

R. Magnesi sulphatis	gr. xl (2.50 gm.)
Tincture opii deodoratæ	gtt. v (.3 c.c.)
Syrupi limonie	ʒss (1.8 c.c.)
Aque q. s. ad	ʒii (7.39 c.c.)

M. Sig.: For one dose. Give every hour until stools change in character to feculence; then every two hours.

Bose and Bedel recommend in grave cases large intravenous injections of a 7 to 1000 saline solution. They should be administered at a comparatively early stage of the disease, and should be repeated. Each time a quantity of liquid varying from 34 (1000 c.c.) to 70 fluid ounces (1800 c.c.) is to be employed, 2 (59.14 c.c.) to 4 fluid ounces (118.29 c.c.) being injected per minute.

H. C. Wood says: "In acute dysentery involving the colon high up, I have found large enemata, containing two or three drachms of substrate of bismuth, much more efficient than the exhibition of bismuth by the mouth."

Brayton Ball advises "hot enemata of tannin and boric acid. When the stools have become diarrheal in character bismuth in large doses. Large enemata of warm or ice-cold water under low hydrostatic pressure."

Teestevin has successfully used the following:

R. Croosoti (beechwood) gr. xv (.97 gm.)
Tincture opii gtt. x. (.6 c.c.)
Lactæ (bullentia) ʒv. (18.5 cc)
Aque (bullentia) ʒiiss (192.4 c.c.)

M. Sig. Inject while hot, into the colon, after irrigating the rectum with a solution of boric acid and salicylic acid. (Thiersch's.)

"Irrigations with silver nitrate, from 20 to 30 grains (1.32 gm.) to the pint (500 c.c.) are especially useful," says W. W. Johnston," when the presence of pus in the discharges shows the persistence of unhealed ulcers. If these ulcers are in the rectum (and an examination ought always to be made to see if this is the case), they may be touched through a speculum with a strong solution of silver nitrate or with carbolic acid."

CHOLERA MORBUS.

Mistura anticholeraica—"Sun Mixture":

R Tincturæ opii.
Tincturæ capici.
Tincturæ rhei.
Spiritus camphoræ.
Spiritus menthæ piperitæ āā ʒiv (15 c.c.)

M. Sig.: Dose twenty to sixty minims (1.2 to 3.7 c.c.)

Thompson's modification of "Hope's Camphor Mixture.

R Acidi nitrici diluti ʒii (7.39 c.c.)
Spiritus camphoræ
Tincture opii āā ʒi (3.7 c.c.)
Syrupi zingiberis ʒiv (15 c.c.)
Aque menthæ piperitæ ad ʒvi (177 c.c.)

M. Sig. Teaspoonful as a dose.

F. A. Packard recommends the following prescription in cholera morbus to restore the mucous membrane to a normal condition:

R Hydragryri chloridi mitis gr. ʒi₁₂ (.005 gm.)
Pulveris aromatici gr. ii (.12 gm.)
Extracti pancreatici gr. v (.32 gm.)
Bismuthi subnitratæ gr. x (.64 gm.)

M. ft. cht. No. 1. Sig.: Take every three hours.

TO ALLAY VOMITING IN CHOLERA MORBUS.

R Creosoti
Acidi hydrocyanici dilutii āā m ii (1.2 c.c.)
Mucilag acaciæ ʒss (1.84 c.c.)
Aque q. s. ad ʒi (30 c.c.)

M. Sig.: Take at one dose.

SQUIBB'S CHOLERA MIXTURE.

R Tincturæ opii
Tincturæ capici
Spiritus camphoræ āā ʒi (3.7 c.c.)
Chloroformi ʒiiss (11 c.c.)
Alcoholia q. ad ʒi (18.5 c.c.)

M. Sig.: Twenty to forty minims (1.2 to 2.4 c.c. p. r. n.).

For children suffering from cholera infantum, F. Percy Elliott gives at the onset:

R Olei ricini ʒss to ʒi (1.8 to 3.7 c.c.)
Spiritus menthæ piperitæ . m i to m ii (.06 to .12 cc.)

M. Sig.: Give in hot milk.

For collapse:

R Beef tea ʒii (60 c.c.)
Brandy ʒii (7.39 c.c.)

By enema followed by warm bath.

"If serious, ether or aromatic spirit of ammonia, by hypodermatic injection or rectal injection of starch and warm water. Brothe (mutton, beef, veal) are better than peptonized milk; or give no food for twelve or twenty-four hours (occasional sip of hot water). Rub chest and abdomen with whiskey and water, and wrap in cotton wool or flannel."

In urgent cases Lesage advises injecting into the subcutaneous tissue, one ounce (40 c.c.) of the following solution, making from three to six injections a day.

R. Sodii sulphatis ʒiiss (9.72 gm)
Sodii chloridi ʒi (3.88 gm)
Aque distillæ ʒxxxiii (1000 c.c.)

TO ARREST VOMITING AND PURGING.

R. Bismuthi subnitratæ ʒss (5.8 gm.)
Spiritus myristicæ mxx (1.2 c.c.)
Spiritus vini gallici ʒiiss (11 c.c.)
Syrupi acaciæ ʒiiss (45 c.c.)
Aque cinnamoni q. s. ad ʒiiss (89 c.c.)

M. Sig. Teaspoonful every two hours. *Porell.*

R. Hydragryri chloridi mitis
Plumbi acetatis āā gr i (.06 gm.)

M. Ft. pulv. No. iv. Sig. One powder every three hours for a child from ten to twenty months old.

T. D. Mitchell.

In treating these cases it is often necessary to irrigate the intestines. Langford Symes says: "First wash out the rectum, then irrigate high up, with a warm normal saline or boric acid solution, the douche can be raised eighteen inches."

CHOLERA INFANTUM AND THE NURSING BOTTLE.

The perils that surround the bottle-fed baby are manifold. If a liquid reasonably resembling breast milk in composition and temperature is put into its bottle, it is still in danger of sucking in septic and possibly specific germs that have been lurking in the rubber appurtenances of the bottle. The abomination known as the Alexandra nursing-bottle, that familiar device for saving the nurse maid trouble, has commended itself to the unthinking for many years, and its use has even been upheld by some physicians who should have known better, although one would suppose that the dullest comprehension could not fail to perceive the impossibility of keeping it clean—in the ordinary sense of the word, not aseptic. Most physicians whose practice has been largely among children have, it is true, inveighed against it, but hardly any heed has been taken of their statements, perhaps because they were not clinched by indisputable demonstration. Such a demonstration seems now to have been made, and it is by no means the least of the services rendered by bacteriology. To Dr. Wendé, the health officer of Buffalo, so far as our present information goes, is due the credit of having proved the agency of the "hose" bottle in causing cholera infantum.

The flexible external tube of the Alexandra bottle, as everybody knows, is made of soft rubber, a material which speedily becomes foul when kept in contact with impure liquids or those that readily decompose. Dr. Wendé has shown that this tube, after having been in use for a little time, contains in the depths of the rubber, to say nothing of its inner surface, micro-organisms that even boiling does not destroy, as is proved by the ease with which cultures of them are grown. In consequence of Dr. Wendé's demonstration the Buffalo Board of Health some time ago passed an ordinance forbidding the sale of the "hose" nursing bottle, and during the year or more that this enactment has been in force the cholera infantum mortality of Buffalo has been fifty per cent. less than before.

But this is not all. The elimination of the "hose" does not, of course, do away with all the dangers of bottle-feeding. Not only has the baby to be guarded against bad milk, but the micro-organisms lurking in soft rubber still pursue it. Dr. Wendé finds that even the rubber nipple used when the "hose" is dispensed with soon becomes a nest for bacteria; so that in time even that must go, although it will have to be used, we presume, until a less objectionable form of nipple is devised. Dr. Wendé finds that the nipples made of white rubber are

more readily infected than the black ones; therefore, so long as rubber nipples still have to be employed, the black ones are to be preferred. What is wanted now is a nipple combining something of the elasticity of soft rubber with the germ proof quality of glass. Celluloid has been suggested as a material that might be made to fulfil these requirements, and we see no reason why it should not if properly treated. Something must be invented to supersede the soft rubber nipple.—*N. Y. Med. Jour.*, June 24.

Book Notices.

Atlas of Diseases of the Skin, including an Epitome of Pathology and Treatment. By PROF. DR. FRANZ MRACEK of VIENNA. A authorized translation from the German. Edited by HENRY W. STELWAGON, M.D., Ph.D., clinical professor of dermatology, Jefferson Medical College, Philadelphia, etc. With 63 colored plates and 39 full-page half tone illustrations. Price \$3.50 net. Cloth. Philadelphia: W. B. Saunders, 1899.

This is one of the series known as Saunders' Medical Hand-Atlases, of which the publisher claims to have contracted to sell 100,000 copies and thought it a large undertaking, but that now it will more probably amount to twice that number. If each of the series is as excellent as is this one, the statement can easily be believed. The importance of personal inspection of cases in the study of cutaneous diseases is readily appreciated, and next to the living subject are pictures which will show the appearance of the disease under consideration. To be of material advantage in skin diseases these must not be confined to black and white, but must be in colors and well executed. This is what we have in this atlas. The original cost of these plates must have been enormous, but since they are used to illustrate the book in so many different countries, and necessarily in such an enormous number, the original first cost is so divided and subdivided that it amounts to but little on each one. While pathology and treatment are well considered in the text, the great value and popularity of the book will depend on the aids to diagnosis by means of the excellent illustrations. A large number of well-selected prescriptions are given, and altogether the work will be found of very great value to the general practitioner in the treatment of skin diseases.

BOOKS AND PAMPHLETS RECEIVED.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review as dictated by their merits, or in the interests of our readers.

Transactions of American Association of Obstetricians and Gynecologists. Vol. xi. For the year 1898. Octavo. Cloth. Pp. 372. Philadelphia: Wm. J. Dornau. 1899.

Shall We Drink Wine?—A Physician's Study of the Alcohol Question. By DR. JNO. MADDEN, professor of physiology in the Wisconsin College of Physicians and Surgeons. Octavo. Cloth. Pp. 220. Milwaukee: Press of Owen and Weinbrecht Co. 1899.

Hygiene of the Mouth.—Guide to the Prevention and Control of Dental Diseases. By R. DENISON PEDLEY, F.R.C.S., Ed., L.D.S., Eng. With numerous illustrations. 8vo. Cloth. Pp. 94. Price, 2 6. London: J. P. Legg & Co. Philadelphia: S. S. White Dental Mfg. Co.

Elements of Vital Statistics. By ARTHUR NEWSHOLME, M.D., Lond., F.R.C.P., examiner in state medicine to the University of London and preventive medicine in the University of Oxford, Etc. Third edition. Octavo. Cloth. Pp. 353. Price, 83. London: Swan Sonnenschein & Co., Ltd. New York: The Macmillan Co.

Class Book of (Elementary) Practical Physiology. Including Histology, Chemical and Experimental Physiology. By DE BURCH BUCH, M.D., C.M., F.R.S.E., professor of physiology in the Yorkshire College of the Victoria University; examiner in Victoria University; additional examiner in Edinburgh University. Small octavo. Cloth. Pp. 273. Price, \$1.75. Philadelphia: P. Blakiston's Son & Co. 1899.

Hay-Fever and Its Successful Treatment. By W. C. HOLLOPETER,

A.M., M.D., clinical professor of pediatrics in the Medico-Chirurgical College of Philadelphia; physician to the Methodist Episcopal Hospital; pediatricist to the Medico-Chirurgical Hospital, to St. Joseph's Hospital; Fellow of the American Academy of Medicine, etc. Second edition. Revised and enlarged. Octavo. Cloth. Pp. 151. Price, 81. Philadelphia: P. Blakiston's Son & Co. 1899.

Atlas of Fractures and Dislocations. By Prof. Dr. H. HELFERICH of Greifswald. Translated from the third German edition by J. HUTCHINSON, JR., F.R.C.S. Sixty-eight superb chromolithographic plates with descriptions, and 150 pages of text, illustrated by 126 woodcuts. Wood's Series of Medical Hand Atlases. Muslin, 83, net. New York: Wm. Wood & Co. 1899.

Practical Diagnosis: The Use of Symptoms in the Diagnosis of Disease. By HOBART AMORY HARE, M.D., B.Sc., professor of therapeutics and materia medica in the Jefferson Medical College of Philadelphia. Fourth edition, enlarged and thoroughly revised. In one octavo volume of 622 pages, with 265 engravings and 14 full-page colored plates. Cloth, \$5.00 net. Philadelphia and New York: Lea Brothers & Co. 1899.

Manual of Surgical Treatment: By W. WATSON CHEYNE, M.B., F.R.C.S., F.R.S., professor of surgery in King's College, London, surgeon to King's College Hospital, etc., and F. F. BURCHARD, M.D. and M.S. (Lond.). F. R. C. S., teacher of a practical surgery in King's College, (Lond.), surgeon to King's College Hospital, etc. In six imperial octavo volumes, with illustrations. Vol. i, 285 pages, with 66 illustrations. Cloth \$3.00 net. Philadelphia and New York: Lea Brothers & Co. 1899.

Clinical Diagnosis: The Bacteriological, Chemical, and Microscopical Evidence of Disease. By Dr. RUDOLPH V. JAKSCH, professor of special pathology and therapeutics, and director of the medical clinic in the German University of Prague. Specially revised and enlarged by the author from the Third English Edition of the Translation by James Cagney, M.A., M.D. Fourth Edition with numerous illustrations (partly in colors. Octavo. Cloth. Pp. 535. London: Charles Griffin and Company, Limited. Phila: J. B. Lippincott Company, 1899.

Progressive Medicine: A Quarterly Digest of the Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., professor of therapeutics and materia medica in the Jefferson Medical College, etc. Vol. ii, June, 1899. Surgery of the abdomen, including hernia; gynecology; diseases of the blood; dietetic and metabolic disorders; diseases of the spleen, thyroid gland, and lymphatic system; ophthalmology. Octavo. Cloth. Pp. 468. Philadelphia and New York: Lea Brothers & Co. 1899.

Deaths and Obituaries.

STEPHEN STEWART WHITE, M. D., U. S. N., died in Sitka, Alaska, May 30, of ptomain poisoning, at the age of 36 years. He was graduated from Columbia University in 1885, and, after service in the Bellevue Hospital and also the Johns Hopkins Hospital, he passed the naval examining board and was commissioned assistant-surgeon. He was assigned to the U.S. Steamship *Trenton*, which was wrecked in the harbor of Apia, Samoa, when he went to San Francisco in charge of the survivors. He later served on the Baltimore, at the Naval Academy, on the Pacific coast, and as surgeon of the *Thetis*, and in June, 1897, was ordered to the naval hospital at Sitka.

IRA DEWITTE BROWN, M.D., Albany, 1865, died at his home at Weedsport, N. Y., June 23, aged 69 years. He was for several years city editor of the *Utica Herald* and afterward editor of the *Oswego Times*, and for some time an Albany correspondent and also legislative reporter of the *Albany Journal*. In 1872 he was sent to the legislature to represent the northern district of Cayuga. At the time of his death he was editor of the *Cayuga Chief*.

WESLEY CLARK EARL, M.D., Buffalo, N. Y., died June 19, aged 64 years. During the Civil War Dr. Earl served as an army surgeon and was for a time stationed at Elmira. He had practiced in Buffalo for about twenty-five years.

NATHAN PRATT, M.D., Mildred, Del., died June 18. Dr. Pratt was 65 years of age and during the Civil War was surgeon in the United States Hospital at Philadelphia and later in the Sheridan Field Hospital at Winchester, Va.

WM. J. SCOTT, M.D., Philadelphia, a graduate of the medical department of the University of Pennsylvania, class of 1892, died June 18, aged 32 years.

E. H. FUHRMAN, M.D.—At the recent regular meeting of the Alumni Association of the Wisconsin College of Physicians and Surgeons, the following resolutions on the death of Dr. E. H. Fuhrman, in Grafton, Wis., May 26, were adopted:

Resolved, That in the death of Dr. Fuhrman, the Association has lost one of its most respected and valued members; That the sympathy of the Association be extended to his family in their sad loss;

And finally, that these resolutions be published in the *JOURNAL* and spread on the minutes of the Alumni Association.

Resolved, That a copy of these resolutions be sent to his family.

OTTO KRUEGER, M.D., }
J. H. BLEKKING, M.D., } Committee.

John Isham, M. D., Louisville, Ky., June 22, aged 40 years.
. . . S. H. Keys, M.D., Monongahela, Pa., June 24, aged 67 years.
. . . Allen G. McConkey, M.D., Modesta, Ill., June 13, aged 28 years.
. . . Henry S. McElmurray, Charleston, Mo., June 16, aged 28 years.
. . . D. C. Strong, M.D., Chetek, Wis., June 20, aged 73 years.
. . . Wm. T. Taplin, M.D., Cadillac, Mich., June 18, aged 77 years.
. . . Walter M. Wright, M.D., Dartmouth, 1874, died June 24, at Orange, Mass., at the age of 53 years.
. . . Francis J. Fella, M.D., Northwestern Ohio Medical College, 1891, died at Toledo, Ohio, June 17, as the result of a fall.

Miscellany.

Lawson Tait: Erratum.—In the obituary notice of Mr. Lawson Tait, in last week's *JOURNAL*, he was referred to as "friend and teacher" of Dr. Keith. This should read "friend and pupil."

Massage of the Stomach.—In chronic affections of the stomach, the effect of medication or local applications of nitrate of silver, etc., is much enhanced by brief massage of the organ.—*Wegeler: Semaine Méd.*, No. 19.

Gonococci in Corpus Luteum Cysts.—E. Fraenkel demonstrated that these cysts develop from excessive proliferating processes in the follicular epithelium, and he now announces the discovery of gonococci in the suppurated cysts.—*Archiv f. Gyn.*, lvii, 3.

A Virile Veteran.—Joel Parker, aged 84 years, a veteran of the Civil War, was buried in Ocean Grove, N. J., June 11. He had been twice married and was the father of twenty-four children, all of whom were present at the funeral. The oldest child is 60 years of age and the youngest six months.

Varicose Ulcers and Nerve Stretching.—As stretching the nerve induces an excessive proliferation of the tissues in the part involved, Chipault has applied the process to the treatment of varicose ulcers, first stretching the nerve—usually the musculocutaneous—and then treating the ulcer, curetting or excising, and suturing the lips of the wound, if small.—*Semaine Méd.*, No. 18.

Pyohydrophrosis Evacuated Through Bronchi.—A man 43 years of age, with chronic renal lithiasis, and a fluctuating tumor in the region of the kidney, began to cough and expectorate a thin fluid which proved to be urine, while the tumor vanished, and the patient seemed to be restored to his former condition of health.—*Med. Obsorvenje*, April.

Wet Sheet in Treatment of Hyperthermia.—According to the experience of Bevilacqua, a hydrotherapeutic measure fully as effective as cold baths, with none of their inconveniences, is to stretch a wet sheet five centimeters above the patient, who lies nude beneath it. The sheet is kept wet by spraying with water to which 10 per cent. ether may be added. He supplemets the sheet with a hot-water bottle at the feet and ice to the forehead.—*Semaine Méd.*, May 31.

New Application of Heat in Gynecology.—C. Mirtl. Based on the principle of the thermophore, a metal or hard rubber obturator is filled with sodium acetate in a liquid form and inserted into the vagina. As the fluid solidifies it generates heat, producing a constant temperature of 58 C. All the inconveniences of hot-water irrigations for the purpose are avoided and the patient can readily insert the appliance without assistance.—*Wiener Med. Presse*, 1899, No. 16.

Treatment of Lupus with Potassium Permanganate. Katschanoweki reaffirms the benefits of the dry application of finely pulverized potassium permanganate to lupus, and reports thirty-six cases thus successfully treated. The layer should be several millimeters thick and a dry bandage applied. After the scab has fallen any indifferent dressing will complete the rapid cure. Sound tissue is not affected by it and it is equally efficacious for other tuberculous ulcerations and open cavities.—*Ljetopis. russkoi chirurgii*, 1.

Professional Phosphorism.—Courtois-Suffit asserts that aside from the necrosis of the jaw produced by the fumes of phosphorus through a carious tooth, and easily prevented by excluding persons with unsound teeth from the factories, there are no specific symptoms of phosphorus intoxication beyond the peculiar odor of the breath and urine, anemia, slight but rather frequent, especially among women, and possibly albuminuria, which is, however, always isolated, never accompanied by any other symptoms of Bright's disease. Other symptoms appearing are due to other causes, auto-intoxication, etc., and must not be attributed to the phosphorus, which does not specifically affect the general health.—*Presse Méd.*, May 3.

Sanitary Report of Havana, Cuba, May, 1899.—The chief sanitary officer of the city of Havana has reported 607 deaths during the month of May, 1899. The prominent items in his report are: tuberculosis, 92; enteritis, 80; heart disease, 48; malaria, 41; pneumonia, 34; meningitis, 31; cirrhosis of the liver, 18, and measles 13. Sixteen deaths were reported as from infectious fever, 11 from typhus, 5 from typhoid, 2 from gastric fever, and none from yellow fever, puerperal fever or scarlet fever. The number of sanitary reports received from sanitary inspectors during the month was 8138; the number of sanitary advices sent to property owners, 2685, and 543 cesspools cleaned. Disinfection was effected in the following instances: yellow fever, 2; typhoid fever, 15; infectious fever, 21; pernicious fever, 6; smallpox, 1; varioloid, 7; measles, 152; diphtheria, 18; typhus, 4; tuberculosis, 81; leprosy, 2; total, 360.

Sick-rates Among Troops in Cuba.—Major S. T. Armstrong, U. S. N., chief surgeon Department of Puerto Principe, has reported for the month of May, 1899, an average of 10 per cent present and absent sick, the average strength being 1278 men. The lowest rate was 8.4 on May 5, the highest 10.8 on May 16. There are a few cases of typhoid fever in the Eighth U. S. Cavalry and the Fifteenth Infantry, but the sick-rate of the former regiment has improved greatly of late. Both regiments moved into new barrack buildings during the month. All the troops in this department are now in barracks except a command of 124 men at Nuevitas. This command is under canvas but its barrack buildings are well advanced in construction. The Department is well supplied with surgeons, trained nurses, hospital-corps men, and medical and hospital supplies. The Department of the Province of Havana has a somewhat better showing for the month. Its lowest rate of sickness, including all sick present and absent, was 5.4 per cent. on May 5, and its highest 9.6 per cent. on May 12.

William F. Jenks Memorial Prize.—The fifth triennial prize of \$500 will be awarded to the author of the best essay on "The Various Manifestations of Lethemia in Infancy and Childhood, with the Etiology and Treatment." The prize is open for competition to the whole world, but the essay must be the production of a single person, and must be written in the

English language or, if in a foreign language, accompanied by an English translation, and sent to the College of Physicians of Philadelphia, Pa., before Jan. 1, 1901, addressed to Dr. Richard C. Norris, Chairman of the William F. Jenke Prize Committee. Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay. Unsuccessful essays, may be reclaimed by their respective writers, or their agents, within one year.

A Layman's View of Lawson Tait. — The great surgeon who passed away yesterday was beyond all question one of the men who helped to make Birmingham famous. At this moment, when private animosities and professional jealousies are laid aside, it is possible to form a dispassionate estimate of the man who fought death successfully for others, and yet has yielded himself to the fell destroyer while yet in the prime of middle life. Truly may it be said, "what shadows we are and what shadows we pursue." Lawson Tait was to be judged by none of the rules and laws by which men are measured for the Temple of Fame. He had his own way of doing everything; he had a marvelous aptitude for his profession, and a masterfulness that bent even his most resentful rivals to his will. He not only earned distinction by his skill; he filled the eye as a man of distinction, and no member of his profession stood out so conspicuously in manner, speech, and general appearance. He was something more than a celebrity; he looked one. There must be something exceptional in a man who comes to Birmingham from the far north without a friend; who starts in a modest private practice in a suburban road, and yet within ten years or so finds himself at the head of an important branch of the surgical profession with an income of ten thousand a year. In every quarter of the globe the magic skill of his operating knife had become almost a proverb. For one operation, which he performed in Italy, he received a fee which would serve as a good two years' income for an ordinary professional man. The Americans sent over their young and promising surgeons to study at the feet of the Birmingham magician. During Mr. Gladstone's last Government he had the opportunity of refusing the offer of a baronetcy. A man can not leap to greatness and great fees without provoking many jealousies, and perhaps, with all his skill, there was no man in England with more enemies, and this may be held to be possibly the greatest compliment that may be paid to his memory. There is this, at any rate, to be said, that he disclosed the possibilities of the knife for cases that had hitherto been looked upon as hopeless. A man who succeeds in this way does not always get his due. There are those who say that he was fond of operating for operating's sake. Others, whose opinion is quite as valuable, look upon him as one of the benefactors of the century. Women knew it must be a desperate case if Lawson Tait's services were required. For that reason they did not know whether to pray for him, or shudder at him. He had, like all masterful men, a fine contempt for the opinions of people who did not agree with him. And, as with most geniuses, there was an erratic turn in his composition. He took to his hobbies and his houses and his friends, in fits and starts, and gave them up just as suddenly and with just the same lack of system. He achieved much, but with a more discriminating balance he might have done much greater things, and died a much happier man. But he was naturally pugnacious, and no man can fight against his predominant nature. His last public act was to take part in a furious and bitter controversy with a well-known Birmingham physician. He dearly loved a tussle of this kind, and the longer and the stronger the better. Of late years he has not taken a prominent place in the social life of the town or its public and political movements. This was in many ways to be regretted, as there was no better speaker in Birmingham, no more generous

man, and no man who took a breezier and a broader view of things. He started everything he undertook with an enthusiasm that was marvelous to watch. With him disappears a most interesting and remarkable figure, one who, beyond all dispute, has brought much distinction to the town.—*Birmingham (Eng.) Daily Mail*, June 14

Suture of Heart. Ramoni (*Arz. degli Osp.*, May 14) reports that a young man stabbed twice in the heart was brought to the hospital in a very anemic condition, and after cutting and turning back a large flap opening into the thorax, the wound in the pericardium was enlarged to 6 cm. and the two small wounds into the ventricle from which the blood was issuing "in waves" were sutured. The suture was laborious, as the passage of the first needle produced such energetic systole as to tear the stitch, and the upper wound became enlarged to 3 cm. while being tamponned with the fingers. The suture did not include the endocardium. The pericardium was sutured separately and as no blood had entered the pleural cavity and the patient was very weak, the flap was replaced without suturing either pleura or ribs. In forty-nine days the patient was dismissed entirely recovered. In the thirteen cases on record wounds of the left ventricle are more numerous and severe. In 14 per cent. of the cases in which recovery without intervention has been reported, organic lesions remain which must compromise life sooner or later.

The Index: a Suggestion.—With this number of the JOURNAL we send the index for the last volume. We believe this is as full and complete as it is possible to make it. We would call attention to the "authors' index" which, while it only covers a part of the half year, makes a list of about 1700 names. In the future we hope to make this list so complete that it shall include all authors of original papers published in the reputable medical journals of the country. This, with the cross-index of subjects will, we are sure, make a very valuable addition. In this connection we desire to make a suggestion; the half-yearly volume now makes a very large book, too large to handle easily when several volumes have to be searched. Often the indexes of several volumes have to be examined before the desired matter is found. The suggestion we make is that an extra copy of the index be kept, aside from the one bound in the volume, to be used in looking up subjects. In a few years the great value of this system will be appreciated in the economy of time and labor, the several indexes being kept together in a cover for the purpose. To accommodate those who desire to take this hint, we have had extra copies of the index printed which we will send on receipt of three two-cent stamps. This is not a money-making scheme on our part, as the cost of paper, printing, mailing and postage will be more than six cents. It is a scheme on our part, however, to assist our readers, by making available, with little labor, the large amount of information contained in the bound volumes.

Philadelphia.

MORTALITY STATISTICS.—The number of deaths for the week just closed numbered 379, a decrease of 44 over last week and of 8 over the corresponding period of last year. Of the total number of deaths, 122 occurred in children under the age of 5 years. The following were the principal causes: apoplexy, 12; nephritis, 31; cancer, 16; cholera infantum, 17; heart disease, 29; marasmus, 16; suicide, 2; sunstroke, 3; appendicitis, 4.

HOWARD HOSPITAL REPORT.—The 45th annual report of this hospital has just been issued. The number of patients admitted to the wards and private rooms was 399, as compared with 327 last year and 283 the year previous. The number of accident cases was 1618, as compared with 1525 for last year and 845 for the year 1897. The new patients were 8127, and visits to the hospital, 29,253.

Washington, D. C.

HEALTH OF THE DISTRICT.—The report of Health Officer

Woodward for the week ended June 17, shows the total number of deaths to have been 147: 84 white and 63 colored. At the close of the week there were 5 cases of smallpox, 25 of diphtheria and 68 of scarlet fever under treatment. During the week there were three fatal cases of cerebrospinal meningitis.

MEDICAL EXAMINERS APPOINTED.—The Commissioners of the District have appointed Drs. J. Taber Johnson and George N. Acker members of the Board of Medical Examiners for the term of three years. They also reappointed Dr. Henry B. Noble as a member of the Board of Dental Examiners.

TESTING POTOMAC WATER. Colonel Smart, in charge of the Laboratory of the Army Medical Museum, is making a series of scientific tests of the Potomac water in the reservoir from which Washington is supplied. So far the bacteriologic tests show the water to be dangerously contaminated with sewage and a large proportion of colon bacillus.

Baltimore.

GARRETT FREE HOSPITALS FOR CHILDREN.—The annual report of the Garrett Free Hospitals for Children is out. There are two hospitals, one in Baltimore, the Robert Garrett Hospital for children, for winter use, and a sanitarium at Mt. Airy, Md., for the summer. The buildings were opened in 1888, and 1889. A dispensary is also open during the year. Cases of contagious diseases are excluded, but provision is made for the treatment of such cases arising in the hospital in an isolation ward. During the past year 227 children were admitted; there were 52 operations and 7 deaths. At the dispensary 1167 were treated.

CATTLE SLAUGHTERING.—The State Board of Health furnishes a report giving the result of an examination by sanitary inspectors of the various towns in Maryland in which the slaughtering of cattle is conducted. The report covers nearly all the towns having a population of over 500. At the great majority of slaughter-houses the offal is fed to hogs: the fats are also rendered at most of them. The report says in effect, slaughter-houses, unless conforming to sanitary regulations, are apt to become nuisances and menaces to health. The rendering of animal fats is always offensive although the influence on public health can not be clearly traced. Open kettles are unnecessary and should be forbidden. The fats can always be sold in the rough, to large establishments where they are separated in tight tanks with a minimum of offense and cost. Feeding slaughter-house offal to hogs is filthy and wasteful. Nuisance is bound to arise on such premises. Such pork is of poor quality and may be dangerous on account of the liability to trichinosis. There ought to be a law against feeding blood or other uncooked offal to hogs. This whole matter of the regulation of slaughter-houses needs to be taken up by the sanitary authorities of the towns and villages. The smaller towns have the best regulations. The best solution would be the establishment, near each town, of one properly conducted modern abattoir equipped to handle all the refuse in a cheap and profitable manner. Local butchers could effect a considerable saving by renting the privileges of a joint abattoir.

St. Louis.

RESIGNATIONS.—Drs. A. C. Bernays and I. S. Meisenbach of the St. Louis Medical College have resigned. Dr. H. C. Dalton of the same institution retired some weeks ago.

MARRIAGES.—Mrs. Wheeler Bond of St. Louis and D. Bryson Delavan of New York City were recently married to daughters of representative St. Louis citizens.

MEDICAL SCHOOLS.—The recent consolidation of the St. Louis Medical and Missouri Medical Colleges, into the Medical Department of Washington University, makes a strong combination. The respective buildings and general equipments of the two schools are new and near to each other, as also are their clinics and hospitals, so that few cities in America now possess a more generously equipped or more liberally endowed medical college than St. Louis in the above consolidation.

DR. T. O. SUMMERS.—Members of the American Medical Editors' Association, and in fact, all physicians interested in American medical literature for the past twenty years, will probably recall Dr. Thomas Osmond Summers, whose death was noted in the JOURNAL last week. He for a number of years practiced and taught medicine in Nashville, Tenn., later lived in Florida, and for the past seven or eight years has been in St. Louis, acting as medical college teacher, practitioner and editor. He has been considered an expert on yellow fever for years, and has occasionally been called to the South in times of epidemics. He tendered his services as a yellow fever immune and expert on the breaking out of the Spanish war and was promptly given a prominent place in the medical service of the army. On retiring a few months ago he was honored with the title of surgeon-major. Dr. Summers was one of the most able and brilliant men in the medical profession of the South, possessed of a bright intellect, a congenial disposition and many engaging qualities. It has been the writer's pleasure to know him for more than twenty years. Pursued by ill-health, within a few years he has become a victim of the morphin habit, and this had dimmed the brilliancy of his mind, but never soured his gentle nature. As teacher, physician, friend, he was always true. As a head of a family he was gentle, kind, lovable and greatly beloved. At the last meeting of the Missouri State Medical Society, a paper which he had read and which bore some of the evidences of mental eccentricity, was by motion of a member rejected. Dr. Summers was present at the recent meeting of the AMERICAN MEDICAL ASSOCIATION in Columbus, and expressed to friends the sadness he felt over this action, together with the fact that he had been unable to secure appointment in the regular army as he had hoped to do.

MISSISSIPPI VALLEY MED. JOUR. ASSOCIATION.—The local medical journals of St. Louis recently organized under this name, inviting all medical journals located in the territory comprised in the Louisiana purchase to join them. The prominent objects of the organization are: the advancement of the medical profession, mutual good, and incidentally the promotion of the interests of the World's Fair to be held in St. Louis in 1903. The following officers were chosen: president, C. H. Hughes; vice-president, A. H. Ohmann-Dumezil; secretary, T. A. Hopkins. The Association will hold an annual meeting and banquet during the meeting of the Mississippi Valley Medical Association in Chicago, October next.

Queries and Minor Notes.

TREATMENT OF CANCER.

WASHINGTON, Mo., June 16, 1899.
To the Editor:—In the JOURNAL of April 29 (p. 334), mention is made of a paper by Wm. B. Coley on treatment of cancer past operation. Please send me this paper and advise me of any other literature that is worthy of recommendation bearing on the same subject. Yours truly, J. I.

Answer.—The paper referred to is the final one in the special cancer number (April, 1899) of the London Practitioner. It will be impossible for us to furnish it, but it can be obtained through the publishers, Cassell & Co. In the JOURNAL, Aug. 29 and 27, 1898, Dr. Coley published a very extensive paper on this subject, and still other articles by him appeared in 1893, 1894 and 1896 in the Am. Jour. of the Med. Sci., Medical Record, Bull. of the Johns Hopkins Hospital, etc. Other papers on the subject in this JOURNAL are those of Dr. G. Betton Massey, on the electric treatment (April 23, 1898); Dr. Etheridge on treatment by calcium carbide, July 9, 1898; Dr. Emil Ries, Nov. 26, 1897; Wyeth, on treatment with toxins, June 30, 1898, etc.

Dr. C. D. Spivak has given a very good résumé of the Russian treatment with chelodionin, in the Therapeutic Gazette, Detroit, 1897, p. 226. Mention should also be made of an article by Dr. McFadden Gaston on the treatment of cancer by electricity, in the Annals of Surgery, 1897.

HYALINE CASTS.

DANVILLE, ILL., June 20, 1899.
To the Editor:—I want some information on hyaline casts. I would like to get it on the spur of the moment. Can some few hyaline casts be present in otherwise normal urine and no kidney disease be present?—Question asked with reference to insurance companies. I should like your opinion

and reference literature named. Is not this opinion held by Dr. Haines of Rush Medical College?

ANSWER.—The tendency at the present time seems to be to regard the presence of a few hyaline casts as no more significant than is sometimes a minute quantity of albumuria. Haines and Skinner (JOURNAL, Jan. 29, 1898) state that with their very thorough method they may be found in the majority of cases, even in perfect health. It is not unreasonable to suppose that a very slight renal congestion or irritation, without any symptomatic importance whatever may exist and give rise to the formation of these casts. The writers of books are, however, timid or cautious about expressing the opinion that any form of casts is without pathologic significance, and Edes (JOURNAL, Nov. 5, 1898) cautions against underestimating their importance, while admitting the above facts.

ROBERTS' LYMPH.

GALLATIN, MO., June 14, 1899.

To the Editors:—May I take the liberty to call your attention to the enclosed "hoary fakes"—such a close neighbor—and ask what you know of Dr. Joseph R. Hawley, M.D., and the "Chicago Clinical School?"

Truly yours, W. L. B.

ANSWER.—The "Hoary Fakes," as our correspondent calls it, is a pamphlet of fourteen pages entitled, "The Roberts' Lymph Compound: Its Nature, Physiological Action and Therapeutic Value," by Dr. Joseph R. Hawley, M.D., Professor Practice of Medicine and Physical Diagnosis, Chicago Clinical School. Dr. B. F. Roberts, Discoverer of the Lymph, Green City, Mo., Milan Institute, Dr. I. M. Roberts, Medical Director and Manager, Milan, Mo. The "Dr." in front and "M.D." at the end of each of the names is worthy of notice, and the general grammatical construction in the pamphlet reflects the same indication of intelligence and intelligence on the part of the author or authors. The lymph in question is taken from young goats, and consists of extracts derived from lymphoid tissue, and lymphocytes, fat and fixed tissue-cells from the lymphatic system, incorporated in lymph-plasmas by an original process of unusual delicacy. "Another strength of lymph compound is 'permatoso,' although whether alive, embalmed or in the liquid what condition we are not informed. The action of the lymph is to "correct the effects of senility," certainly a most desirable and commendable thing to do, but not only will it do this, for "later he found that by increasing the strength of concentration of the lymph he could cure a few diseases of dissimilar pathology, as will be seen below." The names appear at the end of reports of cures, which are, to say the least and "below" are given reports of cures, which are, to say the least and remarkable. The treatment may be of some value, but the pamphlet indicates faddism, charlatanism and quackism together with strong prima facie evidence of ignorance.

I. M. Roberts is designated with a star in "Folk's Directory," and his location given as Green City, Mo., not Milan; B. F. Roberts' name does not appear at all. Dr. Joseph R. Hawley was connected with the Chicago Clinical School, but is not now according to a letter from the secretary of that school, which says: "Dr. Jos. Hawley is not connected with the Chicago Clinical School. His resignation as professor of internal medicine was accepted by the board of Directors, May 17, 1899."

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended June 24, 1899:

SMALLPOX.—UNITED STATES.

District of Columbia: Washington, June 3 to 10, 1 case.
Florida: Jacksonville, June 3 to 19, 5 cases.
Georgia: Brunswick, May 16 to June 10, 6 cases; Macon, June 3, 2 cases; Savannah, June 5, 6 cases.
Illinois: Chicago, June 10, 1 case.
Indiana: Evansville, June 3 to 17, 4 cases.
Kentucky: Louisville, June 15, 5 cases.
Louisiana: New Orleans, June 16, 1 case.
Massachusetts: Boston, June 17, 1 case; Fall River, June 13, 2 cases.
Missouri: St. Louis, June 12 to 19, 9 cases.
New Jersey: Bloomfield Township, June 5, 1 case; Ocean Township, June 13, 24 cases; Ocean City, June 14, 1 case.
Ohio: Columbus, June 17, 3 cases.
Pennsylvania: Philadelphia, June 3 to 10, 21 cases; June 10 to 17, 17 cases.
New York: New York, June 17, 5 deaths.
Virginia: Norfolk, June 19, 1 case.
Wisconsin: Milwaukee, June 17, 1 case, 1 death.

SMALLPOX.—FOREIGN.

Belgium: Antwerp, May 27 to June 3, 1 case.
Brazil: Bahia, May 29 to June 3, 1 case.
England: London, May 27 to June 3, 1 case; Liverpool, May 27 to June 3, 4 cases.
India: Bombay, May 16 to 23, 11 deaths; Calcutta, May 6 to 13, 1 death.
Greece: Athens, May 27 to June 3, 16 cases, 7 deaths.
Mexico: Chihuahua, June 3 to 10, 1 death; Nuevo Laredo, May 27 to June 3, 2 deaths.
Russia: Moscow, May 20 to 27, 15 cases, 3 deaths; Odessa, May 27 to June 3, 10 cases, 1 death; St. Petersburg, May 20 to 27, 18 cases, 2 deaths; Warsaw, May 11 to 18, 1 death.
Turkey: Constantinople, June 1 to 7, 1 death; Smyrna, May 14 to 21, 2 deaths.
Uruguay: Montevideo, May 6 to 13, 4 deaths.

YELLOW FEVER.

Brazil: Bahia, May 20 to 27, 109 cases, 31 deaths.
Colombia: Panama, June 13, 18 cases, 9 deaths.
Cuba: Puerto Principe, June 21, 2 cases, total 3 cases; Santiago, June 16 to 19, 7 cases, 2 deaths.
Mexico: Tampico, June 5, 1 case; Vera Cruz, June 8 to 15, 117 cases, 61 deaths.

CHOLERA.

India: Bombay, May 16 to 23, 1 death; Calcutta, May 6 to 13, 27 deaths; Karachi, April 24 to May 1, 1 case; Moulemein, April 15 to 30, epidemic.

PLAGUE.

India: Bombay, May 16 to 23, 174 deaths officially reported, probably 300; Calcutta, May 9 to 13, 55 deaths; Arrachee, April 9 to 16, 263 deaths; District of Murrachee and Province of Sindi, April 24 to May 1, 251 cases, 175 deaths; Mauritius, May 1, 3 cases.

The Public Service.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., to and including June 22, 1899:

Thomas W. Bath, acting asst.-surgeon, from La Harpe, Ill., to Fort Leavenworth, Kans., to accompany Troop F, 6th Cav., to San Francisco, Cal., to J. Black, acting asst.-surgeon, from the Dept. of California.

Joseph L. Bell, acting asst.-surgeon, from French Lick, Ind., to San Francisco, Cal. for duty in the Dept. of California.

Charles A. Cattermole, acting asst.-surgeon, from Lansing, Mich., to San Francisco, Cal., for assignment in the Department.

Henry C. Cline, acting asst.-surgeon, from Camp Meade, Pa., to Fort Royal, Va., for assignment of contract.

Vernon K. Eastman, acting asst.-surgeon, from Murfreesboro, Tenn., to San Francisco, Cal. for duty in the Department.

Edwin F. Gardner, major and surgeon, U. S. A., leave of absence granted.

N. N. Hereford, acting asst.-surgeon, from Baden, St. Louis, Mo., to San Francisco, Cal. for duty in the Department.

Donald P. McCord, acting asst.-surgeon, sick leave extended.

John A. Metzger, acting asst.-surgeon, from Latrobe, Pa., to San Francisco, Cal., for duty in the Department.

William Gray Miller, acting asst.-surgeon, from Newcastle, Pa., to San Francisco, Cal., for duty in the Department.

James C. Shellenberger, acting asst.-surgeon, from Piqua, Ohio, to San Francisco, Cal., for duty in the Department.

John H. Stetson, acting asst.-surgeon, from Clinton, Mo., to San Francisco, Cal., for duty in the Department.

Joseph J. Wilson, acting asst.-surgeon, from New York City to Flushing, N. Y., for assignment of contract.

Movements of Navy Medical Officers.—Changes in the medical corps of the U. S. Navy for the week ended June 24, 1899:

Surgeon L. W. Atlee, detached from the "Boston" and ordered to the "Bennington."

P. A. Surgeon R. B. Ward, detached from the "Bennington" and ordered to the "Essex."

Asst.-Surgeon F. M. Furlong, detached from the "Independence" June 30, and ordered to the "Solace" temporarily for passage to the Asiatic Station.

Surgeon C. G. Herndon, on completion of temporary duty at recruiting rendezvous at Chicago, Cleveland, Ohio, etc., ordered home to await orders.

Medical Inspector R. A. Marrison, detached from the Washington navy yard, July 1, and ordered home and to await orders.

Surgeon S. H. Dickson, ordered to the Washington navy yard, July 1.

Marine-Hospital Changes.—Official List of Changes of Station, and Promotions (Commissioned and Non-Commissioned Officers of the U. S. Marine-Hospital Service, during the week ended June 22, 1899.

Surgeon Fairfax Irwin, granted leave of absence for three months from July 8, 1899, with permission to go beyond the sea.

Surgeon H. E. Carter, detailed as quarantine officer of the port of Havana, Cuba, under executive order of Jan. 17, 1899.

Surgeon C. E. Banks, to proceed to New York City, for special temporary duty.

P. A. Surgeon C. P. Wertenbaker, to proceed to Danville, Va., for special temporary duty.

P. A. Surgeon A. C. Smith, granted leave of absence for thirty days from July 19, or when relieved.

P. A. Surgeon W. J. S. Stewart, granted leave of absence for fifty-two days from June 19, 1899.

Asst.-Surgeon L. B. Cofer, to proceed to El Paso, Texas, as inspector; to proceed to Mexico for temporary duty.

Acting Asst.-Surgeon H. C. Sirocco, granted leave of absence for ten days from June 21, 1899.

Acting Asst.-Surgeon H. C. Wakefield, granted leave of absence for thirty days from June 18, 1899, on account of sickness.

Hospital Steward and Chemist Henry Gahn, to proceed to New York City on special temporary duty.

Acting Asst.-Surgeon W. C. Mason, granted leave of absence for six days from June 28, 1899.

PROMOTION.

Junior Hospital Steward Charles Slough, to be senior hospital steward.

RESIGNATION.

P. A. Surgeon W. J. S. Stewart, resignation as P. A. Surgeon accepted as tendered, by direction of the President, to take effect Aug. 9, 1899.

CHANGE OF ADDRESS.

Bruker, C. M., from Pasadena, Cal., to Canon City, Colo.
Bass, H. W., from Richmond, Va., to Henderson, N. C.
Chase, Wm., from 247 Laclade to 4419 St. Louis Ave., St. Louis, Mo.
Dickson, W. L., from 124 Baronne, to 543 1/2 St. Charles St., New Orleans, La.

Ewing, E. W., from 226 Winchester Ave., to 604 Adams St., Chicago.
Frasier, N., from Chicago to Tusculum, Tenn.

Heger, L. A., from Brooklyn, N. Y., to 1814 G St. N. W., Washington, D. C.
Hoxie, W. E., from Chicago to Hampton, Va.

Lugham, W. H., from Philadelphia to Manor Station, Pa.
Mason, L. D., from Brooklyn, N. Y., to Greenville, Conn.

Mulick, J. W., from Chicago to Riceville, Ia.
Parker, J. O., from Ann Arbor, Mich., to La Salle, Ill.

Reed, R. W., from 47 W. 71st St., to 43 W. 91st St., New York.
Pickles, H., from Joliet to La Salle, Ill.

Rohalshauger, E. E., from Wateksa to 4308 Langley Ave., Chicago.
Rice, W. F., from Omaha, Neb., to Binghamton, N. Y.

St. Louis, B., from 3457 Bell Ave. to 219 Pine St., St. Louis, Mo.
Stoue, I. S., from 2636 to 3041 11th St., Washington, D. C.

Shivak, C. D., from Deuision to Nevada Block, Denver, Colo.
Simson, C., from Chicago to Provo, Uta.

Underwood, A. M., from Lancaster, Pa., to Grove Beach, Conn.
Whoelet, A. C., from Saratoga, Wyo., to Leoben, Pa.
Wildner, L., from Chicago to Duwling, Ill.
Whitaker, J. T., from Cincinnati, O., to Lakewood, N. Y.
Wright, J. B., from Richmond, Va., to Colasie, N. C.

The Journal of the American Medical Association

VOL. XXXIII

CHICAGO, ILLINOIS, JULY 8, 1899.

No. 2

Address.

SECTION ON STOMATOLOGY*

CHAIRMAN'S ADDRESS.

BY GEO. V. I. BROWN, M.D.

DEAN AND PROFESSOR OF ORAL SURGERY, DENTAL DEPARTMENT,
MILWAUKEE MEDICAL COLLEGE,
MILWAUKEE, WIS.

For the second time it is my privilege to give you greeting in the time-honored form of the Chairman's address. Properly you have the right to expect of me a résumé of the various evidences of progress in those directions in which our interests are particularly centered. A pursuance of this idea leads directly to the pages of the journals published during the year. It is but natural that much of the matter which they contain should prove, on a close investigation, to be merely the old coats that various subjects have long been wearing, turned the other way, fashioned over into a more modern form, perhaps edged and trimmed with something new; yet there have been new facts developed, or at least a new growth started, on old lines of development, in a few subjects, which bring them rightfully to your notice at this time, notable among these are the experiments of Dr. J. Leon Williams, whose demonstrations of his study have cast a new light on the etiology of dental caries, and are bound to have an extended influence, directly and indirectly, on the methods employed in the preservation of tooth structure; as are also his studies of the pericementum, particularly those which by the aid of the microscope have shown the collateral nerve-supply from which we positively find that nerve-filaments make their way to the pulp, not only through the apical foramen, but through the pericementum at other portions of the root surface. It is the possible clinical importance of this interesting demonstration to which I feel that I must call your attention, bearing to me as it does a more than usual import through the study of the various phenomena of neural disturbances, which have made up the larger portion of my practical work for some time past.

Last year, and also the year before, in papers before this Section, and in one before the Section on Neurology, I tried to make clear the fact that by reason of the action of the jaws through some central disturbance affecting the muscles of mastication, by mal-occlusion, habit or otherwise, the constant irritation of the membranes around the roots frequently caused reflex pain in the various points of distribution of the fifth nerve; spasmodic and other affections frequently, also any symptoms of general neurasthenia, which have hitherto usually been ascribed to eye strain, womb affection, or some of the other better known forms of nerve irritation. That such conditions might result from pulpitis or direct irri-

tation, transmitted to the nerve trunk, through the apical foramen, was well understood, but such symptoms were not commonly accepted as being likely to arise from the pericementum alone, yet from the slides which Dr. Williams has shown, the facility with which they might occur in this manner is easily comprehended. The importance of the work, and the diagnostic significance of the facts made, I am sure will become more and more apparent to others as it has to me during the investigation of the past year which by a long list of clinical evidences has added to my already strong conviction that the frequency and severity of the symptoms in nervous affections of the face, jaws, and neck are nearly always, if not induced, at least aggravated by the constant grinding of the teeth, or extreme pressure of the jaws during sleep or moments of abstraction, and with paroxysms of pain; usually, however, without consciousness of the fact by the individual at the moment. The symptomatology and diagnostic differentiation of pains of the head and face are most unreliably laid down in text-books and medical literature, therefore any step toward definite etiologic distinction is worthy of our most careful consideration.

The second subject brings to mind the fact that there has begun, and is now, in the somewhat painful and even uncertain act of being born, a new state of things with regard to the higher preliminary requirements for the admission of students to our dental colleges; also an effort to arouse interest in the unification of the laws governing the practice of dentistry throughout each of the different states, so that a license to practice granted by one board shall be everywhere accepted by other boards, and this too without lowering the standard or in any way jeopardizing the good work which even the strictest among them may be endeavoring to accomplish. This has been brought forward by Dr. E. C. Kirk in a valuable paper and editorial. It is unfortunate that at the present time there appears to be a danger of a clashing of interests between the National Board of Dental Examiners and the National Association of Dental Faculties, the two bodies whose interests should be and doubtless are centered in raising the standard of dental education, forces that ought to be in harmony instead of in opposition to each other, or vying in an endeavor to advance rather than disputing as to the manner of the progress. The dream which many of us have cherished in those moments when our Utopian fancies have held sway over the difficulties that at other times seemed insurmountable, might now be accomplished or at least set well on its way toward fulfillment by a little effort, which might perhaps in a measure help to solve the present differences. By way of a suggestion to this end, the idea is now given to you that, were the two associations named to work together, approximately at least in harmony, as do the upper and lower houses of our Congress, the legislatures and senates in our states, and agree that rules governing college management with regard to preliminary requirements, nature and length of study, require-

* Presented to the Section on Stomatology, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

ments for graduation, etc., should be acted on by each, and approved by both before becoming laws properly binding the college membership—and this much accomplished—these two bodies together should select each a certain number yearly from among themselves or outside of the membership, who should be empowered to examine both colleges and students and report jointly to both associations, also to regulate the examination methods and questions of the different boards, so that students graduating under this supervision might be everywhere accepted with merely a nominal examination or none at all, and that a license granted by one board could be accepted with perfect security by every other board, because the character of questions would be uniformly the same for all. Thus we have at once a simple and feasible plan, easily practicable and without the necessary revision of state laws or the passage of a national law, both of which are almost or nearly insurmountable obstacles. The arguments against this plan might be, on the one hand that the National Board of Examiners is a body, the members of which are largely more or less the result of political appointment and therefore objectionable on the ground of politics and perhaps of unfitness as compared with the members of the association of faculties, who are necessarily trained teachers thoroughly conversant with the needs and practical requirements of college work. Yet out of this very objection grows the particular practicability of the plan because the training and fitness of the college men by action and advice would undoubtedly influence the other body, while on the other hand, and tendency to check advance by reason of the possibility of selfish interests, expressing itself through a fear of the loss of students, would be counterbalanced by council with the examiners' association, and while it must be admitted that the personnel of state boards is often marked by ignorance and unfitness for the duties they are called on to assume, yet it must be remembered that they represent the people and voice the sentiment of the great body of practicing dentists, not enrolled on the faculty lists of colleges whose earnest desire, so far as the best of their number might dictate, would unquestionably be in the direction of an elevated standard, and while individual dishonesty may sometimes be a "bar smister" upon the escutcheon of a board, yet who can question that the majority of the delegates from each of the states would at least be fair-minded, honest and full of the zeal which every high thinking practitioner should possess? Why not then join hands, those who are fit by reason of experience and whose calling ought to lead them to favor better education with those who have been selected by reason of their inclination in the same direction. Without politics, delay or serious discord, without injury to the interest of any college, board, state, or individual, can be set in motion a systematic co-operation which could give us a higher standard of dental education, the equivalent of uniform legislation. I would suggest that this idea, if you approve it, emanate in some substantial form through cooperative committee, or direct communication to both the National Association of Dental Examiners and National Association of Dental Faculties.

Two years ago, in Philadelphia, in the chairman's address of Dr. Andrews, and again last year in my own at Denver, the idea was brought forth and stress laid on the importance of examination of the mouths of public school children by competent dentists and need of giving instruction as to the proper care and such prophylactic measures as would at least tend to check the vast amount of suffering, sickness and general infection due to the

pathogenic organisms of the oral cavity, neglected through the ignorance which prevails on this subject. I feel it my duty to again call your attention to the importance of this subject and to impress on you the need of some active step in a direction which is clearly defined, and directly in the line of the duty which rests on each one of us, much more by reason of our double interests in medicine and dentistry than it does on the dentist alone, who has perhaps less concern with regard to the public health. It is a fact that 50 per cent. of all people, certainly in the large cities, are affected with tuberculosis in some of its many forms. It is also true that the death of one of every seven by this disease is a conservative estimate. We know that affections of the stomach, and of the intestinal tract throughout its entire length, are commonly the result of infection from the mouth. We know that the bacillus of diphtheria, the pneumococci, streptococci and other pathogenic germs are frequently found in the mouth of healthy persons, that diseases of the eye, ear, nose and throat, anemia, pyemia and septicemia, together with many spasmodic and nervous diseases, are often the result of oral conditions, which, with a little care might easily have been prevented in the beginning. You are too well familiar with these facts to need a rehearsal of them, but what I feel is required this time is, some active definite organization which will begin a systematic undertaking of the promulgation of this idea and the work it contemplates in all of the cities where our influence extends. In no other way can we confer so much benefit on the two professions we represent and on our fellow-men, or reflect such undying credit on ourselves and our Section as by giving this matter the time and consideration it deserves. I would suggest, therefore, that a committee be appointed and empowered to appoint subcommittees in the various cities, to ask state local societies to assist and to correspond with the principals of schools urging that the dentists whom this committee might select be allowed, or if necessary, requested, to come to the school buildings and talk to the students on this subject; that whoever undertakes this work be urged to make examinations of the mouths and collect data as far as possible. If all this be done in the name of the Section of Stomatology and the credit resulting be laid to its door, I am sure the reward will be ample.

I have forborne thus far making mention of the value of papers of members of our Section published in current literature, or of additions from individuals among our little band of followers in book form, valuable to dental, medical and general science, choosing rather to refer to contributions from outside our membership, but I cannot, in justice, refrain from calling attention to the fact that the Section of Stomatology has reason to be proud of the scientific results of original investigations that its members have given to the world, there being no other organization of dentists, so far at least as I can learn, whose members have contributed to much scientific matter in the form of books, papers and original work, in proportion to the total membership, as have the members of this Section. This, I believe, should be not only a matter of congratulation, but one of great encouragement as well. It is a matter that makes me feel deeply the honor you have twice conferred on me, an honor that, optimistic as I am of the future of this Section, in which our hearts are bound together. I feel and know will be of ever-increasing importance in the eyes of the scientific world.

We stand to-day at a portal
Once locked with an unkind bar;

But now a ray of sunshine
Steals in, for the door's ajar.

Its wavering light reveals us
Such hidden secrets there,
That the dreams of wildest fancy
Have nothing to compare.

Pried open by force of Science,
To human minds unsealed,
The truths of Nature's text-book
Are one by one revealed.

That which the understanding
Of man but yesterday
Might wholly fail to compass,
To-morrow explains away.

Far into the boundless firmament
The eye extends its range,
While thousands of magnifications
Develop things small, strange.

Our voice's softest accent
Resounds through miles of space;
And far out-stretching metal arms
Touch every distant place.

The storm has lost its terror,
We hold its fire a slave;
To warm, to light, or fetch and carry,
Bondsman, our strength to save.

The sea gives up its treasures,
The land its fruit and gold;
The beauties of Art and Nature
Are placed in our hands to hold.

'Tis something, at least, that one should be
A soldier in this great fight,
And under the banner of Science
Do battle to set things right.

Though each be only an atom,
A tiny molecular part,
Of the Universe where truth is sought
In letters, and Science and Art.

Yet, how may a man do better
Than strive as best he can
To ease his fellow's suffering,
Or lengthen life's brief span?

Original Articles.

URIC ACID THEORIES.

A CRITICAL REVIEW, AND SOME ORIGINAL INVESTIGATIONS.

BY ALFRED C. CROFTAN, M.D.

Late Assistant Professor of General Diagnosis, College of Physicians
and Surgeons, Chicago.
PASADENA, CAL.

MOTTO: "*Je n' enseigne pas, je raconte.*"

—*Montaigne.*

This paper constitutes a preliminary report and incorporates the results of a series of investigations made with a view of corroborating experimentally the theoretic views advanced. The details of laboratory technic, of the many quantitative analyses of blood and urine that have been made, the description of animal experiments are reserved for future publication; reports of cases are also withheld for the present until more material of this kind shall have been gathered.* I am aware of these

*The treatment advised for uric acid lesions at the end of this paper is deduced from theoretic reasons exclusively; empiric findings are scanty so far. I have, however, a record of twenty-two cases with most positive results. This paper is in the nature of an appeal to clinicians and practitioners more fortunately situated than myself as to clinical material, to try the measures advocated and to furnish me with short reports of their cases and of the therapeutic results observed. I should like at not too far distant a time to be able to publish a report on several hundred cases collected in this manner, together with the laboratory find-

limitations, still my report may be given at this early date, "or else, to-morrow a stranger will say with masterly good sense precisely what we have thought and felt all the time and we shall be forced to take with shame our own opinion from another."

As existing uric acid theories are full of inconsistencies and absurdities, it seems necessary, before erecting a new theoretic structure, to remove, by a severely critical review, the debris of exploded theory that encumbers the foundation of solidly demonstrated facts.

All investigators seem to agree that somewhere and somehow in the body uric acid enters the circulation in excess and gives rise to the protean mass of symptoms we group under the name of uric acid lesions; they begin with the mass of functional disorders, the "masked" manifestations—headaches, migraine, vertigo, certain forms of eczema and of asthma, uricaria, sciatica and a host of others—and progress in severity to lesions like nephritis uratica and gout, which are accompanied by inflammation and necrosis and lead to destructive tissue-changes.

Two facts stand:

1. Uric acid is found in the blood of gouty subjects during the attack. Garrod¹ made this discovery in 1848; it has been corroborated a thousand times since; there seems to be no doubt, therefore, that gouty blood is comparatively rich in uric acid, whether this is the case during each period of the disease has not been definitely settled. Exact quantitative methods for determining small quantities of uric acid in the blood are wanting, so that, as we shall see later on, the presence of small quantities has evaded detection. Further, Garrod² himself found uric acid in the blood of cases of chronic lead poisoning and of nephritis; Salomon³, Haig⁴, v. Jaksch⁵, in pneumonia, and v. Jaksch⁶ in anemia, dyspnea and emphysema; the quantities found in these diseases were as large as those found in gout.

2. Uric acid in the shape of its insoluble salts is found in the concretions of gout, in the joints, the kidneys, in fact in every tissue of the body with the exception of the nervous system, which seems to enjoy an immunity. This has been known since 1797 (Wollaston). So pathognomonic are these uratic deposits for gout that we may say that wherever we find urates in concretions we have gout; but we can not invert this proposition because we certainly see typical cases of gout in which concretions of uric acid do not occur. As against the primary role of uric acid is the peculiar location of these concretions. Virchow⁷, in 1884, in a lecture on nephritis uratica—gouty kidney—showed that the inflammatory and necrotic processes were found in a different part of the kidneys and joints than the concretions; in gouty kidney the characteristic kidney changes begin in the cortex, while the uratic deposits are found in the parenchyma; in the joints the inflammation starts from the synovial membranes, while the concretions are found in the cartilages. However violent the inflammation may be, and though it lead to suppuration, uric acid is never found in the exudate. He further calls attention to the great similarity as to distribution and localization that exists between these urate deposits and the manifestly secondary deposits of calcareous material found in different diseases. He arrives at the conclusion that some substance circulating in the blood with an apparently selective affinity for certain membranes prepares a suitable nidus for the deposit of urates.

logs I have on record and my own cases. I shall most gratefully receive such reports and gladly give credit, in my publication, to my colleagues who will be kind enough to assist me in this manner.

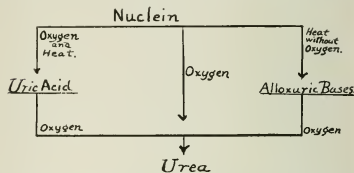
As against the theory that uric acid is the primary cause of the lesions attributed to its presence in the blood, we have the fact that it is essentially a non-toxic substance; the administration of large doses to a healthy animal or man produces none of the symptoms of acute uræmia and the exhibition of small doses for a long time is not followed by any of the disturbances commonly attributed to chronic uric acid poisoning. The excretion of uric acid and its relationship to gout and allied conditions has been exhaustively studied. The results are not uniform and no diagnostic clues are gained from the quantitative determination of the uric acid excreted; besides, a large part of the work done in this direction is essentially fictitious, because the method employed until recently, that of Hantz, is inaccurate and yields values for uric acid that are too low; but even later analysis made by Ludwig-Salkowski's method discloses very little of value (see below). Thus the evidence in favor of Garrod's old theory is scanty and insufficient.

Within the last decade a series of masterful investigations have been published on the chemical relationship between uric acid and nuclein; they seem destined to throw new light on the subject.

Based on the fact that in leucæmia a great increase in the excretion of uric acid is observed, and surmising an inter-relationship between the great katabolism of leucocytes and the large quantity of uric acid, Horbaczewski⁷ attempted the synthesis of uric acid from organic material containing large quantities of leucocytes. He made a mixture of spleen pulp and blood, heated it for several hours at body temperature (37-40 C.) in the presence of air and, in fact, obtained considerable quantities of uric acid. He surmised that the nuclein contained in the nuclei of the leucocytes furnished the material for the uric acid, and when he heated nuclein under the same conditions he succeeded in completely converting it into uric acid. This was a process of oxidation, for he found that if he excluded the air he generated no uric acid, but a peculiar group of substances instead, the so-called nuclein bodies—syn. xanthin bodies, alloxuric bases—which had previously been made from pus, internal organs and yeast nuclein by simple heating in the absence of oxygen (Kossel,⁸ Salomon⁹). They are basic substances, readily soluble in water; their chief representatives are xanthin, hypoxanthin, paraxanthin, adenin and guanin. On oxidation, then, nuclein gives uric acid; if oxidation is deficient or no oxygen is present the alloxuric bases are formed instead.**

This discovery overthrows the old doctrine that uric acid is a product of the oxidation of albumin, so to say, an intermediate product between it and urea. It is true we can oxidize uric acid into urea and we can oxidize albumin into urea, but we cannot oxidize albumin into uric acid; it was, therefore, merely an assumption without experimental foundation that uric acid is an oxidation product of albumin. Nuclein, on the other hand, can readily be oxidized into uric acid and further into

urea; the alloxuric bodies too can be oxidized into urea, but they can not be converted into uric acid by oxidation! The following diagram may illustrate this relationship:



Where in the body this oxidation process occurs is doubtful, whether in the tissues at large, in the liver or in the kidneys. Preponderance of evidence seems to point toward the kidneys, to judge from animal experiments; but conclusions in regard to the human uric acid economy drawn from observations on animals are quite unreliable, because great differences exist in this direction between man and the lower orders of animal creation (Salkowski,¹⁰ Chittenden,¹¹ Kumawaga,¹² Horbaczewski.¹³)

In order to understand the pathology of a disease it is necessary to understand the physiologic function, a perversion of which it represents. The function that is perverted is the nuclein metabolism. If oxygenation is sufficient we have the formation of uric acid; this is the normal process. Its perversion may be twofold, i. e., nuclein metabolism may be excessive or oxygenation may grow deficient; in either case we will have a decrease in the formation of uric acid and a corresponding increase in the formation of the alloxuric bases. We make this perversion responsible for so-called uric acid lesions. We maintain:

1. That uric acid is not the *materies morbi* in uric acid lesions.
2. That uric acid acts pathologically only from its tendency to form concretions.
3. That its formation, far from being a process of auto-intoxication, is a process of disintoxication.
4. That the decrease in the excretion of uric acid observed in some morbid conditions is not due to retention but to non-formation.
5. That the *materia peccans* in uric acid lesions are the alloxuric bases.
6. That in all so-called uric acid lesions we find an absolute increase over the normal of the *sum* of uric acid and alloxuric bases, and that this finding is of diagnostic value.

That uric acid is a non-toxic substance has already been emphasized, it is furthermore almost insoluble in the tissue juices; its salts are essentially insoluble. Not so the alloxuric bases; they are readily soluble and possess highly toxic properties. Rachford,¹⁴ Filehne,¹⁵ Paschikis and Pall¹⁶ are responsible for the statement that a large variety of nervous phenomena, migraine, increase in the arterial tension and arteriosclerosis, are attributable to xanthin, paraxanthin or hypoxanthin poisoning. As early as 1884 Gaucher¹⁷ discovered that the injection into the body of a healthy animal of small quantities of xanthin and hypoxanthin—both belonging to the group of alloxuric bodies—produces marked changes in the excreting cells of the kidney-parenchyma—néphrite epithéliak—Kolish and Tandler¹⁸ observed the same. My own investigations, recently completed and not yet published, made with a view of corroborating these findings,

** The term alloxuric bases is employed for the group of basic, soluble substances mentioned above; the term alloxuric bodies includes uric acid. The method employed for their determination is that of Krueger and Wulff (Zeitschrift für Phys. Chemie, vol. 20), viz.: 100 c.c. of urine that has been freed of any albumin it may contain, are heated to boiling, and 10 c.c. of a concentrated solution of sodium-bisulphite and 10 c.c. of a 13 per cent. of copper sulphate added; the mixture is then boiled for about five minutes and allowed to cool. The precipitate that forms is separated from the supernatant fluid by filtration and washed several times with distilled water of 50-60 C., then, while still moist, placed into a flask and the nitrogen it contains determined according to Kjeldahl's method. This gives the total of alloxuric bodies; in another quantity of the uric acid is determined according to Ludwig-Salkowski's method; the quantity of alloxuric bases is determined from the difference between the alloxuric bodies and the uric acid. This method seems complicated and tedious, but is exceedingly simple when the solutions are ready and the details of technic are once mastered.

positively demonstrate that both xanthin and hypoxanthin, when injected hypodermically in the strength of a 0.3 to 0.7 per cent. watery solution for a period of several months, produce granular degeneration of the epithelial cells lining the tubuli contorti and a proliferation of the endothelium of the intertubular capillaries. Albumin was invariably found after a period of three weeks. We may say, therefore, that the presence of minute quantities of alloxuric bases in the circulation is capable of producing marked anatomic kidney changes. We are indebted to Levison¹⁹ and others for the knowledge that granular atrophy of the kidney is a constant precursor of gout—the view that it is the result of a chronic form of auto-intoxication is substantiated by the fact that in lead-gout, i. e., in that form of spurious gout which is produced by the administration of small doses of lead for a long-continued time we find this same form of granular atrophy of the kidney, accompanying the systemic and arthritic manifestations (Charcot and Gombault,²⁰ Coen and Ajutolo²¹). We have compared the kidney changes of chronic lead intoxication with those formed in chronic alloxuric body intoxication; they are identical; and as the kidney changes of gout are identical with those of chronic lead intoxication, we may say that the organic kidney changes observed in uric acid subjects can be produced by alloxuric bases. We can chronicle the fact that uric acid injected into the circulation of healthy animals for a period of over three months produces no kidney changes whatever. To sum up briefly we may say, therefore, that uric acid, is incapable, as far as we know, of producing any of the symptoms of so-called uric acid poisoning when injected into the body of a healthy animal; the alloxuric bases can, on the other hand, firstly produce a series of functional disorders that are similar if not identical with those observed in the "masked" forms of uric acid intoxication, and secondly anatomic changes in the kidneys that are identical with those observed in gout, i. e., the severer forms of chronic uric acid poisoning.

The belief is prevalent that uric acid is never found in normal blood; on the other hand we know that uric acid in appreciable quantities is found in normal urine; the conclusion naturally to be drawn herefrom would be that the kidney cells convert "some substance" that is circulating in the blood into uric acid and excrete it; there are, however, quite a series of arguments against this assumption, and these we will discuss later on; a discrepancy exists somewhere. With a view of clearing up this point I undertook a series of investigations directed toward a determination of the quantity of uric acid in normal blood. In leucemia the above discrepancy seems particularly emphasized as we all know that the urine of leucemia subjects is very rich in uric acid, and that according to Salkowski,²² Landwehr and Bockendahl,²³ Stalldagen²⁴ and Salomon,²⁵ no uric acid is found in the blood. Koerner,²⁶ on the other hand, when he examined large quantities of leucemic blood, obtained by venesection, discovered considerable quantities of uric acid. This finding, coupled with the fact that the methods employed for the quantitative determination of uric acid in the blood were deficient and gave too low values (see above) and the knowledge that, owing to the great insolubility of uric acid, only very small quantities could at best be expected—the whole excretion during twenty-four hours rarely exceeds 1.2 grams in a normal subject—convinced me of the futility of looking for determinable quantities in a few cubic centimeters and led me to make analysis of larger volumes of blood. I have found uric acid in the blood of twelve normal subjects; in two the

blood was taken in bulk by venesection, in the other ten it was obtained from the operating-table. Corpuscles and serum together were examined, not the serum alone; I am at present occupied in analyzing serum and coagulum separately; whatever the result of this latter investigation may be, the fact, in my belief, is established that uric acid is found in normal blood. This makes the presence of uric acid in normal urine self-evident and relieves us of the necessity of hypothetically attributing a special uric-acid forming function to the cells of the kidney parenchyma; a leading argument against the assumption of such a role is the fact that, in no form of Bright's disease do we find a diminution of uric acid in the urine unless severely destructive changes have occurred in the kidneys; if the kidneys were concerned in the manufacture of uric acid, the severe damage they undergo functionally and organically in Bright's disease of all forms would certainly lead to a diminution of the excretion of uric acid. And here is one of the many fundamental fallacies that have been transmitted without question from medical generation to medical generation, namely, that uric acid is diminished or absent from nephritic urine; the statement is simply false, notwithstanding the publications of Bartels,²⁷ Wagner²⁸ and Fleischer.²⁹ Again their method—that of Heintz—was defective; if Ludwig-Salkowski's exact method is employed it will be found that normal values for uric acid will be registered in all but the last stages of Bright's disease. Frerichs³⁰, Van Ackeren³¹ and Stadthagen³² teach us this; my own analyses, executed in some fifty cases, corroborate their findings.

We quote and translate in a condensed form from V. Noorden, "Pathologie des Stoffwechsels," as follows:

Examinations of the urine for acid in gouty subjects date back only to the time of Garrod; his analyses of the blood and urine showed that a gouty subject as a rule excretes less uric acid than a normal subject, sometimes no uric acid at all is found in the urine. This diminution is especially apparent before the attack, and during the attack later on normal values are re-established. In the blood, on the other hand, the uric acid is increased whenever it is decreased in the urine. This is the basis of Garrod's historic theory of gout; the kidneys of a gouty subject do not excrete the uric acid as rapidly as it is formed; under a great variety of circumstances their faculty of excreting uric acid is generally diminished. Uric acid accumulates in the blood; as soon as the accumulation reaches a certain degree the attack begins; uric acid is deposited in the tissues and is later, by the aid of "inflammation" oxidized away again; the blood is thus purified of uric acid. For a time the formation and excretion of uric acid are balanced until the equilibrium is again disturbed. In chronic irregular gout the excretion of uric acid is permanently reduced. We must say that the painstaking uric acid determinations of Garrod and of his successors can hardly be considered valid to-day, as they were executed by the method of Heintz, which does not indicate an incalculably large part of the uric acid, sometimes none of it at all.

We must therefore, skip all the investigations of Lehmann, etc. (naming half a dozen others) who all corroborate Garrod's findings basing on determinations made according to Heintz and must consider only the more exact investigations of late years—too bad, that the arduous and conscientious labors of so many honest men must be considered valueless owing to their employment of a method the deficiencies of which were only recognized later.

A series of investigations made with Heintz' method even had made Garrod's findings doubtful; thus Bouchard found almost normal values in the time between the attacks and Lecombe almost always found normal values in gouty subjects. To-day (1893) the evidence in favor of abundant uric acid excretion is accumulating. The figures given by Ebstein and taken from Sprague's analyses, the figures of E. Pfeiffer and of L. Vogel—during the attack, between the attacks and in chronic atypic gout—do not differ materially from those found in healthy individuals and in a variety of non-gouty diseases.

The normal figures for a grown person on ordinary diet are given as from 0.7 to 1.2 gr. pro die; the values for uric acid in the urine of gouty subjects fluctuate within these boundaries.

From our own investigations then, and from the authoritative statements of competent writers, it appears that uric acid is a normal constituent of the blood and that the excretion of uric acid does not deviate from the normal in gouty subjects. If, however, we consider not uric acid alone, as has been done heretofore, but also the alloxuric bases—the interesting relationship of which to uric acid and to nuclein we have studied—typical excretory abnormalities of diagnostic and prognostic value will be found in “uric acid” cases, as follows: We have made a large number of quantitative determinations of the alloxuric bases—alloxuric nitrogen—in the urine of subjects suffering from gout or from other manifestations of the uratic diathesis and in every instance we have found an absolute increase in the excretion of these bodies over the normal; so that if we take the sum of uric acid and of alloxuric bases excreted we always find a typical aberration from the normal in the sense of an increase of this sum.

We are now in possession of the facts that are observed in uric acid cases; a number of old observations have been shown to be erroneous, a number of new ones have been added in their place. How, in the light of this new point of view does the normal nuclein economy of the body present itself, and how does a perversion of this function produce “uric acid” lesions? Finally, do the clinical laboratory findings correspond with the findings we should expect if our ideas are correct?

The excretion of uric acid and of alloxuric bases depends, as stated above, on the quantity of nuclein that is converted and on the activity of the oxidation processes. As the leucocytes, according to Horbaczewski and others, furnish the bulk of the nuclein, we may expect to find an increase in the uric acid and alloxuric bases, with an increase of the leucocytes. This is clinically borne out, as may be seen by the following examples: Certain drugs, as quinin, pilocarpin and atropin, that produce leucocytosis; certain infectious diseases that are accompanied by leucocytosis, leucemia in which the increase in leucocytes is excessive, also all produce a marked increase in the excretion of uric acid and of alloxuric bases. After eating we have a digestion leucocytosis and it is accompanied by an increase of the above substances in the urine, and in carcinoma of the stomach, when we have no digestion leucocytosis, this increase is not observed. Spleen extract injected into the circulation of a leucemic subject produces both a leucocytosis and an increase in the alloxuric bases. Examples of this kind might be multiplied. The second factor, the activity of the oxidation processes, clinically yields equally positive results. Wherever we have a decrease in the aerating surfaces of the lungs, as in emphysema, late stages of tuberculosis, etc., as manifested clinically by dyspnea and cyanosis, we have a decrease of the uric acid excretion and a corresponding increase of the alloxuric bases instead; the same applies to deficiencies in the hemoglobin economy and wherever we have cachectic and anemic states with deficient oxygenation we may expect to find a decrease in the excretion of uric acid and an increase in the alloxuric bases. In other words, with normal katabolism of leucocytes and normal oxygenation, we have a normal excretion of uric acid and a minimum excretion of alloxuric bases; with abnormal increase of leucocytes and normal oxygenation we have formation and excretion of uric acid to the limit of the individual oxygenation powers and alloxuric bases corresponding to the excess of nuclein katabolism beyond the oxidation powers. The maximum of excretion of alloxuric bases, finally, and a minimum of uric acid excretion is ob-

served where nuclein katabolism is excessive and oxygenation very much reduced.

Thus we see that normally all the nuclein is converted into uric acid, an innocuous non-toxic substance; a perversion of the normal function leads to the formation of alloxuric bases, the toxic properties of which we have described. Hence our statement that the formation of uric acid far from producing an auto-intoxication, on the contrary is a conservative process of disinfection. A true decrease in the excretion of uric acid is really never observed excepting where most destructive changes have occurred in the kidneys so that all the solids are mechanically retained—this occurs in the last stages of Bright's disease, in certain surgical diseases of the kidneys, probably also in those cases where serious interference with the innervation of the kidney leads to complete functional inactivity.

What, now, is the vicious circle which, by causing a perversion of the normal nuclein metabolism produces the symptoms of so-called uric acid intoxication? It would be a superfluous task to enumerate the many factors that lead to the “uric acid” habit; they have been given a thousand times in masterful monographs on the subject; we need not speak of the recognized influence of heredity, the mode of life—which without the hereditary taint probably cannot produce gout—overexertion, alcohol, lead, etc.; suffice it to say that the taint itself consists in a tendency to disintegrate a quantity of nuclein far in excess of the quantity normally disintegrated; in other words, in a uratic subject nuclein-katabolism is excessive. At first the normal oxidation processes are capable of converting almost all the katabolic products into uric acid which is duly excreted by the kidney, at the same time small quantities of the poisonous alloxuric bases are formed which, entering the circulation and passing through the kidneys, exercise the deleterious influence that they are capable of producing and that have been enumerated above. As the auto-intoxication continues vital processes fall below par and with them probably oxidation processes; anemic conditions develop functional nervous disturbances and minute anatomic changes in the kidneys, which may ultimately lead to the destructive changes detailed above. During this period uric acid is excreted in somewhat increased quantity as the oxidation processes are still up to par. As the disease progresses in severity, whether in the natural course of the affliction or aided by indiscretion in diet, alcohol, mode of life, etc., the perversion progresses too in severity, and more alloxuric bases are formed and excreted and the process of chronic poisoning goes on; it is in this period that in all probability the inflammatory changes are produced in the joints and kidneys and elsewhere, which prepare the suitable nidus for the deposit of the uric acid—in the form of urates—that during all this time continues to circulate in the blood. We have no positive knowledge that the alloxuric bases are capable of producing these inflammatory and necrotic changes in the synovial membranes, but we do know that some substance other than uric acid must produce them before urate deposits occur (Levison), and we know further that alloxuric bases do produce the kidney changes following which analogous urate deposits occur in those organs; the assumption, therefore, that they are responsible for the joint lesions too is very probable. In the last stages of gout, finally, where all organs are severely damaged, both the excretion of uric acid and the formation of urate deposits ceases, probably because no more uric acid is being formed owing to the cachexia and the lowering of oxidation processes. At this time

the alloxuric bases are excreted in large quantity.

This is, in outline, the probable pathogenesis of uric acid lesions. A careful elaboration of the detail is reserved for later publication.

Before closing I wish to call attention to two valuable diagnostic adjuvants and to some therapeutic outlines that seem of value.

In "uric acid" subjects a peculiar phenomenon is observed in the blood, which, incidentally, is a strong fact in support of the nuclein-katabolism theory. Around the nuclei of the leucocytes a series of blue-black granules is observed; the perinuclear basophile granulations of Neusser, that are vastly increased in number in uric acid cases; they are always suspicious of the uratic diathesis and probably consist of disintegration products of nuclein. (See Croftan³³.)

In the urine an increase of the sum of the uric acid and of the alloxuric bases will be found, and while quantitative determinations of the uric acid alone yield results that are diagnostically valueless, a determination of the alloxuric bases will yield valuable results, as they are always increased. Uric acid fluctuates within normal boundaries; the appearance of alloxuric bases, on the other hand, is always an indication of perversion of function in the sense of excessive nuclein-katabolism with insufficient oxygenation.

Therapeutics.—The hereditary taint exists; the general rules that empiricism has taught us as to mode of life stand with only those limitations that we must impose on all deductions we draw from empiricism. But in the fully developed condition in lithemia, gravel, the onset of gout, we have measures at our disposal that can counteract; we can exercise an intelligent prophylaxis and possibly effect a cure in many instances if we will follow the rational precepts that a recognition of the above theories dictates. Two indications obtain—a reduction in nuclein-katabolism and a raising of the processes of oxygenation.

To attain the first object everything should be avoided that will produce a leucocytosis, viz., a number of drugs should never be administered (see above) and certain articles of diet that we know produce leucocytosis—notably proteids—should be reduced. Nuclein-containing foods, such as internal organs, yolk of egg, are bad. Overeating is bad. Let it suffice to outline these points. In a true uric acid case there will be excessive nuclein-katabolism despite all we may be able to do, in the very nature of the taint, and restrictions in diet will not be of any permanent benefit; the chief point of attack will be in the direction of raising oxidation and it is here that I have had the good results that I mentioned in the footnote. A uric acid case should be treated as an anemic case in all measures employed to promote the oxygenation powers of the blood, i. e., the production of an increase in the red blood-corpuscles and of the hemoglobin and its chief oxygen carrier—iron. I administer iron in the forms and on the same rational principles that I would administer it to a chlorotic patient; arsenic is usually combined with it. I need not mention the many medical measures at our disposal to attain the above goal, nor the hygienic measures that will promote aeration of the blood; neither is this the place to critically discuss the merits or demerits of alkalies, salicylates, etc., and their efficiency as solvents and eliminators of poisonous products. The most striking results have been obtained in acute cases by inhalations of oxygen gas. On six occasions I did "cut" an attack of gout by giving the patient inhalations of oxygen repeated at short intervals; I can invariably relieve, if not cure, a uric acid headache, a

migraine, in short, lithemic attacks, by oxygen inhalations. The benefits derived from the procedure are surprising and most gratifying and the relief to the patient almost instantaneous. What oxygen will do in uremia—which in my view is due to alloxuric base poisoning, not to uric acid poisoning—I have not been able to try as yet. I have a record to-day of only twenty-two cases in which results were so positive that they merit chronicling—my clinical facilities are limited and it is for that reason and in order to know as soon as possible whether the principles I advocate, when more widely applied, will merit universal acceptance, I request my patient readers to send me short reports of cases on whom they may consider it worth while to try oxygen inhalations. It would be a boon indeed to humanity if in so simple procedures as are advised a cure could be found for one of the most wide-spread scourges of civilization.

BIBLIOGRAPHY.

- Garrod: Medico-Chirurgical Transactions, 1848.
- Karré: loc. cit.
- Salomon: Zeitschr. f. phys. Chemie II, 66, 1878.
- Hajz: Uric Acid, p. 49, London, 1862.
- Y. Jaksch: Frager Zeitschrift, p. 79, 1890.
- Virchow: Berliner Klin. Wochn. No. 1, 1894.
- Horbaczewski: Wiener Academieberichte, 1880.
- Kossel: Zeitschr. f. phys. Chemie, III, p. 284.
- Salomon: Zeitschr. f. phys. Chemie, II, 65.
- Salkowski: Virchow's Archiv, vol. cxvii, p. 570.
- Chittenden: Zeitschr. f. Biologie, vol. xxv, p. 503.
- Kumovaga: Virchow's Archiv, vol. 113, p. 102.
- Horbaczewski: Wiener Academieberichte, 1801.
- Rachford: Medical News, 1894, p. 21; Phila. Med. Jour. 1894, p. 691.
- Flehen: Du Bois-Reymond's Archiv, 1886, p. 72.
- Faschis and Fal: Wien. Med. Jahrb., vol. 21, p. 612.
- Gaucher: Revue de Med., 1888; Pathogénie de Néphrite. These Paris, 1886.
- Kalisch and Tandler: Monograph, Stuttgart, 1895.
- Levison: Zeitschr. f. Klin. Med., vol. xxvi, p. 317.
- Charcot et Gombault: Arch. de Phys. norm. et path., 1881, p. 124.
- Coen and Ajntelo: Zeigler's Beiträge, vol. 11.
- Salkowski: Virchow's Archiv, vol. 1, p. 174, 1870.
- Landwehr and Bockendahl: Virchow's Archiv, vol. Lxxvii, p. 561, 1881.
- Stadthagen: Virchow's Archiv, vol. cix, p. 390, 1887.
- Salkowski: Zeitschr. f. phys. Chemie, III, p. 77, 1878.
- Koerner and Mosler: Virchow's Archiv, vol. xxv, p. 142, 1862.
- Bartels: Handbuch der Nierenkrankheiten, Leipzig, 1877, p. 139.
- Frager: Morbus Brightii, Leipzig, 1865, p. 18.
- Fleischer: Archiv f. Klin. Med., vol. xxix, p. 129.
- Frerichs: Die Bright'sche Nierenkrankheiten, Braunschweig, 1851, p. 109.
- Van Ackeren: Charité Annalen, vol. xvii, 1892, p. 206.
- Stadthagen: Virchow's Archiv, vol. cix, p. 393.
- Croftan: Simplified Methods of Blood Examination, JOURNAL, xxii, p. 413, 1899.

RUBBER GLOVES OR GAUNTLETS.*

THEIR USE BY PHYSICIANS AND SURGEONS.

BY J. E. SUMMERS, JR., M.D.

SURGEON IN CHIEF CLARKSON MEMORIAL HOSPITAL, VISITING SURGEON DOUGLAS COUNTY HOSPITAL, OMAHA, NEB.

Of late an effort has been made by some of our best surgeons to lessen the dangers of infection of wounds by pointing out the great difficulties of rendering the hands of the operator and assistants absolutely free from all infection-causing germs, and for this reason urging the more general use of sterile rubber gloves by physicians and surgeons.

Numerous ways of washing the hands by surgeons, assistants and nurses have been recommended. Some of these methods, if done intelligently and conscientiously, are supposedly reliable, others are less reliable. When not safeguarded all are objectionable, because they have to include in their carrying out the personal equation of the individual. If the most experienced, worthy and reliable may forget at the critical moment, when of all others he should be the one to remember, what must be expected of the ones recognized by the courts, the one of ordinary skill and intelligence?

Greater still than the danger of infecting wounds by the surgeon, who uses ordinary diligence and skill, is the danger of infecting women after childbirth or abor-

*Read before the Nebraska State Medical Society, May 8, 1899.

tion, by the attending physician and nurse. I would venture the opinion that more women, during the child-bearing period, die or suffer invalidism from infection at the hands of the obstetric physician and nurse than from surgical operations, exclusive of those done for the relief of these conditions. The nature of the general practitioner's calling; treating all kinds of disease; coming and going at all hours; occasionally because of necessity or preference, doing "chores" about the barn, house or office; all this leads to a weaning away from the practice of ideal surgical cleanliness on his part, both as physician and surgeon. Besides it takes daily painstaking practice to successfully learn how to be surgically clean.

Let us grant for the sake of argument that a physician in attendance on the general run of cases, such as pneumonitis, pleuritis, typhoid fever, diarrhea, headache, indigestion, constipation and such like ailments is practically free from the danger of conveying these ailments to other patients. Can we say the same of all forms of ulceration, abscess, phlegmonous inflammations, erysipelas, tetanus, puerperal sepsis, diphtheria, scarlet fever, etc.?

Would you seek the services of one engaged in the treatment of such cases to confine your wives and daughters, even if you knew him to be a reasonably clean man? No and yes! No, if you knew that such a physician wore the same outer garments from house to house without donning a clean gown kept in the patient's house whenever he was brought in contact with infectious medical and surgical cases. No, if you knew that his hands were washed with a "lick and a promise" and a dash of deodorizer or antiseptic. No, if you could select a man with equal professional qualifications, and added to these a knowledge how and a practical desire to prevent infection through himself as a medium. Yes, if he were neat, painstakingly clean and used all known means to protect his patients from every source of contagion.

I know of no physician who would willingly cause unnecessary suffering and danger to those who have given him their confidence and placed their health and lives in his keeping, and it is in this spirit that I urge on you the habitual use of sterilized rubber gloves or gauntlets after cleansing the hands by some good method, in every case where your intelligence points out the advantage to your patient. *It should be the rule:* 1. In obstetric practice. 2. In operating on all forms of septic cases. 3. In the examination and treatment of all forms of septic, infectious diseases, such as erysipelas, septicemia and pyemia in which the hands come in contact with primary or secondary foci of infection—and this rule applies to the nurse also. 4. In operating on clean cases soon after operations on infected ones. 5. In abdominal sections following vaginal operations on the same individual, this may be reversed, wearing the gloves during the vaginal work, taking the gloves off or donning a fresh pair before beginning the abdominal work. 6. In examination of fresh wounds after recent examinations of or operations on dirty cases. 7. In all forms of rectal surgery.

It is a matter of choice under other circumstances whether or not gloves be worn. However, there is no question that there is less danger of infection where gloves are worn than when reliance is placed in an attempted sterilization of the naked hands. We have the testimony of two good American surgeons, Halsted of Johns Hopkins and McBurney of New York, as to the truth of the lessened dangers of infections when sterilized rubber gloves are worn by all persons taking part

in the conduct of a surgical operation. Many American and European surgeons now use rubber gloves.

An impervious cotton glove is perhaps quite as good as the rubber article—the ordinary cotton glove is not safe. During the six months I have been using the rubber gauntlets in my work my results have been more gratifying than formerly. Occasionally I have felt compelled to take off the gloves in order to carry out some technic more satisfactorily, but such acts seldom occur now. There is little difference in tactile sensibility between the naked fingers and those covered with a well-fitted, good-articled rubber glove. The advantages outweigh the possible, in rare instances, lessened tactile acuteness. One dozen pairs of the best quality can be bought for \$15. Sterilized glycerin may be used to lubricate the hands before drawing on the gloves. A glove that cannot be reasonably easily drawn over the hand after filling the glove with sterile water is too small. Vaseline or grease ruins the rubber. The gloves should be either boiled or wrapped in a towel and placed in a steam sterilizer. Lastly, rubber gloves are a protection to the physician and surgeon against infection.

SERTOTHERAPY.*

COMBINED WITH FAVORABLE CLIMATIC AND STRICT HYGIENIC SUPERVISION OF THE PATIENT—REPORT OF 106 CASES TREATED DURING 1898.

BY C. P. AMBLER, M.D.
ASHEVILLE, N. C.

The consensus of opinion among the conservative of our profession is now well established that medication in any form only plays a minor part in the treatment of pulmonary tuberculosis. It has been the experience of all that strict supervision of the patient as regards his hygienic life, including rest, exercise, diet, secretion and excretion, is first and foremost of the most vital importance and necessity. Secondary to the hygienic supervision of the patient we must admit that favorable climatic influences are without doubt our most tried and most trustworthy dependence, while medication in point of preference occupies third place.

Cases are continually being cited in which the improvement is attributed to one or the other, while our most favorable statistics are invariably presented by those at whose hands the greatest facilities for the application of all these methods are available.

In presenting this report of cases I wish to place myself on record as attributing the results obtained to these three factors in the order named.

We have insisted on the most rigid observations of all directions as to hygiene, following closely what has been found after several years' experience in institutional work to be the best for this class of patients. This has included particularly the avoidance of over-exertion; the regulation of diet; exercise and rest in bed; the observation of temperature; pulse; regulation of excretory functions; instruction as to the time for eating heaviest meals; time to elapse between meals; cold bathing; proper dress, fresh air; breathing exercise; taking of stimulants, sexual indulgence; and in fact all those little things which in themselves once occurring are nothing, but which often repeated, and carried to excess, have a marked influence on the well-being of our patient.

We can without doubt be pardoned for claiming that the climate of Asheville has been of valuable assistance.

* Presented to the Section on Practice of Medicine, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1898.

Almost without exception the patients have resided in boarding-houses and hotels, care always being taken to see that such place is conducted in a sanitary manner. It has been our policy to use as little medication by the stomach as possible, but we are free to admit that we have not hesitated to use any drug, inhalation, operation or application that a given case demanded.

I might again be pardoned while I state that I do not believe we have or ever will have a "specific" for tuberculosis. The very nature of the disease and the different circumstances concomitant with all cases render such a likelihood improbable. The past few years have developed radically new methods in the medication of this disease, the two most prominent methods, still, strictly speaking in the experimental stage, being: 1, the application of culture products direct to the patient according to Koch and his followers, and, 2, the carrying of these culture products through some lower animal, thus rendering the animal more or less "immune," and then applying the serum of this animal's blood to the patient.

After several years' experience, both in institution and private practice, with the culture product method, I am free to confess that I do not consider it without a certain element of danger, while I am equally well satisfied that better results, on the whole, followed its use than were obtained before its production.

My experience with the serum method extends over a period of two years, in a private practice devoted to tubercular diseases, and forms the basis for this paper.

It is not my intention to take up your time by citing the history and authorities of serotherapy, or to read in detail the report of the cases submitted. I shall limit my remarks to actual clinical experience, and present the tabulated report for the inspection of those so minded.

Owing to the unscrupulous mercenary methods and self-evident exaggerated reports of certain scientific and unscientific manufacturers, lauding their own products, the profession are rightfully becoming suspicious of any one advocating, using or producing sero-products. I have no ax to grind, am not before you as a manufacturer or producer, and am not here for the purpose of championing any producer's cause.

In the classification of this report I have not adhered to what many term the first, second and third stages. Under Class A we have recorded all those cases who (on commencing treatment) in our judgment had good chances for recovery. Under Class B occur those cases in which great improvement could be expected but an entire recovery was doubtful. Class C represents those cases presenting such complications or extensive involvement that but slight encouragement could be given.

Under this classification I have considered the patient's chances from all points of view: his physical condition, history, temperament, hygienic habits, surroundings, and his financial condition. This latter may seem a cold-blooded cause for classification, but nevertheless in all cases it becomes of importance. For instance, No. 46 Class A could not have been so classified (cavity being present), if she had not been financially able to refrain from work and conduct herself as one with a rapid heart must necessarily do if recovery is to be expected. Again, No. 98, Class C could have been placed in Class B in case she could have stopped work. As it was she was a charity case, compelled to work to pay her board, and did not do well.

Under each individual case the top line represents the condition upon commencement of treatment and the under line his condition on discharge or cessation of

treatment. Many cases in both B and C were compelled to stop while rapidly improving, on account of financial and domestic troubles, this undoubtedly giving a lower percentage of recoveries in these classes than was actually possible.

In summarizing the report we have kept the three classes separate and attempted to show average results in each class, believing that to average such cases without classification gives but little idea of what can be accomplished. The cases occurring under Class C were in most part poor cases, and were not treated with any idea of cure, but in an attempt to ameliorate suffering and distressing symptoms.

Class of Cases in Which Indicated.—The use of anti-tubercle serum would seem to be indicated in the incipient cases and more especially in those presenting a simple infection. As will be seen from the tabulated report, good results have also been accomplished in a majority of the cases classified under Class B, while in advanced cases we find we can often temporarily arrest progress of the disease and relieve distressing symptoms, but the remedy, even under most favorable circumstances, fails as everything must fail, to bring about recovery in such cases.

Contraindications.—Generally speaking, the use of anti-tubercle serum seems to be contraindicated in cases of miliary tuberculosis, in cases of extensive softening, high pulse, marked emaciation or decided hereditary history. This, I take it, means that these cases will, in all probability progress, no matter what form of medication is used. As a rule, the injections have not been given where the temperature reaches a maximum of over 101 degrees daily, our experience having been that such a temperature in an early case is invariably the result of some indiscretion on the part of the patient.

Advantages Over Other Forms of Medication.—The hypodermic injection of the remedy precludes the possibility of direct interference with the processes of digestion and assimilation. The absence of medication by the stomach is, with proper instruction as to diet, certainly to the advantage of the patient. We have less indigestion, less flatulency, less bowel complaint, and invariably build up a better appetite with corresponding power to better digest and assimilate a full meal of ordinary breadstuffs.

My experience corresponds exactly with that of Dr. J. Edward Stubbert of the Loomis Sanitarium for Consumption's, in that the bacilli disappear from the sputum long before the latter has entirely ceased. Relapses during treatment and after are much less frequent than under any other form of medication I have ever tried. This in itself means much when we stop to consider that in the usual course of tuberculosis the disease is one of relapses.

Allow me at this point to refer to Case 20, Class A, a patient who was under treatment for fifteen months. Two weeks after she was discharged as apparently cured she was taken down with typhoid fever and was treated by a brother practitioner in our city hospital, for six weeks, recovering fully from a severe case of fever, and without developing any untoward pulmonary symptoms. Her father now writes me, eight months later: "Nina is the picture of health, no cough, no expectoration, no fever, weighs more and is better than ever in her life"—a good test, you will admit.

Cases herein cited as "cured" have returned to their homes and in no instance, to my knowledge, has a case in Class A relapsed up to this time, notwithstanding

Number	Class	Initials	Age	How Long Sick	How Long Convalescing	Fuse	Cough	Tubercle Bacilla	Sputum	Cavity	Emphysema	Weight	Complex	Dullness	Perussion	Time Treated	Serum Used	Results	Remarks
58	B	WR	36	1 yr.	10 1/2	10 1/2	moderate	none	0	Small	0	160	Plenty (filled)	Entire left	7 mo.	78 cc	Cured	No relapse after 10 mo.	
59	B	AP	35	18 mo.	100 1/2	100 1/2	moderate	none	0	Small	0	220	132	4 to 3 rib ant.	5 mo	80 cc	gr. improved.	No relapse after 4 mo.	
60	B	TL	33	2 yr.	94	94	slight	3	0	Small	0	125	118	4 to 3 rib ant.	14 mo.	14 cc	gr. improved.	Back at work.	
61	B	R.M.	28	1 yr.	99 1/2	99 1/2	severe	10	0	None	0	110	154	L to 4 rib	14 wk.	45 cc	Cured	Back at work.	
62	B	C.B.	31	1 yr	98 1/2	98 1/2	moderate	0	0	0	0	240	155	L lower lobe.	12 mo.	140 cc	Apparently cured	Back at work.	
63	B	AB	30	11 mo	100	100	moderate	30	0	0	0	208	157	R lower lobe.	5 wk	20 cc	0.64 from acute	Back at work.	
64	B	C.S.B.	31	18 mo.	97	97	severe	3	0	Small	0	120	91	L to 3 rib ant	3 mo.	72 cc	Improved		
65	B	C.F.	42	14 mo.	94 1/2	94 1/2	moderate	10	0	Small	0	120	140	L to 1 rib	5 mo.	68 cc	sl. improved.		
66	B	H.A.	34	1 yr.	100 1/2	100 1/2	moderate	50	0	Yes	Yes	185	140	Both apex	6 mo.	108 cc	gr. improved.	Has been operated three times	
67	B	J.O.H.	54	4 yr.	98 1/2	98 1/2	slight	6	0	Yes	Yes	200	142	None	5 mo	84 cc	gr. improved.	Still under observation.	
68	B	F.H.W.	39	18 mo.	101	100	moderate	30	0	Yes	Yes	125	117	Both apex	4 mo.	64 cc	sl. improved.	Returned home and is still upon serum.	
69	B	C.L.A.	31	1 yr	94 1/2	94 1/2	slight	10	0	0	0	200	116	R to 3 rib	5 mo.	122 cc	gr. improved.	Still under observation.	
70	B	S.S.	24	4 yr.	98	98	moderate	10	0	Yes	Yes	140	124	R to 2 rib	2 mo.	28 cc	Improved	Back at work.	
71	B	C.S.D.	27	6 mo.	97 1/2	97 1/2	severe	10	0	0	0	155	124	L to 4 rib	12 wk.	72 cc	Improved	Back at work.	
72	B	J.F.C.	29	6 mo.	100 1/2	100 1/2	moderate	10	0	0	0	180	135	L to ant.	11 mo.	82 cc	Apparently cured	Back at work.	
73	B	H.M.	34	3 yr	94 1/2	94 1/2	moderate	40	0	Yes	Yes	105	131	L to 5 rib ant	8 1/2 mo.	114 cc	gr. improved.	No relapse after 9 mo.	
74	B	J.M.	37	4 yr.	100 1/2	100 1/2	severe	30	0	Yes	Yes	150	143	L to 5 rib ant	5 mo.	60 cc	Improved	Back at work.	
75	C	T.M.	29	1 yr.	102	116	severe	10	0	Yes	Yes	80	118	L to 3 rib ant	5 wk.	12 cc	Worse	Sent home on account of acute heart action.	
76	C	M.W.	30	1 yr.	102	112	severe	10	0	Yes	Yes	75	100	L lower lobe.	2 wk	20 cc	Died - from pneumonia.	Brought in by over-exception.	
77	C	J.D.S.	33	13 yr.	101 1/2	101 1/2	moderate	20	0	Yes	Yes	160	148	R to 4 rib ant	5 mo	30 cc	gr. improved.	Back at work.	
78	C	R.S.	19	6 mo.	101 1/2	101 1/2	severe	50	0	Small	0	105	110	R to 4 rib ant	6 mo	68 cc	gr. improved.	Back at work.	
79	C	M.S.	16	12 yr.	102 1/2	100	moderate	10	0	Yes	Yes	70	100	Whole left	6 mo	80 cc	Improved	Skinner 6 mo later	
80	C	O.S.	33	3 mo.	103	100	severe	300	0	Yes	Yes	148	159	R to 4 rib ant	3 mo	92 cc	Stationary	Since grown worse.	
81	C	J.O.	22	1 yr	102 1/2	112	moderate	200	0	Yes	Yes	110	121	R to 4 rib ant	3 wk	18 cc	Worse		
82	C	C.C.	19	3 yr	102 1/2	100	severe	30	0	Yes	Yes	50	100	Entire left	6 mo	80 cc	Stationary	advised to go home, died.	
83	C	E.C.	30	2 yr.	98	98	severe	75	0	Yes	Yes	140	141	L to 4 rib ant	2 mo.	96 cc	gr. improved.	Returned home on account of domestic trouble	
84	C	L.W.	22	2 yr.	106	92	severe	20	0	Yes	Yes	130	135	R to 1 to 3 rib ant	2 mo.	40 cc.	Stationary	Sent home, since died.	

85	C.S.	01	6 mo	102	112	Severe	100	0	365	365	365	365	140	100 gm proph. daily	R to 4 vib ant.	gr. improved.	Physician. Back of work, sent home for improvement. Gave 700 mgms. later.	
86	F.K.	26	18 mo	102	110	Severe	50	365	365	365	365	135	135	100 gm proph. daily <td>R to 2 vib ant. <td>3 mo</td> <td>90 cc</td> <td>Physician. Back of work, sent home for improvement. Gave 700 mgms. later.</td> </td>	R to 2 vib ant. <td>3 mo</td> <td>90 cc</td> <td>Physician. Back of work, sent home for improvement. Gave 700 mgms. later.</td>	3 mo	90 cc	Physician. Back of work, sent home for improvement. Gave 700 mgms. later.
87	C.T.P.	33	3 yr	102	110	Severe	30	365	365	365	365	120	135	100 gm proph. daily <td>R to 2 vib ant. <td>1 mo</td> <td>20 cc</td> <td>Worse</td> </td>	R to 2 vib ant. <td>1 mo</td> <td>20 cc</td> <td>Worse</td>	1 mo	20 cc	Worse
88	C.L.B.	30	1 yr	102	112	Severe	50	365	365	365	365	90	120	Tab. laxant	L to 3 vib ant	6 wk	40 cc	Worse
89	C.M.H.	33	4 yr	101	120	Severe	20	0	365	365	365	180	150	Tab. laxant	L to 3 vib ant	3 mo	100 cc	gr. improved.
90	C.M.H.	34	12 mo	100	96	Severe	25	365	1636	368	0	105	105	Tab. laxant	entire left	2 mo	32 cc	Worse
91	C.E.F.	24	5 yr	91	92	Slight	30	0	365	0	365	130	130	Tab. laxant	L to 4 vib ant	4 mo	100 cc	improved.
92	C.W.H.	31	7 yr	101	91	moderate	20	365	0	365	0	120	110	Tab. laxant	L to 5 vib ant	6 mo	80 cc	Stationary
93	C.O.F.	24	8 yr	102	100	moderate	30	365	365	365	365	100	100	Tab. laxant	entire L	3 mo	50 cc	improved.
94	C.F.H.	24	6 mo	102	110	Severe	20	0	365	365	0	100	145	Tab. laxant	R to 3 vib ant	4 mo	102 cc	Worse
95	C.W.C.	34	9 mo	102	112	Severe	60	365	365	0	365	120	135	Fluorid.	R to 4 vib ant.	11 wk.	60 cc	gr. improved.
96	C.M.E.F.	47	14 mo	103	116	Severe	40	365	365	365	0	80	134	Fluorid. then camp	entire right	15 mo	112 cc	Stationary
97	C.S.C.	26	2 yr	101	92	Severe	30	365	365	365	365	120	130	Bowel trouble	L to 3 vib ant	4 mo	78 cc	gr. improved.
98	C.L.F.	36	7 yr	99	80	Severe	35	0	365	0	365	80	110	Fluorid. then camp	L to 4 vib ant	12 mo	95 cc	Worse
99	C.O.P.	26	8 mo	102	96	Severe	60	365	365	0	0	200	125	Tab. laxant	L to 4 vib ant	7 mo	125 cc	improved.
100	C.B.M.	24	2 yr	101	100	Severe	30	365	365	365	365	110	110	Get Tub. antisept.	L to 4 vib ant.	6 wk	46 cc	Worse
101	C.C.	24	2 yr	101	112	moderate	20	365	0	0	365	0	7	Heart murmur	L to 4 vib ant	6 wk	42 cc	Worse
102	C.K.	25	2 yr	102	100	Severe	10	0	365	0	365	111	111	Indigestion	entire left	9 wk	63 cc	improved.
103	C.E.R.	43	7 yr	99	96	moderate	30	365	0	365	0	95	118	Indigestion	entire left	11 wk	82 cc	gr. improved.
104	C.J.H.	49	3 yr	99	100	moderate	30	0	365	0	200	134	Middle ear dis.	R to 2 vib ant	11 mo	96 cc	Stationary	
105	C.W.W.	26	1 yr	99	108	Slight	10	0	365	0	0	115	130	Fluorid.	R to 4 vib ant	6 mo	150 cc	gr. improved.
106	C.T.H.	31	3 mo	99	84	Slight	10	0	365	365	365	140	136	Fluorid. doming	entire L	6 wk	42 cc	Worse

Class A	Expectation	Disappeared	in	35	76	Average	Class B	Expectation	Disappeared	in	3	14	Average	Class C	Expectation	Disappeared	in	18	56	Average
Bacilli	Disappeared	11	4	100	100	100	Bacilli	Disappeared	11	3	100	100	Bacilli	Disappeared	11	18	56	100	100	100
Weight	Increased	18 lb.	min. 0.13 in	44	76	130	Weight	Increased	18 lb.	min. 0.13 in	26	93	130	Weight	Increased	18 lb.	min. 0.13 in	22	67	113
Uter. Capacity	Increased	18 cc	to 20 cc	46	100	150	Uter. Capacity	Increased	18 cc	to 20 cc	11	27	93	Uter. Capacity	Increased	18 cc	to 20 cc	11	25	78
Temp.	Normal	18	to 18	46	76	45	Temp.	Normal	18	to 18	11	17	41	Temp.	Normal	18	to 18	11	10	31
Ant. Serum Used	max. 205 cc	min. 30 cc	35	76	86 cc	Ant. Serum Used	max. 205 cc	min. 30 cc	6	21	75 cc	Ant. Serum Used	max. 150 cc	min. 30 cc	0	0	71 cc	0	0	0
Apparently Cured	1	20	1	2	1	Apparently Cured	1	20	1	2	1	1	Apparently Cured	1	20	1	2	1	2	1
Employed	1	2	1	2	1	Employed	1	2	1	2	1	1	Employed	1	2	1	2	1	2	1
Worse	0	0	0	0	0	Worse	0	0	0	0	0	0	Worse	0	0	0	0	0	0	0
Died	0	0	0	0	0	Died	0	0	0	0	0	0	Died	0	0	0	0	0	0	0

CLASSIFICATION.—Class A represents those patients who, after thorough physical examination, microscopic examination of sputum, consideration of family and personal history, temperament, tractability and financial ability to refrain from work, was, in our judgment, supposed to have excellent chances for recovery. Class B represents those who after the same examination, we could expect to see improve, but whose recovery was doubtful. Class C represents more advanced cases. Nothing but amelioration of symptoms and distress was promised. This class was largely composed of charity patients.

many are in unfavorable locations and others are back at work. Whether a certain degree of immunity has been established, or whether the elimination of the tubercular products has been more certain, the fact remains, *serum patients do not relapse like those treated with creosote and other allied drugs.*

Furthermore, during the entire time that these 106 cases were being treated, but 2 patients had hemorrhage serious enough to warrant calling a physician, while 55 gave a history of having bled prior to the time of beginning treatment; 1 of these 2 above referred to—No. 55, Class B—was caused by violent exertion in a young man repeatedly cautioned and later ordered out of the office for disobeying directions, and the other occurred seemingly without provocation in a young man who was so slightly affected that his parents never believed there was anything wrong with his lungs.

Night sweats have been more easily controlled. During the weeks and months necessary for the contraction and cicatrization of small cavities, *the patients have remained free from distressing symptoms and have not shown the symptoms of relapse or involvement of new tissue.*

As a rule, I have observed that the expectoration materially increased during the first two weeks of treatment, and then rapidly diminished in the favorable cases. The expectoration has rapidly changed in character as well as in amount, becoming lighter, losing its pus character, and finally appearing as a gelatinous mass. In the far advanced cases or in those with extensive cavity formation, *this influence on the expectoration was usually negative.*

Length of Time to be Administered.—The injections have been continued in those cases reported as "cured" for several weeks, and in a few cases for months, following the disappearance of tubercle bacilli, the microscopic examination being frequently made during this time. In this class of patients no unpleasant symptoms have followed the long continued use of large doses. Of the thirty-five reported as "cured" in Class A, the average length of time the injections were given was four and five-tenths months, maximum fifteen months and minimum seven weeks.

Accidents Following Administration.—In about 50 per cent. of all cases treated a local erythema occurred over and around the point of injection, during the first week. In a small percentage this erythema became more general, and in three cases was well marked from the waist to the feet. After the first week no such local or general redness of the skin followed the injection. Local swellings at the point of injection, and occasionally at nearby joints, pain in the joints and itching of the skin were frequently complained of for the first few days. When enlarged lymphatic glands have been present, especially the cervical and axillary glands, these have invariably been found to enlarge and become tender during the first two weeks, and if not easeless, they have then gradually diminished in size and finally disappeared entirely. Especially was this true of Case No. 3, Class A, a child 7 years old, with slight consolidation, and when first examined presenting distinctly enlarged cervical and axillary glands. This boy fully recovered, the glands disappeared, and he has been so well this winter that his physicians advised his parents that it was not necessary for him to go South this year. This improvement in glandular involvement has been observed in all three classes.

The symptoms mentioned above are not serious, only annoying to the patient, and when he has been posted as

to their possible occurrence he has made but little comment when arising. The only really serious symptom observed by the writer has been a sudden attack of syncope occurring in from one to five minutes following injections and lasting about two minutes. This has occurred in 5 per cent. of all cases, being accompanied by flushed face, followed by pallor, weak heart, pain in the back, nausea, and in one case violent vomiting. This, I believe, is due to the injection of the serum into a small vein, and not, as some have suggested, to the too often repeated injection at the same point. This distressing symptom passes off in a moment on placing the patient in a recumbent position and, so far as I can determine, has never been detrimental to the patient. In one case, No. 52, Class A, a man weighing 180 pounds, with good heart, this symptom was repeatedly observed.

On account of these local and systematic symptoms I have made it a rule to begin with a small injection .2 c.c., gradually increasing to .5 c.c., remaining here a few days and then gradually increasing to 1 c.c., rarely exceeding 2 c.c. at a dose, the injection being given daily in the loose skin above and back of the crest of the ilium; using a c.c. graduated syringe with the smallest size Green hypodermic needle. The use of such fine needles for serotherapy compels one to give the greatest possible attention to his instrument in order to keep the needle patent; hence the fine needle is not only more agreeable to the patient, but more liable to be rendered aseptic in order to be of service.

Serums Used.—Serums from three different manufacturers were used, the whole amount being approximately 8000 c.c. Having in the course of a very few months observed decidedly the best results from the use of Fisch's antiphthisic serum T. R., the others were discarded; altogether about 6000 c.c. of Fisch's serum were used. In justice to the manufacturers I must say that this product has invariably proven stable when properly handled, in but two bottles was cause for complaint found, due in both instances to infection from loosening of the stopper during transit.

Remarks.—The use of antistreptococic serum in conjunction with antitubercle serum, in my hands has not proven of much benefit. Streptococci have disappeared in favorable cases without it, and in advanced cases have remained, no matter whether it was given or not. It has, however, in several cases seemed to temporarily do good.

I would particularly call attention to the large gain in vital capacity of these cases, the average gain in Class A being 54 cu. in., with a maximum of 80 cu. in. This gain is in great part due to the use of the pneumatic cabinet, which instrument has been used in all cases of diminished capacity, where high fever or other contraindication was not present.

Summarizing the 106 cases reported, without regard to classification we find:

Cough and expectoration disappeared in	38, or 36 per cent.
Cough and expectoration diminished in	83, or 78 per cent.
Bacilli disappeared in	49, or 46 per cent.
Bacilli decreased in	61, or 64 per cent.
Physical signs improved in	80, or 84 per cent.
Weight gained in	92, or 87 per cent.
Vital capacity gained in	98, or 92 per cent.
Temperature and pulse became normal in	71, or 67 per cent.
Average time treated 4.9 months.	
Average amount serum used 77 c.c.	
Apparently cured (no relapse)	41, or 39 per cent.

Greatly improved	31, or 29 per cent.
Improved	14, or 13 per cent.
Stationary	7, or 6.6 per cent.
Worse	11, or 10 per cent.
Died	2, or 1.8 per cent.

In conclusion, I wish to reiterate what I have said concerning medication occupying third place in the treatment of pulmonary tuberculosis, and do not place myself on record here unequivocally as a convert to serotherapy. I have been in no hurry to report my cases treated and have only presented this paper after having had eighteen months' time for observation: the conclusion being that while serotherapy for tuberculosis in general is still in an experimental stage, the results obtained from its use in the incipient cases certainly justify one in its continued use.

With the permission of the Chairman of this Section I propose next year to follow up this report with a detailed report giving the then present condition of all cases now classified under A and B. The C cases, with few exceptions, I expect will die during the coming year.

THE SUBJECTOSCOPE.*

OR SOME SUBJECTIVE VISUAL SENSATIONS.
BY HAMILTON STILLSON, M.D.
SEATTLE, WASH.

In devising an instrument for the study of subjective visual sensations an attempt is here made to accomplish two objects: to settle some disputed questions concerning the nature of such sensations, and 2, to furnish a practical means for the autodiagnosis of disturbances or defects in the field of projection.

It is well, however, at the beginning of this paper to understand that Zehender's definition of subjective visual sensations is the accepted one. His definition is at variance with the definitions given in the Century, Standard and Foster's medical dictionaries, but it is nevertheless the most rational. For the production of subjective visual sensations—"Gesichtsempfindungen"—Zehender's definition requires the presence in the interior of the eye of real corporeal bodies.

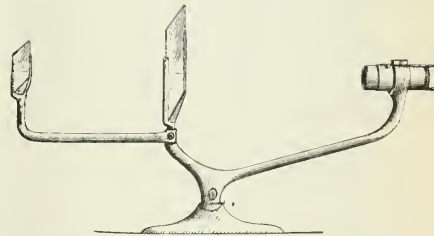
Subjective visual sensations, therefore, differ from objective visual sensations in the fact that the latter owe their origin to corporeal things outside of the eye; they differ from hallucinations, "visions," and the like, since the latter owe their origin to disturbances of the central nervous organism and not to changes in the eye.

Phosphenes, electric stimulant flashes, etc., belong to subjective visual sensations since they owe their origin to a disturbance of the real elements of the eye, but they ought to belong to a sub-class of visual sensations, the main class being illustrated by *muscæ volitantes*. This latter is perhaps the most typical and familiar example of subjective sensations of the main class. A further refinement ought also to be made by classifying these sensations into the classes physiologic and pathologic. And while the instrument described in this paper, and which, for want of a better name, let us call the "subjectoscope," deals with both the latter named classes, it is toward physiologic subjective visual sensations that our principal experimentation will be directed.

It may be considered necessary in this introduction to apologize for the use of instrumental aids in examining visual sensations. Zehender prides himself on the fact that under favorable conditions he can experience all the known visual subjective sensations without instrumental aid, but some of the favorable conditions are "a snow bedecked landscape," "the half waking state in the

twilight," "long and intense practice," etc., some of which conditions are always absent from some of us, and the majority of them render the daily office examinations of patients' fields of vision impracticable. Besides there is usually no gain in declining instrumental aid while viewing the field of projection. It is not any more to our credit or advantage by intense practice to train our eyes to see the Purkinje figures without aid than to look at these figures in a dark room by the aid of a moving flame held near our eyes. It was surely no detraction for Helmholtz to say that the easiest way to view *muscæ volitantes* is to look at a lamp flame through a pinhole in a card. Moreover, in studying the field of projection of patients most patients require considerable aid in viewing strange images whose cause they cannot understand, the knowledge of whose shape they would impart to the oculist.

The instrument in question was suggested to the writer on viewing a blue sky through a piece of blue glass. By such means the "fliegende mücken" (Purkinje), or rapidly moving bright globular bodies in the interior of one's own eye may be readily observed by anyone. I am not aware that any previous writer has called attention to the use of blue glass in this connection, though Jullien¹ discusses the question of recognition of fading or abortive syphilitic macules by viewing the suspected skin through blue glass, a diagnostic resource first announced by A. Broca in 1893. The instrument, however, is arranged so that other colors for the background besides that of blue may be used.



The instrument consists of a three-inch lens mounted in a short tube on a suitable stand having a clamp at the proximal end into which diaphragms having pinholes of two or three sizes may be inserted, and having, eighteen inches from the distal end, a clamp for holding plates of plain and colored glass and white cardboard, and having beyond the plate a mirror mounted on a swinging arm so arranged that the mirror may reflect light through the colored glass directly through the tube and lens to the eye, or, by swinging the arm, light may be reflected on white cardboard which may then be viewed by reflected light.

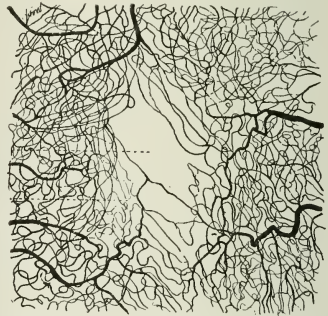
Experiment 1.—Remove the pinhole diaphragm, place the mirror in position for reflecting into the eye the blue sky through a layer of homogeneous blue glass, place the eye near enough to the lens that the light coming through the lens will be uniformly blurred or diffused. A homogeneous blue field will be disclosed, and on that blue field will be observed bright moving points globular in shape, having one side shaded by a crescentic shaped shadow. These bodies on the blue field will look blue but will stand out in relief, the center of each having a bright reflex. They flit through the field like

flying gnats, but appear most distinct at a certain plane in the field of projection and resemble in that respect the corpuscles of the blood when seen in a frog's tongue under the microscope. That is to say, they come into focus where they are distinct and then pass down or up out of focus where they disappear. Occasionally a perfectly blank one will flit into view, and some are larger than others. Some will swim more rapidly and circle more swiftly than others do. The vessels through which they flow remain all the while invisible, though by fixing the attention in a certain direction one may seem to discover the course over which as a rule some of the bodies pass.

What are these flying gnats—"fliegende mucken"? Purkinje², who, though but a boy in poverty and obscurity, in 1819 made himself at once famous by describing these objects and also by describing the appearance of the shadow of the retinal vessels in one's own eye, saw them without instrumental aid by looking into a cloud covered sky. He was unable to satisfactorily account for them; and it appears to me that some confusion has arisen not only with Purkinje, but also with Zehender³ in confounding these bright moving bodies with the bright waving bodies mentioned at the end of this experiment. Zehender thinks these "fliegende mucken" are reflected light from the red blood-corpuscles in the choroidal vessels. He thinks that as the corpuscles move in the choroidal vessels light reflected from these bodies comes forward and falls on the rods and cones of the retina, thus forming their image. He offers in proof of this fact that these floating bodies are seen best and most numerous in the center of the field, where the rods are most numerous and where the retinal vessels are smallest in size, but a number of facts disprove his theory. One of my patients with rupture of the choroid and with no rupture of the retina was able to see these flying bodies very distinctly in the field corresponding with the rupture of the choroid. The blow against the eyeball had been received near the inner canthus. There was a rupture of the choroid, 2dd. in length, crescentic in shape, the center of its convexity touching the outer edge of the disc. The other rupture was 3dd. in length, the center of its curve being in the region of the macula. The white sclera could be seen through the rupture, and the broadest portion became occupied by cholesterolin. This patient, though possessed of two scotomata of crescentic shape could see these "fliegende mucken" throughout the entire center of the field of vision, the flying bodies seeming larger and more numerous at the portion of the field occupied by the scotoma than in any other portion of the field. The scotoma looked black on the blue background, and grayish white on a dark background. These rapidly moving bodies, therefore, must be produced by something in front of the retina, and if it be urged that in such a case they should produce nothing but a dark shadow like the moon in a solar eclipse, the reply may be given that the shadows of the vessels of the retina when viewed through a projectoscope are like transparent glass tubes having a shadow line along one side, giving a relief to the shadow of the vessel, so to speak. The apparent relief of the shadow of these moving bodies may be thus accounted for, and to account for the fact that one is occasionally blacker and larger than its fellows we have only to imagine one more opaque than the others. Surely Zehender's contention cannot explain the presence of the black ones. Black ones will not reflect the light. Moreover, these flying globular bodies are too large for blood-corpuscles, and they are too widely

separated from one another to be blood-corpuscles in the retinal vessels. Their rate of flow is greater than that of the blood current in the capillaries. The diameter of a blood-corpuscle is .0072 mm., which is one-fourth the diameter of the capillaries. By viewing the smallest capillaries, as in Experiment No. 2, and comparing their diameter with the apparent diameter of the moving bodies, projecting them as nearly as possible to the same distance away, it will be seen that the apparent diameter is more than one-fourth more than the apparent diameter of the capillaries.

What are they then? Helmholtz⁴, in his "Physiological Optics," thinks they are fat lymph-corpuscles. His opinion must bear great weight, but Helmholtz thinks that these lymph-corpuscles are visible only in the main trunks of the retinal vessels. The region of the macula, which alone views these moving bodies, has no large blood-vessels in the retina.



In Experiment No. 6 an attempt is made to show the lymph-spaces in the cornea, in Experiment No. 5, the lymph-spaces in the lens, and in Experiment No. 3, the lymph-spaces in the vitreous. (Sec. 5, p. 251, and 6, Vol. i, p. 210.)

Would it not be a more reasonable assumption to say that these "fliegende mucken" are the shadows of lymph-corpuscles, as they pass in the lymph-channels of the eye in such a plane as can be best viewed by the rods and cones?

We cannot close this reference to the "fliegende mucken" without referring also to Zehender's claim that they can be viewed by him with his eyes closed and in the dark. If they could be viewed in such a case, my contention that they are the shadows of the lymph-corpuscles would come to naught. Still, if they could be seen in the dark, Zehender's contention also would come to naught, for in that case they could not be reflections of the corpuscles of the choroid. What Zehender sees in the dark with his eyes closed is not the "fliegende mucken," although they resemble closely the "fliegende mucken" in some respects. Perhaps every observant person has noticed that on waking from profound slumber and gazing into a dark room numerous small points of silver-white light arranged somewhat symmetrically, grouped in the center of his field of vision, will wave and flicker before him. They do not flit and fly, but each waves and flickers. On closing the eyelids these points will continue for a time in the same location and with the same color and shape as before. But these wav-

ing points are not globular. They have no distinct outline. They do not move about the field like detached bodies, do not flit nor fly, they simply glint and glimmer and wave. What are they? I think they are localized, intensified idioretinal light. I think they are of the nature of minute localized points of "phosphORIZATION," to coin a term; they are produced in all probability by the pressure of blood in the choroidal vessels against the rods and cones somewhat in the manner of phosphores produced by the finger against the eye. They appear only when the ocular vessels are suddenly and unusually engorged with blood, and disappear when the engorgement passes away.

The above-described waving points are not flimmer scotoma, scotoma scintillans, amaurosis partialis fugax, teichopsie, though this latter scotoma may be seen in the dark with the eyes closed. In the flimmer scotoma the glimmering begins in the center of vision and spreads outward like an enlarged circle, except that the line that forms the circle is zigzag and there is amaurosis over the portion of the field that the circle has passed. Moreover, flimmer scotoma seems to be more a symptom of disturbances of nutrition of the central nervous organism than of local disturbances of the eye. It is nearly always accompanied by a sense of vertigo. (See reference No. 7, p. 61.)

Experiment No. 2.—Insert the blue glass in its position as before, place the diaphragm with the small pinhole into its place, reflect the light of the sun, or an acetylene-gas flame placed twenty feet or farther away, look through the pinhole attentively and move the diaphragm gently to and fro, or move the head to and fro, or move the mirror to and fro slightly and more or less rapidly. Fine branching lines like transparent roots of a plant will be seen converging from the periphery, many of them anastomosing, meshing themselves around the center of the field of vision. In a yellow light these branching lines are pinkish-white with a bright line along their center and dark lines along their edges. On a blue background they are clearer cut and more distinct, but blue in color. They are stationary when the eye is still, though they seem to move with the movements of the disc or of the source of light. They seem larger when the source of light is at a distance, or when they are projected into the distance or when the pinhole is large. They seem smaller, though more distinct, when the pinhole is small. W. C. Ayres* (Bd. xii, p. 29) who followed up Helmholtz' suggestion, found that these lines seem larger when the iris is under the influence of a mydriatic. What are these lines? They are undoubtedly shadow images of the blood-vessels of the retina. Purkinje was the first to describe them, in 1819 in this now famous thesis. His first described method for seeing them was to look at a cloud-bedecked sky and wave before the eyes the outstretched fingers of the hand, to and fro. To me they seem quite indistinct by this method. His second method was to wave a candle-flame near and below the eye while gazing into an otherwise darkened room. The lines look larger by this method, though they resemble mere black shadows and only the large blood-vessels can be seen in this way. Modifications of the above mentioned experiments have been made by J. Muller, Ayres⁸, Fick¹⁰, Becker¹² (Bd. xxvii pp. 1 to 20; Bd. xxvii, 1881), Dimmer¹¹ (Bd. xiii, p. 82), Meissner³, Reute¹⁴ (Bd. i, p. 558) and others. For instance, Helmholtz was, I believe, the first to render the definition of these lines distinct by searching for them through a small pinhole in a moving card, while looking at a lamp flame; and he was the first

to observe that the larger the pupil or hole in the card the larger the vessels would appear, though less distinct.

W. C. Ayres* (Bd. xiii, p. 13) used the bright reflection from a gold ring or a silver spoon flashed near the eye; but in the author's experience the vessels can be traced more nearly to the macula and can be made to appear with more vivid distinctness by the use of the blue glass in the projectoscope.

So far as I can discover, no previous writer has mentioned the fact that these blood-vessels may be seen with the eyes closed. Face the sun, close the eyelids, turn the eyes upward, and forcibly and rapidly turn the eyes repeatedly to the right and to the left. There will appear on the red background dark branching lines that resemble the lines seen in the Purkinje candle flame experiment. The main trunks of the blood-vessels are brought into the field of projection better in this way than in the other experiments mentioned.

Experiment 3.—Remove the blue glass, focus the light to the interior of the eye, insert the pinhole disc, then without oscillating the diaphragm, direct the eye and if necessary the pinhole just off the point of light. Against the background of half illumination curved and twisted channels anastomosing can be seen. These channels lie in different layers and by slightly moving the eye to and fro then holding it still a swinging motion can be imparted to some of the different layers. By means of this movement a parallax of the different layers can be made out. One of these layers seems to me to be always stationary. They are seen only in the center of the field. Their caliber is of about equal diameter throughout. Their course and the walls of the channels are quite distinct. That they are not on the surface of the cornea is readily proven by blinking the lids until a little of the oil or tears is deposited upon the cornea, then by simply moving the diaphragm the parallax of the tears and the channels can be made out. All the channels will thus be found to lie behind the cornea or at least behind its surface.

Experiment 5.—Now focus the light on the lens of the eye, use a very small pinhole, remove the eye far enough away from the pinhole to make the pinhole appear like a star; an object will be seen very much resembling the microscopic appearance of the lens of the eye; that is to say, a star-shaped body having four or five main arms with innumerable branching lines joining the main ones will appear. This star-shaped system of lines can also be seen by looking through a very small pinhole held four or five inches from the eye. That this system of branching lines is not made by the object lens or by the refrangment of light at the edge of the pinhole can be proved by rotating the object-lens or the pinhole disc on the line of vision as an axis. The striations produced by the object lens or by the disc can be made to eclipse the striations produced by the observer's eye. What is this star-shaped system of channels? It is evidently the connective tissue structures and lymph-channels of the crystalline lens. In proof of this it may be asserted that these channels or radiating lines change their relative positions slightly under the act of accommodation in somewhat the same manner as do the double images of Purkinje⁶—(Vol. i, p. 172, figs. 43 and 44).

Experiment 6.—(If in the above experiment the eye be so turned that only the front surface of the cornea be illuminated by a point of light, the very slightest opacity of the cornea will be discoverable; various dots and lines, the dots having various shapes and radiations, the lines having various radiations, can be discerned, and these dots and striations are so uniformly present

that they seem to constitute what may be termed a normal opacity of the cornea. Some of them very much resemble spots in the cornea of the frog, stained so as to show the positive picture. (See 6, Vol. 1, 146.) These opaque stellate cells can be best viewed, however, by looking at a full moon through a three-inch lens held eighteen inches from the eye and then partially intercepting the rays by means of a card, or better still, a piece of blue glass. The stellate cells will be seen to push forward on the card and accumulate at its edge. Images of other bodies in the cornea and on the cornea may also be made to show themselves by that means. The spots on the moon will leave their impression on the picture, but the opacities on the cornea can be differentiated from other opacities by observing that they move when the lids move; those in the lens in the hand will stay still when the observer's eye is rotated.

All opacities of the cornea produced by facets, leucomas, infiltrations, etc., are exhibited with great distinctness by this partial oblique illumination of the cornea.

Experiment 7.—Now, turn the eye directly toward the light, focus the lens so that complete fogging will be produced by the lens, use the disc with the small pinhole and gaze intently into the flame; in the center of the field will appear three sets of round bodies. Those of the first set are closely packed together in a layer, but they are apparently not quite hexagonal in shape though somewhat flattened. In Fig. 3, taken from Zehender, an attempt has been made to represent one set of these bodies between the blood-vessels. The large round body there depicted represents, poorly, the appearance of the entrance of the optic nerve or "blind spot."



Against a kerosene flame they seem a pale yellow. Scattered among them are disc-shaped bodies that may be globular but look like red blood-corpuscles when seen under the microscope. The outside walls are dark blue. Lining the walls is a layer of a pale yellow color, then comes a dark blue line enclosing a central portion of pale yellow. These globular bodies are scattered among the flat stippled bodies mentioned above and seem nearly but not quite in a single layer. They are all of nearly the same diameter, about as wide as a medium-shaped blood-vessel. All these disc-shaped bodies are stationary and keep relatively the same position with reference to each other, although a slight parallax can be produced by movements of the eye or card. A third kind of globular body can be seen, which, however, can be made to float about more or less freely and can be seen to cause eclipse with the disc-shaped stationary bodies. What are these globular or disc-shaped bodies? The flat stippled bodies

were thought by Zehender to be the image of the pigment cells of the choroid (sic). They cannot be such. They are too large and are not of the right shape and lie in front of the retina instead of behind it, or at least in the front layers of the retina. Zehender pictures them stippled between the blood-vessels, but a careful examination will show that the stippling extends over the blood-vessels in places. The second stationary globular body can readily be seen to be just in front of the retinal vessels, for by using an extremely small pinhole these globular bodies can be seen to be really much larger than they at first appear. A ring halo can be seen far out from their center, not only spreading over the image of their blood-vessels, but by a slight movement a parallax can be developed to show that they lie just in front of the blood-vessels. The third set that move about freely can be readily demonstrated to be in the vitreous. What are these three bodies? The last-named floating bodies are doubtless portions of food floating in the vitreous and while in small quantities may be considered normal, in large quantities become the vitreous opacities. The second-named globular bodies are doubtless in the hyaline membrane and in small numbers may be considered normal, but in large numbers constitute the opacities seen in hyalitis. The stippled bodies which Zehender called the hexagonal cells of the pigment layer and pigment dust—"pigment staub"—are doubtless in the retina, possibly in one or the other of the granular layers of the retina. It seems incredible to me that "pigment staub" lying behind the rods and cones could be thus viewed.

Experiment 8.—Remove the pinhole diaphragm, remove the colored glass, insert the white card, adjust the mirror so as to throw the light on the surface of the white card, place your eye very close to the lens, gaze intently into the center of the white card and rapidly press the finger point or a lead pencil tip against the eyeball; at first dark pulsating bodies will appear scattered around the periphery of the field, four or five bodies pulsating synchronously with the pulsations of the heart. By a little practice these may be made to appear without the pressure of the finger point on the eyeball, and by still further practice branching lines from these pulsating bodies may be seen to approach one another. These must evidently be the shadows of the large blood trunks, there being in Ranvier's¹⁵ preparation of the circulation of the blood in the retina five main blood-vessels apparent in the injected specimen of the blood-vessels of the "yellow spot" (see also 6, vol. 1, p. 172). By great patience and practice a mesh resembling a crown of these vessels can be discovered around the point of fixation.

It is to be remarked that neither by this method of viewing the system of blood-vessels in the retina, nor by that mentioned in Experiment No. 2, nor by the preparation of the retina for microscopic examination can any vessels be discovered at the region of the fovea. It should be remarked also that although the blood-vessels may be seen to pulsate in the manner just described, the blood current itself cannot be discovered, Meissner to the contrary notwithstanding.

BIBLIOGRAPHY.

1. Jour. des Mal. Cut. et Syph., January, 1899.
2. Beiträge zur Kenntnis des Sehens in subjectiver Hinsicht von Joh. Parkinje; Prag, 1819 (quoted by Zehender)
3. Dr. W. Zehender, Klin. Monatsbl. f. Augenheilkunde, March, April, September, October and November, 1896.
4. Hermann L. F. Helmholtz: Physiolog. Optik., Leipzig, 1867.
5. Ernest Fuchs, Vienna; Ophthalmologie, 1892.
6. Norris and Oliver, Phila.; System of Diseases of the Eye, 1897.
7. Max Kries: Relations of Diseases of the Eye to General Diseases. English translation, 1895.
8. A. Von Graefe's Archiv. f. Augenheilkunde.
9. J. Müller: Handbuch der Physiologie.
10. Hermann's Handbuch der Physiologie, Leipzig, 1879.

11. Klin. Monatsbl. f. Augenheilkunde.
12. Archiv. f. Ophthal.
13. Graefe u. Saemisch: Handbuch der gesamten Augenheilkunde.
14. Lehrbuch der Ophthalmologie.
15. Traité technique d'histologie.

MODERN TREATMENT OF FRACTURES.*

BY EDWARD A. TRACY, M.D.

BOSTON.

In this paper the subject of fracture treatment shall be limited to a consideration of the principles that apply to the treatment of fractures in general, and of the materials best adapted to their treatment in consonance with these principles.

The term "fracture" as used, implies a broken bone. A bone can be broken, the fragments regain an accurate reposition and unite without a callus. So that a callus is not necessarily in evidence after a fracture. Manley of New York, a surgeon of vast experience with fractures, has repeatedly observed and noted this fact, termed "primary union." The *sine qua non* for primary union in a fracture is accurate reposition of the fragments and fixation. Primary union in fracture is exceptional. It probably occurs only when there is no, or but a very temporary, displacement. Displacement in fractures is the rule. When it persists, there are the genetic factors for callus production present. The more displacement, the more these factors are called into action, and the greater the resulting callus.

From the foregoing it follows that the duty of the surgeon in attendance on a fracture case is to get the fragments into as accurate reposition as possible, and provide an efficient and safe fixation for them. Nature does the rest.

The necessity for fixation in the treatment of fractures, strange to say, is not universally admitted. The celerity with which fractured clavicles and ribs unite, and for which fixation is ordinarily impossible, is urged by some surgeons as an argument for the non-use of fixative appliances. Broken collar-bones and ribs with displacement unite, it is true, but *always with deformity*; the surgeon uses fixative apparatus to *prevent* deformity. Some surgeons have treated fractures of the tibia, and of the radius (Colles') without apparatus. In these cases, however, there was no tendency to displacement, and to coin a term, physiologic fixation was present. In these cases, therefore, the principle of fixation was not violated; but, in every case, let it be understood that mechanical is superior to physiologic fixation.

There is one fracture best treated without any fixative appliance; that is, fracture of the neck of the femur in the aged. Careful attention to the nursing of such patients is all-important. It is paradoxical, but true, that the best surgical treatment of this fracture is purely medical. Apparatus, other than a few sand-bags, is cruel and harmful. With the vast majority of fractures, comprising all others but those of the hip in the aged, mechanical fixation, where it can be obtained, prevents or limits deformity, hastens union, and it therefore always indicates.

In fractures involving the joints, there is not unanimity among surgeons as to the time for applying passive motion. Some surgeons claim it is injurious before the fourth week, and even later. No set time should be given. The indications of each individual case should be followed. Passive motion is employed to prevent adhesions in or about the joint. It is harmful to an inflamed joint, and therefore should be cautiously applied—not enough to increase the synovitis, and yet

sufficient to prevent adhesions. The timely and right application of passive motion is imperatively called for in the treatment of fractured joints to restore them to their functions.

While speaking of passive motion to prevent adhesions, a word about massage is in place. Massage is useful to aid in the nutrition of those parts which suffer from functional inactivity in consequence of the fracture. It is also of use in the absorption of exudation, tissue hemorrhage, etc., caused by the injury. It is useful, generally, to employ massage daily, commencing a few days after the injury. In this, however, as in the application of passive motion, the indications of each individual case should be followed.

The materials used for producing fixation are various. Plaster of Paris is considerably used for this purpose. The fixation produced by it is fallacious. While outside the limb appears as rigid as a stone wall, inside the broken bones can wobble about, because of the cotton batting between the limb and the "cast." Subsidence of swelling, and later on, tissue atrophy, contribute to the misfit. This is the cause of the deformities so frequently met with after the plaster-of-Paris treatment of fractures.

The scientific treatment of fractures to-day demands that the surgeon mould on the patient a splint made from a plastic material, and applicable next to the skin. By this method the best possible fixation is attained, and the surgeon has the limb under control; at any time he can inspect it by simply removing the retaining bandage—a matter of a moment or two. There are two plastic materials that can be so used. One is gummed felt, the other, wood-fiber splint material. With the felt, heat is the agent used to render it plastic. Water renders the wood-fiber material plastic. Wood-fiber material is preferable, because lighter, cleaner and cheaper, and in compound fracture cases it permits of powerful antiseptic treatment of the splinting.

In the treatment of fractures at one time, and that not so very long ago—it was deemed necessary by many leading surgeons to apply over the broken limb a roller bandage before the splints were applied. To do so to-day would be malpractice. What was once deemed by eminent surgeons a cardinal part in the treatment of fractures is in oblivion to-day. To-day surgeons teach the application of plaster of Paris in the treatment of fractures. It is not necessary to be a prophet, nor the son of a prophet, to foresee that the plaster-of-Paris roller will partake of the oblivion of its congener, the primary roller; and this because a more scientific method of treatment is demonstrable, and because the defects of plaster treatment are manifest. A prime defect, the insufficiency of the fixation produced, has been mentioned. Sequential to this are numberless deformities, readily found among hospital patients. Its danger as a primary dressing in many fractures causes it to be avoided in such cases. It prevents the surgeon from inspecting the fracture, and from employing massage and passive motion, which the scientific treatment of such cases now demands. These defects condemn its use by the practical, progressive surgeon. The lesser evils of its use are the discomfort to the patient on applying it, and on removing it; the discomfort of its weight; its dirtiness, necessitating in well-appointed hospitals a "plaster-room."

The only scientific way of applying plaster of Paris is in the form of splints: moulded on the limb and retained by a bandage. The writer discarded this method several years ago, because of the advantages

*Read before the Chelsea (Mass.) Medical Society, Feb. 16, 1899.

possessed by wood-fiber splinting as a fixative appliance in all fractures where fixation is possible.

DOUBLE SYNCHRONOUS AMPUTATION.*

THREE CASES ON LOWER EXTREMITIES.

BY THOS. W. HUNTINGTON, M.D.

SAN FRANCISCO.

This report is made for the purpose of emphasizing the value of methods recently adopted in combating surgical shock. The circumstances which usually attend a crush of such a character as to necessitate double amputation usually entail active and prolonged hemorrhage. As a rule such patient must be transported a considerable distance, often many miles, before skilled attention can be secured. Preliminary efforts at hemostasis are made hastily and in most primitive fashion, by persons untrained and often unbalanced by the exigency. Improvised tourniquets are so adjusted as to admit of their being displaced downward, whereby their efficiency becomes totally annulled; and curiously enough, a second attempt in the same direction is rarely made. Accordingly, as a rule, the surgeon is confronted by a patient who is pulseless, or nearly so, cold, and in a profound state of collapse. To defer amputation until resort may be had to reactionary measures, though altogether unsurgical, was formerly advocated by high authority; but such a policy seemed not to find justification as attested by rates of mortality. Until recently the death-rate in this class of cases, particularly where the lower extremities were involved, was enormous.

The statistics bearing on this subject are not voluminous. Agnew has reported 74 cases of synchronous amputation by various surgeons, including the upper and lower extremities. Of these, 36, about 49 per cent., died, and 38 recovered. Eliminating all except amputations of the lower extremity, there remained 55 cases, of which 33, or 60 per cent. died. Of 11 double amputations performed and reported by John Ashurst, Jr., 7, or 63 per cent. died and 4 recovered.

During the past fifteen years I have done 9 double amputations of the lower extremities, all for traumatism. The first 6 comprised 1 double thigh amputation and 5 of the legs. Of these, 4, or 66 per cent., died and 2 recovered. The last 3 cases, 1 of both thighs and 2 of the legs, all recovered. The mortality in the 11 cases is 44.4 per cent. It seems but a fair presumption, and my personal conviction is, that had the same measure been adopted in the six earlier cases as in the last three, the mortality-rate for the series would have been materially lessened.

The following is a brief history of the last three cases: R. W. B., aged 55 years, a brakeman, was injured at Galt, Cal., Feb. 22, 1897. The front wheels of a locomotive passed over both legs. He was admitted to the Southern Pacific Hospital three hours later, having been transported about thirty miles. The clothing, blankets and mattress accompanying him were saturated with blood. The patient was pale and the radial pulse could scarcely be felt. Having been advised of his coming full preparation had been made to meet every requirement. Before moving him from the stretcher twenty ounces of normal salt solution were introduced subcutaneously and efficient measures adopted for control of hemorrhage. On examination, both feet and ankles were found to be hopelessly crushed and immediate amputation was determined on. During the procedure resort

was had to infusion of salt solution several times, about two quarts being used in the aggregate. At the close of the operation the patient's condition was apparently more encouraging than when he entered the hospital. He gradually rallied and within twenty-four hours assumed something like his normal condition. In spite of our best efforts both wounds sloughed extensively and before repair was well established two sharp secondary hemorrhages occurred in one stump. Nevertheless, he went on to an excellent recovery and was well at the end of four months.

F. A. S., also a brakeman, aged 23 years, was injured at Suisun, Cal., Nov. 23, 1898, both legs being hopelessly crushed beneath the wheels of a locomotive. He arrived at the above-named hospital three hours after the injury, attended by Dr. Downing of Suisun. The hemorrhage had not been excessive but still was sufficient to entail profound shock. Similar measures to those above described were at once employed and both legs were immediately amputated, the left four inches below the knee, and the right at the knee-joint. More than two quarts of normal salt solution were introduced subcutaneously prior to and during the operation. The patient responded promptly and reaction was established within a few hours. Here also both stumps suppurated. The later history was complicated and recovery delayed. He is now, I am informed, well and waiting for the adjustment of artificial limbs.

N. M., a laborer, aged 25, was injured on Nov. 27, 1898, early in the morning, and he lay on the ground unattended for three hours before being discovered. Both legs from the knees to the ankles had been crushed into a shapeless mass by a freight train. He reached the hospital, eighty miles distant, at 7 p. m., fifteen hours after the injury. On examination it was found that not the slightest effort had been made to prevent the loss of blood. In spite of this fact he was conscious and could speak rationally. A slight impulse could be felt at the wrist. Prompt administration of salt solution was followed by general improvement, and though his condition was regarded as altogether hopeless, immediate amputation was decided on. In exactly one hour from his arrival at the hospital, both thighs were amputated near the middle point and proper dressings applied. I mention this item as more than probably an important factor in the successful termination of the case. It was estimated by my assistants that more than four quarts of salt solution were introduced during the procedure. The subsequent history was a repetition of experiences had in the former two cases. Recovery was slow, but he is now well.

It is proper to say a word with reference to the failure to secure asepsis and rapid repair in all of these cases. It must be remembered that we had to deal with wounds of a most unfortunate character. Tissues were ground to a pulp and thoroughly impregnated with filth. The apparent requirement for rapidity of action forbade anything more than formal and superficial preparation and the presence of germ infection under such circumstances would seem well-nigh inevitable. Moreover, if it be urged that all the improvement in the mortality-rates, shown during the past few years in this connection, may be attributed largely to asepsis and rapid wound healing, it will be seen that the cases above reported furnish no basis for such an argument.

DR. WARREN B. OUTTEN will soon have ready for the press a volume with the title, "Man's Inherited Martyrdom, a Fitful Study of Degeneration."

* Read at the Twenty-ninth Annual Meeting of the Medical Society of California, April, 1899.

CYST OF PANCREAS FOLLOWING TRAUMA.*

BY J. VAN DER LAAN, M.D.
MUSKOGON, MICH.

Growths, malignant or benign, pressing on or involving the excretory duct of this gland, thereby causing retention of its physiologic secretions with probably cystic distension of its capsule, are excluded from consideration in this paper; and it is proposed to limit the discussion to such cysts of this organ as are preceded by a history of mechanic violence in this region, and offer strong presumptive evidence of being due to such violence.

That this gland, lying as it does, deeply in the upper abdominal zone and apparently well protected from mechanical injury, should at times be subject to violence, which may so seriously interfere with its normal functions as to materially affect the health of the subject, seems, on superficial examination, quite improbable. On little reflection, it will be noted, however, that under favorable conditions, when the stomach is empty and the body is in a position whereby the abdominal muscles are relaxed, a severe blow, fall, or impaction at this point between two opposing forces may so affect the pancreas as to crush or bruise its structure, rupture its main or lesser ducts, dislocate it, or displace part of the gland, and, if the displaced part forms an acute angle with that normally situated, partial or complete obstruction of its duct at this point is inevitable.

Pancreatic cysts of the above etiology, Senn regards as invariably true retention cysts, whose contents, when recent, is pure pancreatic juice, which in process of time, may undergo physical and chemical changes, by reason of inflammatory processes of the diseased organ in whole or in part.

In recently formed cysts, the sac is thin and delicate, especially so when greatly distended or of rapid development. Its outer layer consists of peritoneum, its inner is soft and smooth. In old cysts, where the cyst wall has undergone various inflammatory and other changes, it is apt to be hard and thick, and may become cartilaginous or ossified.

The important and practical subjects of diagnosis and treatment require painstaking and, oftentimes, prolonged consideration, especially so when an attempt is made to differentiate this lesion of the pancreas from other conditions not infrequently acting within this region of the abdomen. Solid growths in this neighborhood, as a rule, present such differences in their physical characters that they need not be considered as offering any real difficulty in diagnosis. The diseases more apt to give trouble in point of diagnosis are: 1. Cystic disease of the gall-bladder—hydrops fellæ vesicæ. 2. Echinococcus cyst of the liver, spleen or peritoneum. 3. Localized peritonitis with effusion. 4. Ovarian cystoma. 5. Aneurysm of the abdominal aorta, or mesenteric vessels. 6. Enlargement of the lymphatics with cystic formation. 7. Hydronephrosis and pyonephrosis. 8. Cystic disease of kidneys or suprarenal capsules.

Inflammatory exudates, either with or without the formation of pus, will seldom give difficulty in diagnosis, being differentiated from the non-inflammatory formations, here, as in any other part of the body, by the usual signs of inflammation, fever, pain, etc. It is possible, however, that pus may be found without giving rise to elevation of temperature, as for instance in the case of Walsh¹, but such occurrence is so unusual that it need not be considered, and when found, treatment would be identical.

It is exceedingly important to differentiate pancreatic cyst, whether recent or of slower development, from malignant disease in this region. The most important factors in a differential diagnosis are: 1. The history of the case, in one, preceded by injury or attack of colic—when due to impaction of a calculus in the pancreatic duct—in the other absence of such injury or attack. 2. By the shape and character of the growth—being large, usually distinctly fluctuating and commonly unilocular in the one with considerable mobility, and smaller, often multilocular, rarely distinctly fluctuating and more or less fixed in the other. 3. By the rapidity of the growth—a pancreatic cyst attaining in a few weeks the size which even in malignant disease would require many months. 4. By the effect it produces on the general organism, impairing health and nutrition, in case of cyst, little as compared with malignant disease.

1. Enormous distension of the gall-bladder—hydrops fellæ vesicæ, such as are recorded in medical literature, where the cyst occupies the greater part of the abdomen—must of necessity offer great difficulty in diagnosis. With a reliable history of the case, gall-bladder distension will be found to have started in the right hypochondrium, whereas pancreatic cyst makes its appearance first in the left hypochondrium or epigastric region. In gall-bladder disease, the colon is usually anterior, in pancreatic cyst below and in front of the growth.

2. Hydatid or echinococcus cysts of the liver, spleen or peritoneum are slow in their progress, and have no history of preceding injury or attack of colic; however, in case of slowly-developing pancreatic cyst from partial obstruction of the duct of Wirsung or some of its branches, and where the cyst wall has undergone proliferative changes, it will be impossible to arrive at a definite diagnosis. This is of minor importance, however, for both diseases require practically the same surgical treatment.

3. Localized peritonitis with effusion, when met with in this region of the abdomen is to be differentiated by the history of acute peritonitis—pain, vomiting, fever, probably constipation and tympanitis, often preceded by some definite lesion of one or more viscera.

4. Ovarian cystoma, when large and not accompanied with an intelligent history, is most difficult to differentiate from pancreatic cyst, as is proven by able and painstaking surgeons, who have operated on pancreatic cyst for ovarian cystoma and only discovered their mistake during the process of the operation. Ordinarily there need be no difficulty in arriving at a satisfactory solution, especially when an intelligent history of the case is obtainable. The position of the abdomen first invaded, displacement of colon, presence or absence of growth by vaginal touch sufficiently differentiate between the two diseases.

5. From aneurysm of the abdominal aorta or mesenteric vessels pancreatic cyst is known by transmission of the aortic impulse in only one direction, which impulse will entirely disappear when the patient is made to assume the genupectoral position. Moreover, aneurysmal tumors may be made smaller by compression and usually give the "bruit" on auscultation, both of which signs are absent in pancreatic cyst.

6. Enlargement of retroperitoneal lymphatics with cystic degeneration will scarcely offer difficulty in diagnosis, as the fixed location, nodular character, comparatively smaller size, and except in extremely rapid malignant disease, slowness of growth, with probable evidences of similar changes in neighboring lymphatics or other

* Read before the Michigan State Med. Soc.
1 Medical News Dec. 30, 1893.

tissues will sufficiently differentiate between the two conditions.

7. Hydronephrosis, pyonephrosis, cysts of the suprarenal capsules, may offer difficulty in diagnosis, but all of these conditions are apt to develop from the side and extend toward the median line, are usually situated lower down, and, in case of hydronephrosis and pyonephrosis, are preceded by a more or less definite history of kidney lesion or calculi.

Of the most characteristic symptoms of pancreatic cyst, such as are of a size to be operable, the following deserve attention: History of an injury in this region or severe attack of colic; smooth globular cyst, certainly fluctuating when of recent date, and appearing in the epigastric or left hypocondriac region, crowding the stomach up, displacing the colon downward, following the respiratory movements slightly; skin of the body of a peculiar dirty sallow color; little if any pain; no very serious impairment of nutrition, except as due to digestive derangement occasioned by the pressure of the growth.

Given a case answering in the main the above description, what is a physician to do? Such a case demands a celiotomy, even if the diagnosis rests between pancreatic cyst, hydronephrosis, echinococcus of the liver spleen or peritoneum, ovarian cystoma, cysts of the kidney or suprarenal capsule—and any and all of the conditions require the same treatment, at least in so far as an exploratory laparotomy is indicated.

Here I append the history of a case of pancreatic cyst which came under my treatment in the spring of 1896, and of which the following are the more salient points:

On December 3, 1895, I was called to see J. D. J., aged 9, whose father related that the boy while coasting down a steep hill had fallen from his sled, and, when lying on the ground was run into by the sled of his playmate, which forcibly struck him in the region of the stomach, knocking the unfortunate boy "out of wind." He was removed to his home, about three blocks distant, where I found him some two hours after receipt of the injury. He was still profoundly shocked, complained of much distress in the region of the stomach and umbilicus and was vomiting. There were no signs of internal bleeding, and nothing to my mind required operative interference. There was no bloody urine, bowels moved next day, but nausea and vomiting continued; fever, if any, was slight; no evidence of peritonitis. Gradually vomiting eased up, but his general nutrition remained impaired.

I did not see him again after December 24 until March 31, 1896, when the father brought him to my office to get my opinion concerning a large tumor which had appeared about three weeks before, and was rapidly growing. The abdomen was markedly enlarged by a smooth but tense growth in the left side of the epigastrium, which gave unmistakable evidence of fluctuation. The tympanic colon was recognized below, the stomach resonance above it; breathing was short and largely costal; heart somewhat displaced upward, and the tumor appeared to be influenced by the respiratory rhythm. The boy was still pale and looked ill, no rise of temperature, appetite impaired, food causing distress from distension, which was promptly relieved by vomiting. The tumor was not painful to the touch, nor had it given evidence of pain during its rapid growth.

Remembering the accident of the preceding December, the rapidity of its growth, its position, physical characteristics, and its surroundings, a provisional diagnosis

of pancreatic cyst was made. Next day, April 1, with my friend, Dr. F. W. Garber, the boy was visited at his home, and again carefully examined. To make matters more definite, it was proposed to withdraw some of the fluid contents of the cyst, which might give valuable information as to the nature of the growth. Accordingly a hypodermic needle, properly sterilized, was introduced at the most superficial part of the cyst, and about 2 c.c. of fluid withdrawn. On arriving at my office, part of the contents of the hypodermic syringe was added to a solution of boiled starchwater, and Fehling's test applied after a few minutes. An abundant reduction of the sub-oxid of copper proved that a large part of the starch solution had been converted into grape sugar, and that whatever else the cyst contained, it was certain that the amylolytic ferment of the pancreas was actively present. There was now, therefore, no longer any reasonable doubt as to the nature of the cyst, and operation was agreed on for the next day.

About three hours after we had left the home of the patient, his father came to my office, telling me that the boy was feeling very ill, had had a chill, was vomiting, had great pain in the lower part of the abdomen, and that the tumor had disappeared. On arriving at the house, I satisfied myself that the tumor had actually disappeared, found the abdomen painful, the boy vomiting a greenish substance, temperature 102—in a word, all the symptoms of an acute peritonitis were present. It at once dawned on me that the delicate cyst wall had given way at the puncture of the needle and the cyst had thus emptied itself within the peritoneal cavity.

What to do was the important question. We had received absolute proof of the activity of the fluid now free in the peritoneum, by its ready digestion of the starch. What would the effect on the peritoneal lining be; would it disintegrate and partly digest it? The results of experiments as stated by different authors are conflicting, and besides, was not the patient even now infected, as shown by the unmistakable signs of peritonitis? Without interference, there was every reason to believe that a fatal termination could be reasonably expected; and, if the patient should be so fortunate as ultimately to escape with his life, in what condition would the contents of the abdomen come out—would not some of the organs be permanently crippled by adhesions and malpositions? Such were the important questions clamoring for a prompt answer. A hasty consultation was called, and it was decided to at once interfere; not at this time to cure the cyst, but mainly to save life from destructive peritonitis that was already fairly under way.

Preparations for immediate operation were hastily made, and in the midst of unfavorable surroundings the operation was begun, unfavorable in all respects, except that we were reasonably sure that the abdomen and immediate surroundings were fairly free from sepsis. On opening the abdomen not a trace of cyst wall could be discovered, as we had surmised, and, after carefully draining the peritoneum of its fluid and flushing the abdomen with large quantities of hot sterilized saline solution the abdominal wall was closed.

It healed by first intention. Nothing eventful occurred except the wounding of the stomach, which wound was immediately closed by suture and as a means of further protection a patch of omentum was added—and except vomiting of blood once or twice the next day recovery was uninterrupted. It was hoped that the cyst wall at the site of rupture had become sufficiently irritated to cause adhesive inflammation and thereby close the rupture. In this expectation we were not disap-

pointed, for just three weeks after the first operation the cyst made its reappearance at the original site. It was now proposed to make an attempt to cure the cyst. Accordingly the boy was again anesthetized, the incision made in the same place as before, and the abdomen opened. A great deal of thickening of the omentum was found, with adhesion to the abdominal wall at the place of first incision. No attempt was made to loosen the gastrocolic omentum, but an incision was made through it down to the cyst wall and the cyst wall was secured in the usual way—pulling it well into the wound, introducing a canula, emptying the cyst in this manner, and sewing it to the edges of the abdominal incision. A large, double, soft-rubber drainage-tube was introduced to the bottom of the cavity and the rest of the wound closed as is usual. The quantity of fluid escaping during the first few days was enormous, soaking the large thick dressings in a short time and requiring their frequent renewal.

The skin coming in contact with the moistened dressings became exceedingly red and excoriated, and it proved a difficult matter to protect it from the irritating action of the pancreatic fluid. After some trials I found that mutton tallow applied to the skin when still quite warm gave better protection than lard, vaselin and the rest of the softer ointments. One of the drainage-tubes was removed after five days; the second one was gradually shortened till at the end of the three weeks it was entirely removed. Six weeks after the last operation the fistulous tract had completely closed, and the boy was discharged. His health and nutrition had rapidly improved, and when discharged he appeared as well as ever.

The facts to which I wish to call your attention in this case are:

1. The typical history of the case, agreeing in all the important points with the classic symptoms of pancreatic cyst after injury, as described by Senn and others, with the exception that all the cases reported as far as I can learn were met with in adults, mine in a child.

2. The danger of exploratory puncture even with a small hypodermic needle—this is beautifully illustrated in the case presented, and though so careful a surgeon as Senn advises this little procedure in case of doubtful diagnosis, and strongly condemns it in case of hydatid, distension of the gall-bladder, etc., I am persuaded that in cyst of the pancreas, when of rapid development and where the cyst wall is normally thin and delicate, this little operation can not be too strongly condemned.

A few years ago so able and conservative a surgeon as Treves recommended the exploring needle in cases of doubt in appendicitis. My first case of appendicitis proved to me the absolute danger of such a method, and I have always regarded this procedure as by no means void of danger. From the experience I had in the above case of pancreatic cyst, I am more than ever convinced that the exploring needle and hypodermic syringe should be banished as a means of diagnosis in any obscure abdominal affection. The dangers are so overwhelmingly against their employment, as compared with the aid they may render, that exploratory puncture of the abdomen must henceforth be ignored.

200 S. Terrace Street.

PUBLIC BATHS along the Hudson and East River fronts of New York City have been opened for the summer, and on Rivington street a permanent public bath house, to be open the year round, and to cost \$96,000, is in course of construction.

TREATMENT OF TUBERCULOSIS.⁶

A THERAPEUTIC MEASURE BASED ON PHYSIOLOGIC CONSIDERATION.

BY J. F. PEAVY, M.D.
ASHEVILLE, N. C.

Serum therapy, claiming the designation of physiologic medicine, has a very doubtful title to that distinction. The introduction into the circulation of toxins, themselves the production of morbid action, may, under some circumstances, counteract other toxins there. Under some conditions they may excite a cellular response resulting in the generation of protective substances by the cells. The use of these agents is perhaps legitimate and promises to become scientific, but it seems a questionable use of language to distinguish as physiologic methods which depend for their results on pathologic processes.

Oxidation is the ultimate measure of vital action as well as the ultimate source of vital force or resistance of the body as a whole and of its cellular elements. Oxidation furnishes the energy with which the organism does its work, cellular and somatic, developing the potential energy of the nutritive increment into vital action. Thus, nutrition and oxidation become the ultimate factors on which depends the generation of vital force. Under normal conditions the processes balance or complement each other. This correlation may be destroyed in various ways. Overfeeding and insufficient exercise tend to prevent oxidation from keeping pace with the nutritive increment and favor the development of suboxidation products in the system. Notably, rheumatic and gouty states are produced in this way. Various special defects of nutrition may interfere with the capacity of the tissues and fluids to appropriate oxygen. Living in a poor or vitiated atmosphere lowers the physiologic oxidations, because the oxidizing capacity of the air is low.

In whatever way it may come about, lowered or defective oxidation lowers the defensive capacity of the organism. It does this by lessening the cell vitality and resistance. Thus increased vulnerability, either general or local, may arise. Special vulnerability to particular infections may be favored by inherited predisposition. When the defensive capacity falls below the point of successful resistance, the germ profits by his opportunity to occupy for his species a new nook in the economy of nature. He is able to do this because the low cell vitality and the presence of suboxidation products make for him favorable culture conditions.

Oxygen is not only the excitator of nerve sensibility and muscular contraction, thus actively supporting life, but it is also the active agent in preparing for elimination the products of waste, serving as the scavenger of the system. On account of its pre-eminent physiologic importance, the conditions of its introduction and action in the human system demand consideration. In the first place, it is of prime importance that the nutritive increment be properly maintained, supplying the materials for this organic combustion. Lower nutrition and the oxygen increment is lessened as a simple physical adjustment and the vital dynamic output proportionately diminished.

Another condition on which depends the capacity of the fluids and tissues to appropriate oxygen is their alkaline or electropositive nature. Lessening this alkalinity lowers the capacity of the red blood-cells to take up oxygen in the lungs and distribute it to the tissues, the

⁶Read at the Meeting of the Alabama State Medical Association, Mobile, April 29, 1899.

capacity of the tissues to appropriate it in effecting their own metabolism and also the solvent power of the blood for the products of oxidation.

The capacity of the red blood-cells to convey oxygen to the tissues may be impaired by defects of nutrition. Nitrogen is a necessary constituent of hemoglobin. This element is full of capacity while possessing little positive property. It appears to alter its chemic attitude and relationships to adapt itself to the intramolecular changes which hemoglobin is constantly undergoing in the discharge of its functions. A due amount of nitrogen is necessary to make vigorous blood-cells. The essential constituent of hemoglobin, however, the fundamental properties of which constitute the basis of its function, is iron. This may be deficient in quality, constituting the condition known as anemia or chlorosis, with diminished capacity to supply oxygen to the tissues.

The state of the respired air affects the amount of oxygen which the blood is able to take up in the lungs. The principal factors, aside from the constitution of the air, which make up this condition are density, humidity and electric tension. These are the variable factors. Contamination by excess of carbon dioxide and other gases may, under certain circumstances, become a factor. Other things being equal, increase of density increases the amount of oxygen which the respired air is able to give to the blood by increasing the absolute amount of oxygen in given volumes of air. Under natural conditions, the greatest atmospheric density is found at the lowest levels and, other things being equal, the oxygen increment would be greatest at the lowest levels. Other factors, however, are not and can not be equal. At low levels, there is ordinarily high atmospheric humidity and low electric tension. Moisture in the air diffuses and destroys electric tensions. At low levels, even if the air is dry, the electric tension is much lower than in higher regions, especially among mountain-peaks. The projections of the earth's surface appear to act as points concentrating the earth's electricity, these charged points charging the air flowing over them. Whether or not this is the explanation of the presence of ozone in mountain air, it appears to be accepted as a fact that the ozone is present in greater abundance than in that of low levels and that the air has increased activity, notwithstanding the fact that the absolute amount of oxygen is less.

The essential fact in the ozonic conversion of oxygen is the dissociation of the atoms of O_2 , the ordinary condition of oxygen; O_3 , the ozone of the textbooks, is an unstable triatomic grouping which returns readily to the atomic, nascent condition under the influence of disturbing affinities. This accounts for its increased chemic activity as compared with ordinary oxygen. The dissociation of the atoms of O_2 means an appropriation of energy which is represented by the nascent, polarized condition of the parted atoms. This vibrant energy is either chemic or electric energy, as circumstances may determine, as two modes of force here become identic. In the presence of oxidizable material it expends itself in chemic action. If only oxygen bonds are present the atoms fall into the unstable triatomic grouping known as ozone.

Simple altitude without compensating conditions could be only a disadvantage to persons suffering from impaired lung function on account of the diminished atmospheric pressure and consequent rarefaction of the air. Where the function of a part of the lungs is impaired or lost from tubercular infiltration, there is a tendency to compensatory dilatation of the cells of the

unaffected portions. Much diminished atmospheric pressure, either natural or produced by artificial contrivances, may carry this emphysema much beyond the point where any compensatory advantage accrues, increasing the embarrassment of respiration by interfering with the proper renewal of air in the lungs. Very high altitudes soon work the ruin of cases with hemorrhagic tendencies or weak hearts.

Moderate altitudes are, for the great majority of cases, most beneficial, and not then from diminished atmospheric pressure but from compensating conditions. These are diminished humidity, diminished miasmatic influences, diminished heat in summer season and increased electric tension in the air. This last condition pertains especially to the oxygen of the air.

Electric excitation antagonizes chemic union between atoms similarly excited, and favors it between atoms oppositely excited. Electric tension, as affecting oxygen, is defined as a condition of strained relations between the atoms of the oxygen molecule. It reaches its highest expression in a rupture of relations and the development of atomic oxygen. A partial loss of tension allows the unstable triatomic arrangement O_3 . A further diffusion of tension allows the ordinary diatomic grouping.

This electric strain increases the chemic activity of oxygen by lessening the cohesion of its atoms, causing them to part company, the more readily to enter into new combinations under the influence of disturbing affinities. This, then, is the condition which more than compensates for diminished density in mountain air, unless, indeed, the elevation be so great as to radically disturb the mechanic conditions to which the circulation is adjusted. At moderate elevations, 3000 to 4000 feet, with ordinary exercise, the oxidations are carried on more perfectly than in the denser air of low levels. The tonic effect of mountain air consists chiefly in this increased chemic activity of the oxygen, stimulating nerve and cell, increasing metabolism, and hence, the nutritive demand; promoting appetite and digestion and ridding the system promptly of the products of waste.

The process of nutrition and oxidation being fundamentally related to the development of vital force, or resistance, a method of treatment designed to stimulate the one and promote the other can certainly lay claim to a physiologic aim. If it accomplish this result, augmenting cell resistance and reparative power, it must be admitted that it acts in line with physiologic forces.

The fundamental aim in the method set forth in this paper is to increase the physiologic oxidations, at the same time utilizing the tonic effect of static electricity, stimulating metabolism, increasing the demand and the capacity for increased nutritive increment, thus building up the resisting and defensive powers of the organism.

A proximate object of the treatment is to remove the products of waste, the sewage of the system. As is well known, in conditions of suboxidations the products, especially of nitrogenous waste through lack of solubility and difficulty for incomplete oxidation, tend to be precipitated and retained in the system, acting sometimes as irritants, always as disturbers of normal cell activity and resistance.

To remove or prevent the accumulation in the system of products of suboxidation due to impaired lung function, no measures could have a stronger rational indication than the use of oxygen itself under conditions which secure its rapid appropriation.

The static machine used is an eight-plate influence

machine fitted with a Wimshurst charger or exciter, to be used when necessary, as is sometimes the case in damp weather. The patient is placed on an insulated stool connected with the positive discharge rod of the machine. The negative terminal is formed by a spray electrode having some forty-five brass points mounted on a stand, but insulated from it by a hard rubber handle. This electrode is adjusted so that the cluster of points is about two inches from the patient's mouth and nose. When the machine is operated, a strong electric wind is generated by the discharge from the points. This electric wind is rich in ozone, as is quite apparent from its odor, and is also shown by chemic tests. The ozone is due to raising the electric tension of the oxygen to the point of dissociating the atoms of some of its molecules. In this way the oxygen, already electronegative, is rendered more intensely so and its activity thereby exalted. At the same time the patient, forming as he does, the positive electrode, is positively charged, thus exalting the affinity of his fluids and tissues for the electronegative oxygen. The patient is simply required to breathe and we have the conditions for rapid and effective oxidation. The frequency and duration of the inhalations are matters to be determined by the conditions present in individual instances. The quality of ozone developed by the process varies somewhat with atmospheric conditions. Fortunately, most ozone is developed in damp, murky weather, when it is most needed. In fine weather, it is easier to get up tension in the machine and possible to get a more violent disruptive discharge, but the ozoning action is less. There is more ozone normally present in the atmosphere in fine weather, but this means simply that, like any form of electric tension, the ozonic condition of oxygen is more persistent in fine weather.

What have we a right to expect from this treatment? Oxygen, as you know, is nature's great depurative agent both in nature at large and in the animal economy as well. Under the more active form in which it is furnished by this process, we certainly have the right to claim that it facilitates the removal of the products of waste, as well as the noxious materials resulting from impaired function and diseased processes in the lungs. Ozone destroys all known germs. The claim is not here set forth that it will penetrate deeply into the tubercular masses and destroy all the germs, but it is a fair claim that it will destroy exposed bacilli and do much by direct action to inhibit their development. It will do much to destroy devitalized masses, forestalling to a degree the development and absorption of toxins. It is, however, upon the property which this high tension oxygen has of stimulating metabolism, thus promoting nutrition and cellular vigor and resistance, that our highest hopes are based. The cells in this way are made more self-protective and the process is certainly more physiologic than any protection afforded by the introduction of toxins into the circulation.

No fact is better attested than that spontaneous recovery from phthisis sometimes takes place. This can only occur through the vital resistance of the organism itself, manifested either as a local cell resistance directly exerted on the invading microbes or as a capacity to generate antitoxins, neutralizing the toxic products of germ activity and inhibiting the development of the germs themselves. At any rate, the recovery is due to the reactive vigor of the cell, and this in turn is the product of nutrition and oxidation.

Attention to dietary is necessary to insure a due amount and proportion of the different elements neces-

sary for the nutrition of the body. It is especially important that the diet should contain a sufficient amount of proteids. It is through the increased capacity to appropriate these tissue-builders that restoration of structure and function takes place. In conditions of suboxidation it is these azotized materials which cause the most mischief on account of imperfect assimilation and conversion, thus not only failing to support normal tissue change but poisoning the system by the generation of toxins. The increased oxidation secured by this method tends to clear the system of the toxic products of disturbed metabolism and promote the normal conversion of these active agents of tissue renewal.

The intention of this paper is to place the method on a rational basis and to develop, to some extent, its physiological and physical implications. The author is quite willing to let the merits of the method be determined by practical results. Cases now under treatment will be reported in due course of time.

HUMAN FACE AND JAWS.*

AS A DANGER SIGNAL OF SYSTEMIC DEFECT OR DISORDER.

BY J. G. KIERNAN, M.D.

CHICAGO.

Man is a compound organism made up of many different organs, structures and systems which have their own life, albeit subordinate to the life of the organism as a whole. These structures, organs, etc., draw on a fixed supply of the nutriment and unless this nutriment be properly distributed through the system of checks summed up in the nervous system one organ or structure will receive more than its due proportion of nutriment. The balance kept up by the checks is distributed when the organism becomes nervously exhausted either from nerve-tire, from general disease, or from other cause. If this exhaustion occurs at certain periods, called the periods of stress, or of involution and evolution, certain structures on which is thrown such stress are peculiarly apt to be affected either in the direction of arrested development or of hypertrophy. Prominent among the structures which mark these periods are the jaws and teeth, considered together.

The period of the first dentition is one of these periods of stress during evolution, the period of the second dentition is another, and the appearance of the so-called wisdom-tooth marks a third, while the disappearance of the teeth from senility is the period of involution. These conditions of nerve strain may affect the organism of the individual so that he but his descendants show the effects. To this result are often due the irregularities of the jaws and teeth resulting from the lack of balance of the proper distribution of nutriment. The defective palates are also an expression of this strain and not of conditions like mouth-breathing, due, like the defective palates, to hereditary defect evincing itself during the evolutionary periods of stress or at birth. These irregularities are danger-signals prophesying what may happen to the child of the nervously exhausted individual unless there be proper training at the periods of stress, training which will involve brain, nervous system, nutrition and exertion.

The degeneracy which results from nervous exhaustion is a prophecy of what may be rather than a destiny. As the dentist is among the earliest of the medical spe-

* Presented to the Section on Stomatology, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

cialists to whom application is made it comes within his power to outline a course of training and treatment which will prevent the child evincing irregularities from becoming a moral lunatic, an imbecile, a paranoiac, a sexual lunatic, or a victim of lesser forms of degeneracy. Here is a point at which the dentist is afforded an excellent opportunity to take part in the beneficent work of the prophylaxis of the medical profession, which has done so much for the race. The three dentitions, as they are called appropriately by Dr. Talbot, mark three periods of systemic evolution when it is possible to affect the mental and physical development favorably.

NERVOUS DISEASES.*

RELATIVE CURABILITY AND THERAPEUTIC INDICATIONS.

BY JOHN PUNTON, M.D.

PROFESSOR OF NERVOUS AND MENTAL DISEASES, UNIVERSITY MEDICAL COLLEGE; EDITOR INDEX-LANCET, ETC.
KANSAS CITY, MO.

Nervousness has been universally designated as the American disease. European and American literature abounds with alleged facts to substantiate this claim. That nervous diseases prevail to an alarming extent in this country no one assumes to deny. Moreover, their protean forms and intractable character render at times both their diagnosis and prognosis exceedingly difficult and uncertain. In view of this it is fitting that we devote some attention to their relative curability as well as devise means and methods for their relief.

According to Dana¹, there are 176 diseases of the nervous system, and while the majority of these are comparatively rare and uncommon there are at least sixty that are very common and extremely important, and it is these more especially with which the general practitioner comes more or less in contact and should be thoroughly familiar.

Owing to the extreme complexity of the nervous apparatus and its consequently laborious study, its diseases taken as a whole present more difficult problems to the physician in the manner of diagnosis, prognosis and treatment than any other class of disease. Yet I contend that few physicians, comparatively speaking, are willing to pay the necessary price—which implies close confinement for years to its special study, including practical hospital training and experience—to master the essentials, knowledge and principles that underlie the diagnosis, prognosis and treatment of even the more common nervous diseases. On this fact largely hinges the stigma of their incurability, for the relative curability of any given nervous affection is ever based on the accuracy of its early diagnosis.

In this connection it is unfortunate that even up to the present time no accurate scientific classification of diseases of the nervous system can be offered the physician to aid him in solving a doubtful diagnosis. The reason for this is obvious, but the day is rapidly approaching when all diseases of the nervous system will be recognized as due to some change of structure involving its function, and its true pathologic character strictly defined. Until this is accomplished, however, we are compelled to acknowledge our weakness by the use of terms which, if not strictly correct, have at least the redeeming feature of being practical.

By universal consent nervous diseases are roughly divided into two great classes, organic and functional. the

former including all lesions visible to the naked eye or by means of the microscope, and the latter those in which so far the lesion has not been discovered, but their effects consist in an impairment of nerve action.

In the first class the nerve elements are not as a rule primarily affected, but are so secondarily, in which event the morbid process commences outside them. In the second class this rule is completely reversed, the nerve elements being primarily affected. Moreover, as many diseases are found to affect more than one portion of the nervous apparatus, a convenient classification recognizes their special seat. According to this view, we may have diseases affecting the brain, the spinal cord or the peripheral nerves. The differential diagnosis of each, however, depends entirely on the physician's knowledge of the structure and function of the parts involved.

When we come to carefully analyze the lesions which form the basis of nervous affections we find they are not specifically numerous, and often while being essentially the same in character in different situations, they present an entirely new clinical syndrome, varying with their seat, so that a knowledge of their special effects on one part is not the equivalent of another. This accounts for a wide range of clinical phenomena which again increases the difficulties to be encountered in their diagnosis. Generally considered, the chief lesions affecting the nervous apparatus can be arranged under six groups: 1. vascular; 2. inflammatory; 3. degenerative; 4. toxic states; 5. congenital malformations, and 6. functional or unclassified lesions. The first include such conditions as anemia, hyperemia, hemorrhage, thrombosis, embolism, atheroma, aneurysms, etc.; the second all forms of meningitis, myelitis and neuritis; the third, locomotor ataxia, lateral sclerosis, progressive muscular atrophy, bulbar or nuclear palsies, infantile and other palsies. Friederich's disease, muscular dystrophies, growths and tumors; the fourth, syphilis, alcoholism, lithemia, morphinism, mercurial and all other toxic states; fifth, hydrocephalus, microcephalus, spina bifida, kyphosis, scoliosis, rickets, idiocy, etc.; sixth, neuralgias, hysteria, migraine, epilepsy, neurasthenia, catalepsy, paralysis agitata, chorea, tics, tetanus, exophthalmic goiter, occupation neurosis, etc.

The general effects of the lesions producing these pathologic states, as before remarked, present a wide and varied range of symptomatology which conforms to their special seat. When they are studied in relation to their effects on the brain, spinal cord, and peripheral nerves, the chief diseases they are responsible for in these situations are the following:

1. *Brain Diseases.*—In early life the chief nervous diseases affecting the brain are the various forms of meningitis—viz., pachymeningitis and leptomeningitis, tuberculosis and epidemic or spotted fever—and epilepsy. Meningitis and epilepsy, however, may and do occur at all ages. Next in frequency perhaps are the various forms of infantile and other palsies, viz., monoplegia, hemiplegia and paralysis of the cranial nerves. In adult life cerebral hemorrhage, thrombosis, embolism, softening and syphilis are perhaps the chief diseases, while in addition we may have cerebral abscess, tumors and the various cranial nerve palsies.

2. *Spinal Cord.*—When we consider diseases of the cord, we find the lesions producing them are even more limited than those of the brain, and are indeed comparatively few in number. While undoubtedly the great majority of its diseases are in a measure due to both quantitative and qualitative changes in the constituents of the blood, yet the vascular lesions are so uncertain in the

*Presented to the Section on Neurology and Medical Jurisprudence, at the Fifteenth Annual Meeting of the American Medical Association, held at Columbus Ohio, June 6-9, 1905.

¹Text-book on Nervous Diseases.

production of symptoms that such conditions as congestion and anemia or even hemorrhage of the cord are not easy to demonstrate. New growths, and tumors of the cord, are also on the whole extremely rare, so that the most common and consequently the more important diseases of the spinal cord are those due to inflammatory and degenerative lesions. The diseases which they produce, while presenting a wide range of variability, consist chiefly of the different forms of meningitis and myelitis together with their secondary effects resulting in the various kinds of sclerosis and atrophy. We must also remember that the cord is not only liable to suffer from lesions affecting the nerve elements primarily, but it also suffers in consequence of disease outside them, by compression, which may be due to new growths, tumors, inflammatory products, or even hemorrhage. This often results in determining degenerative and sclerotic changes giving rise to their equivalent diseases.

3. *Peripheral Nerve Diseases.*—Clinical observation and experience also teaches us that the diseases of the peripheral nerves consist chiefly of the various forms of neuralgia, neuritis, ties, spasms and paralysis of individual or groups of nerves, together with the accompanying changes common to each. Time forbids further enlargement on these; suffice it to say their unilateral character suggests their source of origin.

4. *Functional or Unclassified Diseases.*—Besides the diseases known to be due to definite lesions of the brain, spinal cord, and peripheral nerves, there are a number already referred to, which affect more or less all parts of the nervous apparatus, but so far their pathologic character has not been strictly defined. These constitute the so-called functional nervous affections such as hysteria, chorea, neurasthenia, paralysis agitans, catalepsy, epilepsy, etc., and these are by far the more prevalent and common and relatively of greater importance than the rest. By virtue of the purely subjective character of their clinical phenomena, their diagnosis is often very obscure and misleading, consequently many a curable case becomes incurable either through sheer ignorance of their nature and character, or lack of enforcing appropriate methods of treatment.

Practical knowledge and experience prove conclusively that when the two great classes of nervous diseases are duly compared irrespective of their seat, the organic are well-nigh incurable, while the so-called functional affections, are, if recognized early, for the most part curable. While there are notable exceptions to this rule, more especially when the diagnosis is made early and appropriate methods of treatment duly enforced, yet its validity cannot successfully be disputed. The time has arrived, however, when a uniform consensus of opinion is highly desirable by those most competent to judge of the relative curability of nervous diseases, on account of their great importance as well as the wide divergence of text-book opinion as to their prognosis. Take for example epilepsy. As it now stands every writer is authority unto himself, and wields his own statistics to suit his own ends. As a result scarcely any two authors agree, and the profession at large are grievously misinformed. If for instance we refer to Ranney, we are led to believe that by the relief of eye strain a large percentage of recoveries from epilepsy can confidently be looked for.

Dana states "that 5 to 10 per cent. get well." Sachs says, "I have seen but very few cases of absolute cure of genuine epilepsy." In a late paper read in my hearing, by Dr. Wharton Sinkler, on this subject, he summed up as follows: "After consideration of the cases above referred to, in which after prolonged intervals, even as

long as twenty-nine years, there has been a recurrence of the disease, we are forced to the conclusion that it is not justifiable to consider any case of epilepsy cured, no matter how great has been the interval of freedom from attacks and appearance of normal health." The discussion which followed the reading of this paper was taken part in by the leading neurologists of this country, and all concurred in the opinion that idiopathic epilepsy, if not entirely incurable, was nearly so. In spite of this, in every community we find persons claiming that they possess a remedy which is a "sure cure for fits," and yet we as a profession, while looking on with disgust, fail to put forth any special effort to prevent such fraud and deception.

Now, what has already been said of epilepsy is largely true of other diseases, such as locomotor ataxia, lateral sclerosis, paralysis agitans, and many other diseases which, after reaching a certain stage, are regarded by the best authorities as incurable. In spite of this there are men, both in and outside of our profession, who claim to possess the power to "cure these incurables," and send us reprints urging us to send our incurable cases to them. I have seen many a poor incurable nervous invalid swindled of his last dollar by such men on the promise of a cure, when all the reliable evidence is against such a prognosis. There never was a time in the history of medicine when so much fraud and deception was practiced on the helpless neurotic incurable as the present.

In view of this, and the prevailing diversity of text-book opinion in regard to the prognosis of nervous diseases, it is highly desirable, indeed an actual necessity, that a text-book authorized by this or some such competent association, be furnished the medical profession, in which is set forth reliable data based on actual facts as demonstrated by practical clinical observation and experience by those most competent to judge of the reliable curability of nervous diseases. On account of their universal prevalence and dependence on disturbances of the functions of the nervous system, which by the way dominate all parts of the human organism, nervous diseases naturally come under the observation of the family physician more frequently in their incipient and curable stage than to any other class of physicians. It is to the general practitioner, therefore, that we must of necessity look for our greatest advance in their curability, and this can only be done by their early recognition and the enforcement of appropriate methods of treatment. Failure in these essentials is largely responsible for the reproach now cast on our professional ability to successfully cope with even the more common nervous diseases.

It is not until the incipient or curable stage is passed that as a rule the nervous invalid appeals to, or is referred for aid to the neurologist, and then it is usually too late to conscientiously offer the patient more than temporary relief. Hence the common slur so often flung at the neurologist as a reward for his services, viz., "About all you can do is to make a diagnosis and offer a bad prognosis," is wholly undeserved and at best reflects the gross ignorance and lack of dignified courtesy of its author.

All authority recognizes the vast dependence of the vital organs on the normal integrity of the nervous functions, and when this neurotic influence, either through sheer ignorance or indifference, is wholly divorced from the clinical study of general disease, failure to cure often of necessity follows. Too often the nervous system is erroneously regarded as an independent organ or as an appendage to the rest of the body, when in fact it is an integral portion of every part of it, not only having spe-

cial organs of its own but also entering deeply into the formation of every bodily organ, and the manifestation of their functional activity is due almost entirely to their special nervous innervation. As the physiologic integrity of the nervous system depends entirely on its normal blood-supply, anything which tends to interfere with this, or change its relative constituents, at once impairs its specific energies. This result is either a local or constitutional lesion which, according to its nature and character, as well as seat, gives rise to clinical phenomena which indicate its pathologic characteristics. Scientific observation and experience also warrant the assertion that in their pathogenesis, functional nervous disorders owe their origin to and largely depend on qualitative and quantitative changes in the constituents of the blood, due to various causes. This results in defective innervation of the body organs, inducing malnutrition and consequent disease. As the general body organism suffers primarily, the actual neurotic basis of the malady is often obscure or held in abeyance, and this leads to mistakes in diagnosis. Consequently too often the effects are treated, rather than an effort made to remove the cause. Subsequently the real nervous affection matures, making itself manifest by actual nervous phenomena, but instead of a functional neurosis, we now have a true organic affection to deal with, which renders the case well-nigh incurable.

The transition from the curable to the incurable is often so insidious and apparently innocent in its effects on the general organism that the patient is given the benefit of the doubt by his family physician, and procrastination becomes the rule until it actually signs the death-certificate.

If it be true that functional nervous disorders in their pathogenesis are largely due to lesions of malnutrition then the therapeutic indications for their curability is self-evident. Anything that has a tendency to re-establish and maintain the normal correlation that should exist between the blood-supply on the one hand and the nervous innervation of the various bodily organs on the other becomes both a prophylactic and therapeutic agent in the prevention and cure of nervous diseases. As the means to attain this end are already well known to you, their special consideration at this time would carry us far beyond the scope of this paper; suffice it to say that too often the important rôle played in their production by hereditary influences, environment, and education are too often overlooked, and their true significance greatly misunderstood. If I have succeeded in calling attention to a subject which deserves more than a passing notice the object of this paper will have been fully met.

MALIGNANT DISEASE OF NOSE AND THROAT*

BY JONATHAN WRIGHT, M.D.

BROOKLYN, N. Y.

It is well known to all of us that statistics, those figures which *do* occasionally lie, have shown that malignant disease is apparently increasing among mankind. I have seen no statistics to prove whether this is altogether an absolute increase or whether it is to some extent a relative one. It must be remembered that the average duration of life has been prolonged into that period which is most liable to malignant disease. Emphasis has of late been given to the old observation that cancer is the disease of the rich and luxurious, of the beef eater, of the high liver and the slothful. There has been consider-

able evidence advanced to show that some forms of malignant diseases are due to the presence of a micro-organism coming in contact with the soil made suitable for its growth by the general predisposing cause of age, or by coming in contact with a local benign growth adds a malignancy to cell proliferation which we recognize in the terms carcinoma and epithelioma. It is by the light which exceptional cases throw on the questions of etiology, of differential diagnosis, and of treatment, that we may hope to advance our knowledge of this desperate and mysterious affliction of mankind. Numerous and perfectly reliable reports are appearing from time to time, which remind us that cancer, and especially sarcoma, although as a rule fatal diseases, are occasionally self-limited. The tumors which vanish of themselves in the course of time have been proved, so far as clinic and microscopic history can do it, to be occasionally true sarcoma or carcinoma. While this at times may throw a shade of doubt on the actual efficiency of the same operations it at the same time teaches us that an epithelioma or a sarcoma is not necessarily an inexorable summons of the grim avenger. Such exceptional instances are occasionally observed in the nose and throat. It may be conjectured that this is the true explanation of some of those cases in which malignant growths have failed to recur after internal operations of the pharynx and larynx. While it is within the range of possibilities that such an operation may be so complete or the disease may be so localized that every island of vicious epithelium or every nodule of perverted connective tissue is separated from its healthy environment, it is difficult for the experienced histologist to conceive that this is the usual result. The unusual course of malignant tumors ending in recovery without operation suggests that in some cases the microscope may not be so much at fault as our conception of certain forms of cell growth in the tissues. The importance of this part of the subject lies in the vista which it suggests. If there are certain influences in the animal system which under certain conditions are able to destroy the continued potentiality of malignant cell proliferation, it is not unreasonable to hope that these influences and these conditions may be revealed by the persistent endeavors of future generations of patient and honest biological workers.

I have been requested to present for your consideration that aspect which malignant disease assumes when it has its seat in the upper air-passages. In the time allotted to me it is not possible to elaborate in detail and it would not be profitable or interesting for you to hear a complete exposé of even this limited part of the general discussion. It would be superfluous to present to you the typical pictures made by a sort of composite photograph of the various cases personally observed or to be found reported in current medical literature, of epithelioma or sarcoma respectively of the nose, of the pharynx, and of the larynx. Neither would it be conformable to the plan of this discussion, as I understand it, to limit myself to the consideration of any one subdivision of the subject, and yet any complete and satisfactory study of the subject must be made by dividing and subdividing it. Malignant disease of the nose presents a clinical picture entirely different from that of the larynx. A sarcoma of the nasal septum presents problems of pathology, differential diagnosis, and treatment entirely separate from those of an epithelioma of the fauces. It seems best, therefore, that I should touch upon certain points which have interested me in connection with the subject in the hope that they will also interest you, rather than to attempt to superficially cover the whole field.

* Read at the Fifteenth Annual Meeting of the Fifth District Branch of the New York State Medical Association, held in Brooklyn, May 23, 1899.

A very few cases of pure adenoma have been reported as occurring in the nose, but a larger number have been observed in which the adenomatous elements were combined with sarcomatous or epitheliomatous characteristics. During the last three or four years I have from time to time examined adenomatous tissue removed from the nasal fossa of a case under the care of Dr. Hinkel of Buffalo. Although it repeatedly recurs in an enfeebled woman, in the upper regions of the nose, it has not as yet shown evidences of malignancy either clinically or microscopically. As this case has been reported elsewhere I take this occasion to say that it still presents every appearance of a papillary adenoma, a form of growth which was described many years ago by Billroth as "Zottenkrebs." I have also had occasion to microscopically examine four or five specimens of adenosarcoma and adenocarcinoma of the nose, and incidentally I have become acquainted with the clinical histories of these cases. One or two such I have had the opportunity of observing clinically, although in the practice of others. I have also read with care the very few reports of such cases to be found in literature. From this somewhat extended study of what is usually regarded as a very rare nasal affection it seems to me evident that while adenoma of the nose is exceedingly rare, and while, even when found to exist without evidence of malignant degeneration, it is exceedingly liable to take on later malignant characteristics. Adenocarcinoma and adenosarcoma are to be ranked among those forms of malignant disease of the nose which run a comparatively slow course, the patient frequently living many years after its inception. They would therefore often be exceedingly favorable cases for operation, but for the fact that they usually occur in very old or very much enfeebled individuals, while the operation in itself is one usually attended with much danger in that class of patients. As to the diagnosis between adenoma and adenosarcoma or carcinoma it must be remembered here as elsewhere that in the presence of clinical evidences of malignancy the value of a negative microscopic diagnosis is of small value. This is not due here, however, so much as elsewhere in the nose and throat to the fact that it is difficult or impossible to obtain a proper piece for examination, but because it is often impossible for the microscopist to give a reliable opinion as to the significance of many of the areas of round-celled infiltration in these growths, which may be either inflammatory or sarcomatous, or of those irregular areas of epithelium, which may be either simple exaggeration of the glandular epithelium or the manifestations of the suspected epitheliomatous involvement.

Besides adenosarcoma of the nose there are other forms of sarcoma when they occur on the cartilaginous nasal septum, which not only run a comparatively benign course but frequently fail to recur after extirpation, and therefore present a very favorable prognosis when seen early.

"Two Italian observers", independently of one another, have lately recorded observations which I have not hitherto seen in print, in regard to the spindle-celled, the endothelial and the angiosarcomata of the nasal septum. They assert that these forms of sarcoma in this situation in many instances present a benignity of clinical history and a failure to recur after incomplete removal, which are in striking contrast to some of the other forms of nasal sarcoma, and of the same form situated elsewhere. From my own experience with seven or eight cases of sarcoma of the nasal septum, examined microscopically,

I am inclined to corroborate these statements, but I confess I have been rather inclined to impugn my own powers of microscopic analysis rather than to suppose that any marked exception to the usual history of sarcomatous growths should be found to occur in the neoplasms of the nasal septum. As a matter of fact, however, sarcomata in other situations present many such exceptions to their usual malignity; and this is true only to a less extent of carcinoma. Nearly every one of wide experience has seen a prognosis founded on microscopic findings, and even with corroborating clinical history, refuted by the subsequent result. A large number of such instances have recently been reported from the personal experience of the observers. I refer to the papers by William Bennett² and D'Arcy Power³. So far as I know there is nothing but experience and an otherwise unsupported theory which teaches that such and such form of cellular growth is fatal in its course. Hitherto, when in any case the results have not been conformable to this experience, we have supposed that the diagnosis and not the theory has been incorrect. Too many such instances are now being constantly reported to allow us to rest easy under this assumption. If the parasitic nature of cancer is established, as the investigations of Russel, Sansfelice and Roncali foreshadow, we can have reason to suppose that an individual may not only be immune to cancer infection, but if infected, develop enough vital resistance to the germ to overcome the potentiality which it has given cell growth.

The differential diagnosis of malignant disease of the nose presents certain features which the locality brings into prominence. So far as the nasal chambers are concerned the adenomatous growths are the only ones which present much difficulty in the diagnosis between sarcoma and carcinoma. The microscope quickly decides between a small round-celled or a fibrous growth and epithelioma. So far as the clinical history, the prognosis and the treatment are concerned, it is of little consequence whether a malignant growth of the nose is an adenosarcoma or an adenocarcinoma. Epithelioma of the nasal chambers is an exceedingly rare occurrence. While it is occasionally necessary to consider the differential diagnosis between tuberculosis and syphilis of the nose, it is certainly very rare and as a matter of fact I have never heard of any case presenting any difficulties in the differential diagnosis between tubercular and malignant disease of the nose. But the cases which give rise to the most serious problems of differential diagnosis are the granulomata of syphilis and small round-celled sarcoma. In the one case we are enabled by simple modification to cause the disappearance of a vicious and alarming infiltration of important structures in a manner which is an almost unique vindication of drug therapy. In the other case we are in the presence of a rapidly growing disease which adds to the usual horrors of a malignant tumor, that of causing not only great suffering but that of mutilation and distortion of the human countenance; for in contradistinction to the benign forms of sarcoma of the nose which I have just mentioned, the small round-celled variety in this situation is the most malignant of tumors. It is therefore easily appreciated how vital is the importance of a prompt and accurate diagnosis. Of course there are a number of cases in which from the presence of various signs, it is easy to arrive at a reliable opinion. With these cases we are not at present concerned. The patient I have in mind presents himself with this history. He has suffered for several months with unilateral nasal ob-

² Lancet, Jan. 7, 1899.

³ Ibid, March 4, 1899.

¹ Martuscelli; Archivio Italiano di Otolgia, 4, 1898; Strazza; *ibid*, 2, 1899.

struction and has had occasional attacks of epistaxis. He usually at first complains of no pain. The nasal region on one side is distended and swollen and the nasofacial furrow is obliterated, the lower eyelid may be edematous and there may be lachrymation. There is a sanio-purulent discharge from the nostril. On intranasal examination a vascular tumor, with a granular surface, covered with mucus presents itself in the anterior nares, usually so far anteriorly as to be seen without the use of a speculum. It bleeds easily when touched with a probe. It is a difficult matter to make out its base of attachment. It may extend so far back as to be seen with the postnasal mirror. No odor of dead bone can be distinguished, as this in itself is usually enough to make the diagnosis of syphilis. The submental glands may be moderately enlarged.

It not infrequently happens that this is approximately the picture of these doubtful cases. Thus far it is not incompatible with the diagnosis either of syphilis or of sarcoma. Yet as has been said, it is absolutely imperative that the diagnosis should be promptly made. We remove as much of the exuberant mass as we can with the snare. If the mass is large, a hot snare may be used without danger of so charring the tissues as to spoil the piece removed for microscopic examination. Very copious and sometimes exhausting hemorrhage may follow the use of the cold snare, and when this occurs, the incident points to sarcoma, but not conclusively. The piece is given to the microscopist for examination. If he freezes the specimen for cutting sections and it is a round-celled growth, the microscopic image is blurred and indistinct, so that absolutely no opinion can be formed as to whether it is a simple inflammatory or sarcomatous granuloma. A properly hardened specimen may prevent a more definite idea of the nature of the growth, but only too frequently, and even then, differential diagnosis is still impossible. How unreliable an opinion expressed as to the nature of such structure is, I am sure many of you have had an opportunity of judging. A case has lately been reported in one of the French laryngological journals in which a hard chancre of the anterior region of the nasal fossa was mistaken for a sarcoma by a competent microscopist and a distinguished laryngologist who himself reports the case. A day was set for removing the upper jaw. There was some delay, and the roscola and other manifestations of syphilis supervening, the patient's jaw and possibly his life was saved. An exactly similar incident has once entered into my own experience with tertiary syphilitic disease. The frequency with which this sort of an incident repeats itself in an extended clinical experience, in every line of surgical practice, but especially in the observation of diseases of the nose and throat, is well known, if the error is not always frankly admitted. Here and there in medical literature will frequently be found reports of cases of mistaken diagnosis in which the mistake was discovered in time. I hope that it will not be thought too cynical to remark that in all likelihood quite as many mistakes are unrecorded because they were discovered too late. How many are never discovered we have no way of knowing, though you will remember that one distinguished confrère estimated that his would fill a graveyard. However this may be in cases of the kind I have just outlined, I am sure we are all of us ready to join with the distinguished French syphilographer in his admonition: "Dans les cas difficiles, pensez toujours à la syphilis, et pensez y encore."

We have seen that in these cases the microscope has failed to differentiate them and that brings us to the consideration of that other sheet anchor of differential diag-

nosis—the results obtained from the use of the iodid of potash.

I need not refer to the tendency of all new growths, whether malignant or not, if of recent origin, to recede to a certain extent under the use of the iodid of potash, except to draw attention to the liability of the observer of intranasal disease to be unduly impressed by this phenomenon in favor of a diagnosis of syphilis; because the recession of the growth within the narrow confines of the nasal chambers appears more marked than it does on the surface where there has been no definite and limited space to be modified by the increase or decrease of the growth. Time will soon rectify this difficulty, but two weeks is usually the shortest period of time in which under the use of the iodid of potash the diagnosis of malignant disease will become manifest.

Before we leave this subject of differential diagnosis of malignant nasal disease, one word in regard to the "clinical sense," so much relied on by many and frequently so valuable a mental possession. It is a faculty which is the articulate result of previous experience, but there is probably no faculty of the mind of the clinical observer over which it is necessary for him to keep such a close watch if he desires to escape falling into errors sometimes fatal to his patients. It is a brilliant mental equipment for the classroom, but for the difficult cases which we have been considering and which we may subsequently have the opportunity of following to the autopsy table, it is a mental equipment which should only be relied on in the absence of more demonstrable aids to diagnosis or as confirmatory of them. Malignant disease of the fauces, earlier giving rise to subjective symptoms and being more accessible to thorough examination than that of the nose, presents as a rule fewer cases in which the diagnosis for any length of time is a matter of doubt. Epithelioma, infiltrating the tissues more deeply and extending more quickly to ulceration than sarcoma, produces, more regularly than sarcoma, the lancinating pains which attend ulcerative affections of the fauces. From such a neoplasm a piece removed for microscopic diagnosis usually establishes the nature of the growth. It occasionally happens, however, that neither is the clinical picture conclusive nor is it possible to obtain a fragment for microscopic examination. I have had the opportunity of seeing many cases of malignant disease of the fauces, but the one which is most indelibly impressed on my memory was that in which the growth involved the root of the tongue without ulceration, on each side of the median line symmetrically, and also involving the hyoid bone. Although I had this case under observation in private practice for more than three months, I was unable in that time to make a diagnosis. The case is reported *in extenso* elsewhere.⁵

Sarcoma of the tonsil, while not a very common disease, is by no means a very rare one. The tonsillar tissue being a lymphoid structure and made up chiefly of small round cells, we should naturally expect the form of sarcoma to conform to that of the normal tissue. As a matter of fact that is what we observe. I have lately had occasion to study the literature of the subject and I have been able to collect the reports of thirty-two cases of sarcoma of the tonsil in which a satisfactory microscopic diagnosis was made as to the variety of sarcoma. To this number I may add one which has lately come under my own observation and another which I have examined microscopically for Dr. Hopkins of Springfield, a report of which has not yet appeared. Of these thirty-four cases all were small round-celled sarcomata excepting

five. Perhaps a further analysis of these statistics may not be uninteresting in connection with this subject. In twenty-one out of the thirty-one cases in which the age was given the patients were past 50 years of age, i. e., in over two-thirds of the cases. Dr. Bryant has reported a case of carcinoma of the tonsil occurring in a patient 17 years old, which is the youngest of which I have found a record. In my table of sarcoma cases I find five occurring between 10 and 20 years of age. The difficulty and importance of differential diagnosis in these cases lies not so much between sarcoma and carcinoma—the microscope if not the clinical aspect of the case easily settles that—but between sarcoma and simple hypertrophy or syphilitic disease. Syphilitic hypertrophy of the tonsil is very rare. I have had opportunity to see a case several times this winter through the kindness of Dr. H. M. Smith, in which the patient is at death's door, and in spite of the continued use of the iodid of potash and microscopic examinations the diagnosis is still a matter of grave doubt in my mind, as between syphilis and sarcoma.

Occasionally the history is one of simple hypertrophy. The growth is removed by tonsillectomy and the specimen is thrown away. Within a few months the growth recurs. This is a rare event for simple hypertrophy, but in a young person not so rare an event as the occurrence of sarcoma of the tonsil. In the case I examined for Dr. Hopkins, the recurrent growth did not differ sufficiently from simple hypertrophy, in microscopic appearance, to lead us to suppose that it was anything else, although subsequent recurrences revealed the undoubted nature of the growth. It may be a matter of interest for me to venture to give so much of Dr. Hopkins' forthcoming report as to say that his case has presented the most gratifying results from the use of Dr. Coley's toxins. In a recent case of my own, however, the course of the disease was in no way arrested by the toxins and he died in four months from the beginning of the history of the growth. These small round-celled sarcomata of the fauces, owing to the rapidity of their growth and their rapid infiltration of the tissues when they once spread from the tonsil, and owing to the important structures which surround them, are usually inoperable.

The larynx, which is frequently described as a cartilaginous box whose walls are said not to be traversed by lymphatics, is theoretically the site from which a cancer might be thought to be removed with the least danger of local and systemic recurrence. Owing to the obtrusive function of the larynx, a change in the voice forcing itself on the attention of both the patient and his entourage, it should be possible to detect in its earliest stages even the most insidiously growing tumor. As on this early recognition depends a cancer patient's chance for life, we see in this early impairment of function another reason why the statistics of laryngeal cancer should be of the best; but as a drawback to these obvious advantages there are other respects in which we soon recognize, after a study of the question, influences which modify our favorable assumptions.

In the first place a large proportion of laryngeal neoplasms extend so far upward as to infect the lymphatics entering over the upper border of the thyroid cartilage. In the second place, while malignant disease at a very early stage causes a notable change in function, it may be easily mistaken for conditions which are trivial and which give rise to no pressing indications for interference; or even if the case is regarded with suspicion, the difficulties in differential diagnosis are so considerable and the gravity of operative procedures are so great that

valuable time is frequently lost in arriving at a proper judgment as to treatment. In the third place the patient naturally hesitates to submit on account of what at the time appears a trifling annoyance, to the mutilation if not the annihilation of the larynx, and to the not inconsiderable danger to life itself. Even simple thyrotomy is not an operation so devoid of danger as amputation of the breast. The removal of the lining of the thyroid cartilage adds very materially to the liability of a fatal result, while laryngectomy, either unilateral or total, is one of the gravest of surgical operations and one only likely to be decided on in the face of the absolute certainty of a miserable and lingering death without such treatment. It is seen, therefore, that epithelioma of the larynx presents various special aspects of its own.

A discussion of these points as they have been alluded to may be as good a plan as any to bring the subject under your consideration. Notwithstanding the fact that anatomists have not traced lymph-channels through the cartilage, thus forming a direct channel of infection to the deep ganglia of the neck, there is a moderately thick network of lymphatics in the intralaryngeal mucosa, which communicates with the chain of cervical glands through the thyrohyoid and cricothyroid spaces. While therefore, a growth of the true cords may exist for many months without external metastasis, exemplified clinically by the late appearance of enlarged cervical lymph-nodes, we should not expect this to be the case in malignant disease of the epiglottis or of the false cords, or even of the laryngeal ventricles. Practically we find that the facts are fairly in accord with this anatomic theory, and every competent clinical observer recognizes the importance of taking into consideration the original site of the growth and the extent to which it has invaded the surrounding tissues, the latter being an exceedingly difficult, in many cases an impossible, thing to do by laryngoscopy. As to these points it may be well to quote the experience of others.

Jursz' cases are as follows: Out of 15 cases the growth involved the whole larynx in 1, right side in 2, epiglottis in 3, true cords in 4, false cords in 3, arytenoid and interarytenoid space in 2.

Of Morrell McKenzie's 53 cases, 28 sprang from the ventricular bands.

Chiari⁶ has recently given the results of his experience with laryngeal cancer. The disease began as follows: On the left vocal cord in 16 instances, on the right in 11, epiglottis in 6, arytenoid cartilage, arypiglottic folds in 13, and was undetermined in 21. It will be seen, therefore, notwithstanding the discrepancies of varying experience, that a very large proportion of these malignant growths begin on the vocal cords. It is well to remember that these cases are not only the ones which earliest give subjective symptoms which should bring them under the notice of the laryngologist, but they are the ones also which, as far as I am able to judge from my own experience and from that recorded by others, present the best prognosis when promptly operated on. On the early recognition of laryngeal cancer depends, as has been said, the patient's chance of life. We cannot here enter on a full consideration of the signs which led to such a diagnosis, but there are certain statements which will bear reiteration whenever this subject is mentioned. In a man past 30, who has never before had any nose or throat symptoms, the gradual super-vention of hoarseness lasting for more than a few weeks should always lead to a laryngoscopic examination. Any growth in the larynx of such a case should be regarded

⁶ Annales de mal de l'Oreille, March, 1896.

by the laryngoscopist with suspicion. As large a piece as possible should be removed for microscopic examination, and in case the microscopic diagnosis is one of malignancy no time should be lost in proceeding to a radical extirpation, if the case is an operable one, because the mechanical injury made by the forceps in a hitherto quiescent malignant tumor of the larynx is extremely apt to stimulate it into rapid growth and infiltration of the surrounding tissues. It probably is this fact which led to the former supposition, so completely exploded by Semon's statistics, that a benign growth might be changed into a malignant one by meddlesome intralaryngeal surgery. The question as to how far a cancer of the larynx may have invaded the tissues, except where the disease is seen on the vocal cords in its earliest stages in one of difficulty. It is the rule rather than the exception that a thyrotomy, affording a direct view of the disease, will reveal an extent of involvement of the soft parts not seen in the laryngoscopic mirror. Were it not for this fact there are doubtless some cases of epithelioma in which endolaryngeal operations by skillful hands might suffice as a radical means of extirpation. Indeed, the remarkable statistics of B. Fraenkel⁷ amply prove this but they also prove rather that he is the possessor of a diagnostic acumen and a manual dexterity to which many of us can lay no claim. As has been forcibly said, so far as endolaryngeal operation is concerned, the laryngologist should see *nolli me tangere* written boldly on a case of laryngeal cancer. A cancer of the laryngeal ventricles may have infiltrated and destroyed the underlying cartilage and be directly continuous with the perilaryngeal tissues without presenting a picture in the laryngeal mirror, or evidence to external palpation, which reveals the extent of the disease. It is not so difficult to ascertain whether a growth is high enough to have passed over the upper border of the thyroid cartilage and infiltrated the extralaryngeal tissues at that point. An enlarged cervical gland, pain, palpation will frequently reveal the condition and thus render the prognosis exceedingly grave. While any disease of the larynx quickly gives rise to subjective symptoms, and while the microscope and the iodid of potash are the sheet-anchors of differential diagnosis, it is sometimes impossible in the first instance and unwise in the latter to make use of them. Certain flat ulcerations or smooth round tumors offer no opportunity for the removal of tissue by forceps, for microscopic examination. On the other hand, in certain cases there may be so much inflammatory infiltration of the mucous membrane, and thereby so much narrowing of the laryngeal lumen, that potassium iodid can only be safely administered while the patient is in bed and under the careful supervision of a surgeon ready to do a tracheotomy at a moment's notice for the relief of a stenosis resulting from a comparatively slight increase of congestion, following the administration of the iodid of potash. While the graver forms of laryngeal edema from the use of this drug are sufficiently rare, an amount of laryngeal congestion, which under ordinary conditions would be insignificant is not infrequently sufficient to cause dangerous dyspnea in a larynx or trachea already narrowed to the danger point.

Occasionally carcinoma of the larynx will begin in such a way as to simulate localized or even non-specific diffused inflammation, and the difficulties in differential diagnosis are considerable. One or two such instances I have seen, and it may not be unprofitable to discuss this form of incipient laryngeal cancer. While a man in middle life, who has previously had no nasal pharyngeal

or laryngeal lesion, is extremely unlikely to have a simple chronic inflammatory lesion begin in the larynx without marked exciting cause for it, such as unusual voice strain, exposure, or the inordinate use of alcohol, this is not the case with those patients in whom these conditions obtain or who are exposed to the causes mentioned. Therefore, in this type of the disease the habits and the occupation and the condition of the nose and pharynx are of very great importance in arriving at a proper understanding of the case. As to chronic alcoholism, it must be remembered that individuals suffering from it are quite as frequently habitués of the club as of the saloon. A man does not by any means need to be a common drunkard to suffer from chronic alcoholism of the upper air-passages. The nose and the pharynx must always be carefully inspected in searching for the cause of laryngeal conditions which may be simply inflammatory or may be malignant. The thickening of the posterior laryngeal wall and of the interarytenoid space may mean chronic laryngitis as the result of atrophic rhinitis or of chronic alcoholism, or it may be the incipient lesion of tuberculosis, but such a condition in incipient cancer is extremely rare, though not entirely unknown. The cancers causing a swelling of the interarytenoid space are usually those which have their origin at the lower end of the pharynx and the beginning of the esophagus and secondarily invade the larynx, although they may do so early in the disease and the laryngeal symptoms may be the initial ones. A unilateral thickening at the posterior commissure and a limitation of the movement of one of the arytenoids is more apt to be due to cancer or syphilis than to a non-specific inflammation. The microscope is of little value in these cases owing to the difficulty in procuring a piece for examination, and when obtained the report is frequently of a doubtful nature. Pachydermia verrucosa of the larynx, a thickening of the surface epithelium, as pointed out by Virchow at the time of the Emperor Frederick's illness, frequently presents very puzzling histologic pictures closely resembling epithelioma. As pointed out by Fraenkel, it is impossible to know the nature of a tumor of the laryngeal ventricles until it has so infiltrated the tissues that an operation, in the event of malignancy, is out of the question. It pushes the membrane covering it into the lumen of the larynx and is itself hidden from view. Such an appearance may be also due to a gumma, a tubercle, a so-called prolapse of the ventricles, or some rare form of tumor of a benign character. I have seen several such cases which, although exceedingly puzzling, did not prove to be malignant. It is impossible to exhaust the subject of differential diagnosis of malignant disease of the larynx in its incipency, when the diagnosis is so important, for nearly every case has some peculiar combination of symptoms of its own.

There are some cases, and unfortunately they form a very large proportion still, but a proportion which is steadily diminishing, which at the first glance are seen to be hopelessly inoperable. No question arises except as to when to do a tracheotomy and how much morphin to give. These cases, when followed throughout their whole miserable course, teach only one lesson, and that is that any hope, however forlorn, of freedom from local recurrence after a radical operation, is never to be discarded in any case. Death as the immediate result of an operation offering such a hope is not to be regarded as an entire defeat, but rather as the less of two evils. When there is a chance for life the patient should be told the truth and all the pros and cons explained to him. It must then be left with him to choose, and to choose promptly,

⁷ Archiv. f. Laryngol., vi. 2.

between an operation which often entails such frightful mutilation and a more frightful lingering death. Suicide has occasionally been chosen by patients who have recovered from a laryngectomy and found life without a larynx unbearable, and it has been urged by some surgeons of great experience that total laryngectomy results in a condition worse than death, and is therefore an unjustifiable operation. Other surgeons think differently and, what is perhaps more to the point, this view is not the universal one with patients who have undergone the operation. At any rate, it does not seem to me that it is the province of the surgeon to decide for such an individual whether or not life will be worth the living.

I conceive that to be a question between the patient and his Maker. Without operation death, as the result of the disease or of his own act, leaves him with little choice. After a so-called successful operation he does have a choice between life such as it is and death. It may be said that this question does not always arise in every operable case of laryngeal cancer. It is exceptional when it should not be considered. As has been said, it is impossible to be sure from the laryngoscopic image that a malignant growth, however apparently limited, has not so far extended as to make anything less than a total laryngectomy manifestly a futile operation. Hence the patient must usually be prepared beforehand for this eventuality.

It will perhaps not be well for me to enter into further discussion of the many points involved in this subject of operation for laryngeal cancer, either as to the statistics of the results of operation, or as to the questions of operative technic and the post-operative treatment. With these I have had but little personal experience. As to an artificial larynx, so far as my observation goes, nature usually makes a better substitute even when there is no air path left from the lungs to the mouth, and the patient breathes permanently through a tube or through a trachea stitched to the episternal notch. Some of you are doubtless familiar with recent cases which have regained all intelligible voice produced by means of air forced from the pharynx, after being partly swallowed, past some fold of vibrating mucous membrane. The results in these cases are surprising.

73 Remsen Street.

Correspondence.

Divided Authority in Yellow Fever.

NEW YORK, June 29, 1899.

To the Editor:—No little popular interest has been aroused in New York by the announcement promulgated by Quarantine Officer Doty of the discovery of a serum which is believed to be prophylactic against yellow fever and may be considered to have curative value. This has become known through the announcement which Dr. Doty gave to the daily press, for the medical pronouncement has yet to be made in some one of the professional papers.

The gist of the discovery set forth by Dr. Doty appears to be that his bacterial assistant, Dr. C. B. Fitzpatrick, has succeeded in isolating a germ or micro-organism from certain cases of yellow fever which were detained at the quarantine station on Swinburne Island in 1897, and that from the cultures of this germ he has produced an efficient serum.

In this announcement Dr. Doty rather detracts from the originality of the discovery by making the statement that a former assistant of Giuseppe Sanarelli has declared that this

germ and its counteracting serum are identical with those discovered two years ago by Sanarelli in his researches at Montevideo. It is said that Sanarelli has had the opportunity to supplement his laboratory experiments by conducting tests of inoculation and treatment on human subjects supplied him by the government of Uruguay from its institutions for the insane. Yet the last reports from the River Plata are to the effect that the antiamarillic serum of Sanarelli has resulted by no means as well as its discoverer expected. In view of this fact it seems that the discovery announced by Dr. Doty amounts to no more than the performance in New York of work not only already done in Montevideo but also sufficiently tested on the South American coast to give reasonable grounds for doubting its value.

Apart from this feature there are other topics which need some consideration.

In the first place, Dr. Doty, health officer of the Port of New York under the state government, says that the work has been carried out to success by Dr. Fitzpatrick. But Dr. Fitzpatrick appears as an assistant bacteriologist of the department of health of the city, he is therefore a city and not a state official. This is not the only instance in which the officials of the state and city bacteriological services have been found shifting back and forth from one appropriation to the other as need may be considered to arise.

Of more moment is the bearing of this work on the general service of the quarantine in the country. It must be remembered that Dr. Doty is a state official charged with the duty of preventing the incoming of contagious disease by sea into the State of New York. But as New York is the principal port of passenger entry on the Atlantic seaboard its quarantine is the quarantine of the whole country. This properly falls within the province of the Federal government, which has provided in its marine-hospital service an efficient system of protection, with agents in all the principal shipping ports from which disease might approach the United States. It is not considered that any study put by Dr. Doty and the New York State quarantine on the germ of yellow fever can be considered as impeding the Federal Quarantine of the Marine-Hospital service, and in the present case nothing has yet been done but the duplication of work and expense in line parallel with that already in hand in the Marine-Hospital work. No one would wish to impede the work of research, no matter by whom done, but it is proper to call attention to a chance of difficulty which is not as remote as it might seem to those who have not the opportunity to watch the practical operations of such dual systems of precaution. Suppose that Dr. Doty had not only announced an interesting scientific discovery but had declared that he would adopt it in his department of work. He has apparently a perfect right to do so. If he should choose to establish his, or Dr. Fitzpatrick's, or Sanarelli's, antiamarillic serum as a cure for yellow fever there is nothing in the law of the state to interfere. He might, if one of the transports from Cuba were to come to quarantine with yellow fever aboard, as may well be the case at any time, decide to inject his serum to cure the sick and to produce immunity in those who have been exposed and have not yet been attacked. If this were done and the serum should prove as ineffectual as it is reported from Montevideo to be, it is easy to see that a number of danger centers would be incorporated in the community of not only New York State, but of even distant states to a distance regulated only by the speed of railway travel and the period of incubation of the germ. Yet if such a mistake were in contemplation it would be seen that the Federal quarantine would take active steps and protect not only New York but every other state which might be endangered, and it would do this without much consultation with the local authorities.

This may seem an exceptional contingency and so remote

as not to need consideration. On the contrary such an event has already happened, not in New York, but at a port similarly situated on the outer edge of the continent—San Francisco. Here the situation was the same as at New York; there was a local quarantine whose officers were responsible only to the State of California. Some few years ago the State quarantine admitted to pratique a vessel from an Oriental and infected port. The Federal authority protested and in the end interfered. The strained relations were taken into the courts and finally settled in favor of the Federal system.

Now, such a state of affairs might arise in New York, for the same conditions exist. It would be all the more likely because the yellow fever serum is no new thing to the Marine Hospital surgeons. They have already had it under examination and have pronounced by no means in its favor.

Dr. Fitzpatrick says that the bacillus which was found in large numbers in connection with the cases of yellow fever under his examination at Swinburne Island is scarcely to be distinguished from bacillus coli communis. Under the microscope they look the same and they take the stain in the same way; in fact it is probable they would not have been considered specific of the yellow fever if the subjects had exhibited a sufficient supply of other bacilli not yet identified with any other disease. To this bacterium has been assigned the name of bacillus icteroides. The bacillus has been recognized as that on which Sanarelli has employed his time, the recognition having been certified to by a former assistant of the bacteriologist of Montevideo. In default of a decisive method of identification by the microscope the only means left of proving the specific nature of the bacillus icteroides as associated with the causation of yellow fever is by the result when administered to small animals. Here there is disagreement. Dr. Fitzpatrick and Dr. Sanarelli claim that small animals show the characteristics of yellow fever when under the intoxication of the bacterium which they have isolated. Other authorities deny this and produce their own experiments in proof of their contention. Of course, it is understood that if bacillus icteroides is not the specific germ of the yellow fever or is not a different organism from bacillus coli communis—which even its most ardent supporters admit that it most closely resembles—then the serum which is prepared through its employment does not carry immunizing or curative value in yellow fever.

Sanarelli's antiamarillic serum has not passed into its second year without meeting opposition. It has been under study by, among others in this country, the Army Medical Museum in Washington. The distinguished bacteriologists who have there been conducting researches have reached the conclusion that the micro-organism on which Sanarelli's, and therefore the New York investigator's, serum depends is akin to hog cholera and therefore is not specific of yellow fever. It thus appears that the most that can be claimed for the discovery which Dr. Doty communicated to the press is that it amounts to no more than the successful production here of what Sanarelli produced in 1897 in Uruguay. But that serum has been discredited by competent authorities in this country and elsewhere, particularly on the South American coast, where the opportunities for practical application of the serum have been abundant.

W.

Illinois Society for Prevention of Consumption.

CHICAGO, June, 23, 1899.

To the Editor:—One week ago there was organized in this city a society having for its object, as its name indicates, the prevention of tuberculosis. Relative to this topic and apropos of it is what the JOURNAL and the AMERICAN MEDICAL ASSOCIATION has advocated for several years, viz., that the United States Government should have a department of public health

and a competent scientific physician as medical secretary of the same. In this respect the Government is behind the times.

At the Columbus meeting of the ASSOCIATION, Dr. Joseph M. Mathews, in his presidential address, among other things stated, "That it was incumbent upon the ASSOCIATION as far scientific investigation can do so, to eliminate tuberculosis from the land, a disease so dreaded in character that it actually does remove yearly one-seventh of the population of the universe."

I have often thought that statistics are sometimes imaginary, and not as reliable as we would desire, but Dr. Mathews' statement in this respect is acknowledged by the scientific world to be approximately correct, so much so that the international conference which was held in Berlin last month to consider this topic arrived at the same conclusion, as have other analogous scientific organizations, etc.; the result of this latter congress, as we are all aware, is that much good has already been effected.

We, as scientists, veterinarians, public officials, lawyers, merchants, dairymen, and others, who were represented at the meeting organized one week ago for this cause, should unite and co-operate in stamping out this dread malady.

The old maxim, "prevention is better than cure," certainly applies with equal force and greater efficiency to tuberculosis. I quote again from Dr. Mathews' address, "That a committee be appointed from the AMERICAN MEDICAL ASSOCIATION to prepare a careful report on this subject and submit the same to the next session of Congress."

The attention of Congress has been called to this appalling fact year after year for several years, by the physicians throughout the United States, and particularly by the special committee of the ASSOCIATION, which was appointed in 1892, whose bill was endorsed by many scientific bodies of our country, advocating the idea of a department of public health for this nation, having a proper, able, and scientific medical secretary at its head to rank in dignity with other cabinet officials; had this been done years ago, the United States Government, through its department of public health, would have accomplished incalculable benefit in educating the people in preventing the disease, and thus would have been the means, possibly, of saving thousands of precious lives.

All Europe at the present time is on the alert regarding the great importance of preventing consumption. Throughout England various scientific associations have awakened to the great importance this subject deserves. We should not only devise the best methods of prevention, but our Government, state and municipal authorities should adopt measures for the care of this class of its citizens. That pulmonary tuberculosis is contagious under certain conditions is a well-known fact. Hence it is necessary to adopt measures to prevent its communicability to the healthy classes.

As to management and treatment, when tubercle bacilli are discovered in the sputum of a patient, a change of climate, all other things being equal, is perhaps the first *sine qua non* thought of. To eradicate or kill the germs is what is most desired. In pursuance of this, we must be careful not to hasten a patient's death by isolation and other methods. I am a profound believer that fully 20 per cent. of the cases of pulmonary tuberculosis are amenable to treatment that will result in recovery under suitable climatic conditions and the best hygienic environments. This is aside from any form of scientific treatment with drugs, though thorough and scientific in every detail, that might aid in increasing the percentage of recoveries.

I am a believer, also, contrary to what we are taught nowadays, that pulmonary tuberculosis is, or should be, classed as a hereditary disease—not that I desire to be understood that every case is one of heredity, and even though a hereditary taint be present in a family, that recovery should not be anticipated. Physical influence, and an optimistic view, as

much as is consistent, should enter into the cure, probably of every class of patients. My desire in the near future is to see a national department of public health where in the nation's laboratory, not only tuberculosis, but all other constitutional diseases that are preventable can be studied and investigated; indeed, where everything all along the line can be scientifically studied and statistics established irrefutably tending to "build up" the health and thereby promote the longevity of future generations and our citizens.

Very respectfully yours,

LISTON H. MONTGOMERY, M. D.

Antivivisection.

SAN FRANCISCO, July 3, 1899.

To the Editor:—It is wise to remember in the "between times," that the present seem to be years of surprising activity on the part of the many "antis." That the "antivaccinationist" and the antivivisectionist" will return from their summer vacations with renewed energy of bigotry, is in all probability certain. Being but human after all, they are subject to fatigue from overwork and senseless excitation; and also they are equally amenable to the recuperative processes of a vacation, during which lapse the people may be vaccinated or the scientific man may do some animal experimentation. But it is not well to think that the energy derived from the summer's rest will not be manifest in the fall and winter, and therefore to forget the unpleasant fact that even amongst the genus *homo sapiens* (Heaven save the mark "*sapiens*!"), are many animals which work to the evil of the race of man. When any defensive or offensive weapon, with which these "anti" gentry may be combated or attacked comes to hand, it should be carefully kept, even if encountered by the way-side during a truce in the fight. In other words, "In the time of peace, prepare for war." Some little ammunition was manufactured at the recent annual meeting of the Medical Society of the State of California, and as this sort of ammunition serves to supply more than one gun, it should not be overlooked or forgotten.

During the discussion on a paper dealing with the subject of "Ovarian Transplantation" and based entirely upon original research, Prof. Le Conte, who was present and took an active part in the discussion, was asked to express his views on the subject of vivisection. He replied as follows: "In the question of vivisection, the trouble is that the contestants do not understand one another. On one side we have men in whom sentiment overbears judgment, and who, therefore, cannot appreciate the scientific position. On the other hand, scientific men and physicians do not make sufficient allowance for the noble sentiment which underlies the agitation. When such men as Alfred Wallace and Lord Coleridge are found on the side of the antivivisectionists, there must be some noble sentiment at the bottom of the agitation. What is it? It is, of course, *universal sympathy with all nature*, and especially *with all living things*. Surely this is one of the highest sentiments that can fill the human heart. I am sure we are not a whit behind them in our estimate of the transcendent value of such sympathy. All we insist on is that, to be rational, it must be in proportion to the grade of life. I will give two examples illustrating my point of view:

"Some years ago I was discussing this subject with a distinguished lawyer in San Francisco, a man of splendid ability and exquisite taste in literature and art, but unappreciative of scientific methods. He was an ardent antivivisectionist. 'Suppose,' said I, 'In a large city like London or New York, cholera or typhoid fever had just broken out: the vital question would be: How is the disease promulgated? There are two ways in which it may be decided—the one by experiment, the other by observation. By the one method we sacrifice ten or twelve animals, under conditions which we control, and come to the

conclusion that the disease is promulgated by drinking water. By the other method we passively observe the course of the disease in relation to the several sources of water-supply, and, after the sacrifice of thousands or tens of thousands of human lives, we come to the same conclusion. Now, which way is the more merciful? Which violates our sympathetic natures the more?'

"A few weeks ago I was discussing the same subject with a very intelligent and estimable lady. She expressed great surprise that I, whom she considered as a tender-hearted man, should defend vivisection. I knew that she was very fond, perhaps too fond—some of her friends think absurdly fond—of a pet dog. 'Would you not,' said I, 'kill a thousand fleas for the comfort of your dog? For the same reason I would sacrifice a thousand dogs for the life of one man; how much more, then, for the good of humanity. I might have added—but this would have been too hard on her—'Not that we love dogs less, but man more.'

"I repeat then, let us have as much sympathy as possible with life; the more the better, but let it be in exact proportion to the grade and value of life."

This discussion of the question of vivisection by Prof. Le Conte, himself a member of the medical profession, was particularly in order, following the paper read, for the paper was based entirely upon animal experimentation and showed results that warrant in the fullest sense the continuation of the work. If postcastration atrophy can be prevented, as was demonstrated, and if transplanted ovary takes on the nature and vitality of the host, as seemed to be pretty clearly indicated, then the expenditure of a few rabbits and dogs, under conditions where the questions of pain and distress are entirely eliminated, would bring in an immense return in the shape of suffering saved to humanity.

Sympathy with life we all have and must have; but let this sympathy with life as suggested by Prof. Le Conte, be accurately gauged to the grade of life and value of the animal in the scale of life.

Paraxanthin Theory of Poisoning.

CINCINNATI, June 27, 1899.

To the Editor:—You do me great injustice in your paraxanthin editorial in the *JOURNAL* of June 24. In the heading you use the word "disprove" while Putnam and Pfaff only claim that their research "indicates," etc. Dr. Pfaff, in the original title of his paper, used the word "disprove," but after my discussion of his paper, which you have not seen, he changed the title to read "indicates." The facts are that the leucomain theory of the origin of migraine is now stronger than ever, and Dr. Pfaff, after my discussion of his paper, did not claim that he had disproved the theory. In a forthcoming paper I shall make this matter plain, and in the meantime I refer you to the discussion of Dr. Pfaff's paper for further information. The use of the word "disprove" is most unfortunate in view of the large circulation of the *JOURNAL*. I am sure, however, you meant no intentional wrong.

Very truly yours,

B. K. RACIFORD, M. D.

AN OPERATION on an insane patient at the Wisconsin State Asylum at Mendota, for the relief of perforative peritonitis, revealed in the stomach and intestines a half pound of nails of all sizes, two pocket-knife blades and several twisted pieces of wire. Some of the nails were extensively corroded, showing that they had probably been in the stomach for some time. As far as saving life was concerned, the operation, owing to the advanced disease and serious nature of the lesions, was a failure, but the findings are interesting.

Current Medical Literature.

Annals of Gynecology and Pediatrics, June.

- 1.—**Celiotomy for Conditions Complicating Typhoid Fever.** J. Wesley Boyce.
- 2.—**What Can We Promise from Operative Treatment of Cancer of Uterus.** E. E. Montgomery.
- 3.—**Deaths after Abdominal Celiotomy.** W. J. Smyly.
- 4.—**Consideration of Parenchymatous Inflammations of Mouth and Tongue (concluded).** J. L. Goodale.
- 5.—**Hygiene of Public Schools.** L. W. Dean.

Obstetrics (N. Y.), June.

- 6.—**Inversio Uteri Complicating Placenta Previa: Etiology and Mechanism Considered.** Rudolph W. Holmes.
- 7.—**Picture-taking in Three Dimensions.** Charles Jewett.
- 8.—**Physical Diagnosis in Obstetrics (concluded).** Edward A. Ayers.
- 9.—**Frequency of Contracted Pelvis in First Thousand Women Delivered in the Obstetric Department of Johns Hopkins Hospital.** J. Whitridge Williams.

International Medical Magazine (N. Y.), June.

- 10.—**Case of Traumatic Effusions of Hip Joint.** C. G. Cumston.
- 11.—**Pathology of Gall-stones.** Joseph McFarland.
- 12.—**Concerning Immunity and the Use of Normal Non-immunized Serums.** W. Thornton Parker.
- 13.—**Functional Disturbances of Ocular Muscles.** W. L. Pyle.
- 14.—**Diagnosis and Treatment of Chancroid (soft Chancere).** J. D. Thomas.

- 15.—**General Consideration of Mucous Membranes of Upper Respiratory Tract.** D. B. Kyle.
- 16.—**Important Quantitative Tests of Stomach Contents.** Boardman Reed.

Post Graduate (N. Y.), June.

- 17.—**Etiology and Treatment of Chorea.** Jos. Collins and I. Abrahamson.
- 18.—**Use of Oxygen with Ether for Anesthesia.** C. S. Cole.
- 19.—**Address.** F. Van Fleet.

Medical Monograph (Topeka, Kans.), May.

- 20.—**Mutual and Intimate Relationship between the Eye and the Nervous System.** F. C. Hotz.
- 21.—**Iritis.** J. E. Minney.
- 22.—**Granular Lids.** H. L. Alkire.
- 23.—**Refraction of Trachomatous Eyes.** E. E. Hamilton.
- 24.—**Dry Electric Uniform Heat as a Therapeutic Agent in Ophthalmology.** F. B. Tiffany.
- 25.—**Report of a Case of Dermoid Tumor of the Conjunctiva and Cornea.** J. W. May.

Alabama Medical and Surgical Age, June.

- 27.—**Medicine as a Profession.** W. L. Bullard.
- 28.—**Epidemic of Typhoid Fever in Glee Vulcan, near River ton, Ala., in 1896.** Geo. T. McWhorter.
- 29.—**Ancient vs. Modern Therapeutics.** John R. Baer.
- 30.—**Etiology and Diseases Most Common to Escambia County.** S. C. Henderson.
- 31.—**Treatment of Asthma.** Robert C. Kenner.
- 32.—**Historian's Address.** J. W. Heacock.

The American Gynecological and Obstetrical Journal (N. Y.), June.

- 33.—**Perineal Laceration and Its Immediate Repair.** Frank C. Hammond.
- 34.—**Tuberculosis of the Mesenteric Glands.** Reuben Peterson.
- 35.—**Three Interesting Cases.** A. J. Downes.
- 36.—**Clinical Significance of Peptonuria in Pelvic Abscess, with Report of Illustrative Cases.** W. Frank Hashelen.
- 37.—**Further Report on Implantation of Uterus in Rectum, with Exhibition of Specimens.** Franklin H. Martin.
- 38.—**Gonorrhoea of External Genitals in Female.** A. B. Tucker.
- 39.—**Manual Dilatation of Cervix Uteri.** Daniel Longaker.
- 40.—**Remote Post-operative Pelvic Conditions and Their Symptoms.** G. A. Klebsch.

American Medical Quarterly (N. Y.), June.

- 41.—**Disease in Sigmoid Flexure.** Jos. M. Mathews.
- 42.—**Some Facts Concerning Treatment and Medical Complications of Typhoid Fever.** H. A. Hare.
- 43.—**Experiences in Intestinal Surgery.** M. D. Mann.
- 44.—**Fat and Fecundity.** C. A. L. Reed.
- 45.—**Close Relation Between Nasal and Cranial Cavities as Cause of Brain Disease.** Wm. C. Kraus.
- 46.—**Hygiene of Bedroom and Bedstead.** Lawson Tait.
- 47.—**Ointment and Pastes.** Ernest Wendt.
- 48.—**Effects of Modern Small-arm Projectiles.** C. B. Nacredre.
- 49.—**Correction of Nasal Deformities by Subcutaneous Operations.** J. O. Roe.
- 50.—**Case of Elephantiasis of Penis.** G. H. Fox.
- 51.—**Tuberculosis of Urinary Tract.** A. Vander Veer and W. G. MacDonald.
- 52.—**Septic Wounds and Diphtheria.** A. F. Rodgers.
- 53.—**Sphere of Nutritives in Typhoid Fever, Pneumonia and Gastro-intestinal Diseases.** C. A. Dundore.
- 54.—**My Experience with Protonuclein.** A. B. Faruham.
- 55.—**Artificial Feeding of Infants.** A. S. Everett.

Texas Medical News (Austin), June.

- 56.—**Ovarian Tumors.** A. J. Smith.
- 57.—**Typhoid Fever.** J. C. Holman.
- 58.—**Treatment of Granulated Lids.** Frank D. Boyd.

National Medical Review (Washington, D. C.), June.

- 59.—**Case of Carcinoma of Esophagus with Partial Stenosis Due to Extra Esophageal Metastasis.** E. R. Behrend.

Southern Medical Journal, June.

- 60.—**Treatment of Urethral Stricture by Electrolysis.** Julius F. Lynch.
- 61.—**New Method Employed for Relief of Impaired Hearing, Especially the Use of Photograph, Vibrometer, Vibrophone and Metronome Ear Masser.** L. J. Lautenbach.
- 62.—**Relations of Tobacco Using and Other Drug Habits to Alcohol Intemperance.** J. H. Kellogg.
- 63.—**Nitrogen Requirement of the Human Body.** G. H. Heald.
- 64.—**Dietetics in Diseases Affecting Nutrition.** A. J. Sanderson.
- 65.—**Journal of Medicine and Science (Portland, Me.), June.**
- 65.—**The Passing of the Provincial Surgeon.** Franklin C. Thayer.
- 66.—**Leucorrhoea and Its Treatment.** Robt. C. Kenner.
- 67.—**Maine's Materia Medica and Its Relation to the Summer Resort Season.** E. H. Judkins.

Pacific Record of Medicine and Surgery (San Francisco), June 15.

- 68.—**Contribution to the Study of Antral Disinfection.** J. D. Arnold.
- 69.—**Case of Melanosarcoma of the Conjunctiva; Death.** Geo. C. Pardee.
- 70.—**Empyema of Sinus Frontalis.** F. Feheiseo.
- 71.—**Ocular Neurostrabismus.** E. J. Overend.
- 72.—**Two New Instruments for Measuring the Monocular Field of Fixation.** F. B. Eaton.
- 73.—**Dietetics in Diseases Affecting Nutrition.** A. J. Sanderson.
- 74.—**Hydatid Cysts.** Thos. G. Inman.
- 75.—**Recent Work in Clinical Microscopy.** A. L. Rytkoekel.

Dominion Medical Monthly (Toronto), June.

- 76.—**Mistakes in Gynecology.** G. R. Cruttsbank.
- 77.—**Medical Bulletin (Phila.), June.**
- 77.—**Doctorate Address to Graduating Class of Medico-Chirurgical College, Philadelphia.** Jos. M. Mathews.
- 78.—**Spiritual Aids to Medical Science.** Jos. Krauskopf.
- 79.—**Tinea Capitis; Scabies; Alopecia Circumscripta.** John V. Shoemaker.
- 80.—**Laparotomy; Obstruction in Upper Portion of Rectum; Artificial Anus for These Weeks.** C. M. Phillips.

N. C. Medical Journal (Charlotte), June 5.

- 81.—**Practice of Medicine.** H. S. Lott.
- 82.—**Antiseptic Midwifery.** W. W. McKenzie.
- 83.—**Asepsis and Antiseptics in Surgery.** Goode Cheatham.
- 84.—**Chronic Gastro-Intestinal Catarrh.** W. H. McNally.

Northwestern Lancet (St. Paul), June 15.

- 85.—**Hernia.** A. McLaren.
- 86.—**Subinvolution of Uterus.** F. J. Campbell.
- 87.—**Some Abnormal Operations in Country Practice.** Thor Moeller.
- 88.—**General Melanosis.** R. O. Beard.
- 89.—**Alcohol.** W. S. Leech.

Columbus Medical Journal, June 13.

- 90.—**President's Address, Delivered before the Ohio State Pediatric Society.** Dickson L. Moore.
- 91.—**Why the Child Strains at Stool and the Way to Its Relief.** Thos. Chas. Martin.
- 92.—**Case of Carcinoma of Breast.** Elmer Sothorn.
- 93.—**Prevention and Treatment of Pelvic Inflammation in the Female by the General Practitioner.** R. R. Kime.
- 94.—**Some Interesting Cases in Rectal Surgery.** A. B. Cooke.
- 95.—**Four Cases of Infantile Monstrosities in the Same Family.** William M. Hestle.

- 96.—**Continued Fevers of North Carolina.** Benjamin K. Hays.
- 97.—**Treatment of Epileptics in Colony.** J. P. Edgerly.
- 98.—**Treatment of General Suppurative Peritonitis.** Stuart McGuire.
- 99.—**The Materna—A New Device for the Home Modification of Milk.** Henry E. Tuley.

New York Medical Journal, July 1.

- 100.—**Three Steps in the Tuberculous Process in Children.** David Bovard.
- 101.—**Shadowgraphs of Intestinal Villus of the Cat.** J. W. Hartigan.
- 102.—**On Importance of Operation in First Stage of Thrombosis of Sigmoid Sinus (following Acute Purulent Otitis Media), with a Report of Three Cases.** Gorham Bacon.
- 103.—**Comparative Test of Mixed-Fat Emulsion and Cod-liver Oil at the Hospital for Ruptured and Crippled.** New York. W. S. Merrens.
- 104.—**The Christian Scientist: What Shall We Do with Them?** F. Julius Carroll.
- 105.—**Excision of the Right Superior Cervical Ganglion of the Sympathetic for Glaucoma, with Report of Case and Review of Literature of the Surgery of the Cervical Ganglia.** James Moores Ball, Edwin C. Rowland and Willard Bartlett.
- 106.—**The Medical News (N. Y.), July 1.**
- 106.—**A Collective Investigation of Yellow Fever in the Island of Cuba.** D. T. Lainé.
- 107.—**Cranial Thrombosis following Aseptic Celiotomy.** Henry C. Coe.
- 108.—**Otitis of the Exanthemata from the Standpoint of the Pediatrician and General Practitioner.** J. Henry Troutnigt.
- 109.—**The Boston Medical and Surgical Journal, June 29.**
- 110.—**Address: The Expansion of Medicine.** E. H. Bradford.
- 110.—**The Non-retarding Action of Combined Hydrochloric Acid on Starch Digestion.** A. Enston.
- 111.—**Location of the Right and Left Borders of the Heart by Distance from the Median Line.** Francis H. Williams.
- 112.—**Chrysarobin a Specific for Warts.** G. W. Fitz.
- 112.—**Medical Record (N. Y.), July 1.**
- 113.—**Notes on the Treatment of Yellow Fever with the Blood Serum of Bacillus Icteroides, and its Preparation.** Chas. B. Fitzpatrick.
- 114.—**Further Contribution to Exclusion of the Intestine.** Frederick Kammerer.

- 115.—Grooved Perineal Canula to be used as a Guide in Performing Perineal Sections in Cases of Urethral Obstruction. Raymond Guitérrez.
116.—"III-effects of the Roentgen Rays as Demonstrated in a Case Herewith Reported. Daisy M. Orlean.
117.—Cystoscopy and Urethral Catheterization in Women. E. N. Liell.
118.—How to Retain your Grip on the Practice of Medicine. Sidney Davis.
119.—Foreign Bodies in the Throat. Herbert J. Hopkins.
120.—A Case of Acromegaly. A. Hymanson.
121.—An Unique Case of Pityriasis Versicolor. Wm. H. Gotthelf.
Philadelphia Medical Journal, July 1.
122.—"Cavendish Lecture on the Etiology and Diagnosis of Cerebrospinal Fever. Wm. Oeller.
123.—Expansion of Medicine. E. H. Bradford.
124.—"Laboratory of Hygiene of the Vermont State Board of Health. J. H. Linsley.
Maryland Medical Journal, July 1.
125.—"Diagnostic Signs in Diseases of the Kidney. Joseph T. Smith.
126.—"To Heal Vaccination Sores. A. K. Bond.
Medical Review (St. Louis), July 1.
127.—Syphilitic Cutaneous Scars. A. H. Ohman-Dumesnil.
Cincinnati Lancet-Clinic, July 1.
128.—Report of a Case. A. D. Stapleford.

AMERICAN.

1. **Celiotomy for Typhoid Fever Complications.**—Bove first remarks that until recent days typhoid fever was pronounced a contraindication to any grave surgical operation, but that more recently we have possibly gone too daringly in the other direction. He reports a case of salpingotomy and ventrosuspension of the uterus performed before the diagnosis of typhoid fever was made. The results were good and he thinks that his case, with those of Simpson and Cushing, demonstrates that relapse in typhoid fever may be produced by grave surgical operations, and that severe emergency operations may be done in this disease with a fair degree of safety, though ordinarily contraindicated.

2. **Operative Treatment of Uterine Cancer.**—Montgomery describes the condition and prospects for operation in uterine cancer, and concludes as follows: 1. Cancer of the uterus is a local disease in its origin which tends to invade the neighboring structures, but extends to the corresponding lymphatic glands much more slowly than in other parts of the body. 2. The chief dangers of relapse are from nests in the adjoining tissues, which have escaped removal, and reimplantation of fragments during the progress of the operation. 3. The data at our command forms no accurate basis on which to establish definite or positive prognosis. 4. From our present knowledge we must depend on the subsequent progress to determine the cure. If prolapse occurs it will most likely take place within the first six months. Should the patient escape two years, cure may be considered as having been established.

4. **Inflammations of Mouth and Tongue.**—Goodale considers the following phases of the subject: Suppurative inflammation of mouth and tongue, parenchymatous inflammation due to diphtheria bacilli; anomalies of circulation or angioneuroses; acute circumscribed edema of the mouth.

v. See abstract in JOURNAL, May 20, p. 1114.

7. **Picture-Taking in Three Dimensions.**—This article, of which the title gives an indirect hint as to its contents, is devoted to the subject of making casts of specimens of parts which it is desired to have reproduced for reference. The author thinks that in many cases they can supplement the rather more difficult pictures or drawings, and he describes the materials and methods which he would advise.

8. **Diagnosis in Obstetrics.**—This paper, begun in the May number, attempts to be a guide in antepartum, partum and postpartum examinations. The author considers pelvimetry, abdominal palpation, and gives a pelvimetry scale and table.

9. **Contracted Pelvis.**—Williams presents complete tables showing the frequency of this condition as noted in Johns Hopkins Hospital.

10. **Traumatic Effusion of Hip-Joint.**—This clinical lecture of Cumston describes a case of traumatic effusion of the hip-joint in a man 21 years old who was thrown from a wagon on a curb stone. He was treated with a posterior splint and moderate extension. After four weeks the bandage was removed and passive motion begun, and the patient encouraged to make some active movements. Eight days later he was allowed to leave his bed and the result has been a nearly complete recovery. The diagnosis of the condition is discussed at length.

11. **Pathology of Gall-Stones.**—McFarland describes the

pathologic conditions connected with gall-stones, the inflammatory and irritative conditions in the gall-bladder, the obstruction of the biliary ducts, cystic, hepatic, and common, the possibility of perforation and fever which often complicates diagnosis. He reviews the literature, quoting quite largely from Murphy's paper on the subject.

12. **Normal and Non-Immunized Serums.**—Parker's article considers the natural antitoxic action of the non-immunized or normal serums, and the argues at some length in favor of the view that they contain protective proteids.

16. **Quantitative Tests of Stomach Contents.**—Reed describes the simpler method of making quantitative tests of the stomach contents, the total acidity, the excess or deficiency of HCl, and the combined chlorine. He describes Toepfer's method in detail.

17. **Etiology and Treatment of Chorea.**—Collins and Abrahamson, while they mention the various forms of chorea, including Huntington's and Dubini's chorea, the tic, habit, senile and secondary choreas, confine their paper to the discussion of the ordinary type of Sydenham's chorea. They find that it is pre-eminently a disease of the young, though it may occur in mature life; that it predominates in the female sex in the ratio of three to two; that it seems to have certain racial preferences, being specially found in Jews. As to its seasonal occurrence, their figures are not exactly in accord with others and indicate nothing positive in this respect. Their statistics are also non-committal as regards the effect of school overwork, which is undoubtedly a factor. Chorea is hereditary, at least it seems to have a relation to neuropathic conditions and rheumatism in the family history. The direct action of rheumatism is of more importance, they think, than has been held to be the case by some authors. It is possible that chorea is a metarheumatic manifestation. The condition of the heart in this disorder may indicate previous rheumatic dyscrasia. Their studies oppose the views that it has any direct relation to infectious diseases except rheumatism. The exciting cause is generally some form of physical trauma such as fright, acute worry, highly wrought anticipation—very rarely gastro-intestinal irritation. It is especially liable to relapse. Brief mention is made of chorea gravidarum, which, like other choreas of adults, is a more serious condition, being, in fact, one of the gravest varieties. The mental faculties are involved to a certain extent in a certain proportion of cases. The chorea indicating a neuropathic predisposition is a form rather more serious than the mere disease ordinarily would seem. The treatment is simple. Rest is the most important measure. The patient should be put to bed and kept there if possible, but at least be made to keep longer hours in bed. Careful attention to the diet is necessary. Young children who have been accustomed to a mixed diet should be put at once on a milk diet carried to the extreme extent of tolerance. In almost every case the bulk of the diet should be milk and cereals. Any digestive complication or constipation should be met with the proper measures and a cold wet compress over the abdomen has often a very beneficial effect. Sprinkling of the spine with cold water on rising, followed by vigorous rubbing, is also very useful, and the wet pack before retiring is another measure that may be used. The medicines that can be used are few. The most important are arsenic, antipyrin, quinia, iron, exalgin and bitter tonics. Exalgin is of greatest service in the early stages of the disease in doses of from 5 to 3 grains repeated every five hours for children under 10 years. Chorea in pregnancy has much the same treatment, but is often accompanied with vomiting which will have to be specially met. It requires vigorous treatment from the start. While chorea is generally a self-limited disease, some cases are protracted and require the general treatment employed for neurasthenia. Electricity and the actual cautery have been recommended. Their value will probably rest in the mental effect produced.

18. **Oxygen With Ether for Anesthesia.**—Cole takes up this subject, on which he made a prior report in 1895, and speaks very highly of the value of oxygen combined with ether for anesthesia. Its only disadvantages are the expense, necessity for skilled administration and the possibility of not quite as effective anesthesia as with ether alone. This last is easily remedied by leaving off the oxygen. Its advantages are that the patient takes the anesthesia with much less

fear and more comfort, and more readily than ether alone. There is seldom any irritation of the air passages or the lungs, which makes it easy to keep up a continuous administration of the drug. There is practically no cyanosis. The blood may flow a little more freely, but he finds this not detrimental and thinks that if there has been any difference in the time required for anesthesia it is in favor of this combination. As regards the recovery from anesthesia, it is quicker, more comfortable and more complete than when ether alone is used. He reports twenty-four cases briefly.

19. **Medical Practice in New York.**—Van Fleet's address is in opposition to Senate Bill 644, as amended in Assembly bill 2338, concerning medical practice in New York State.

20. This paper was printed in full in the *Journal*, May 20, p. 1137.

21. See abstract in *JOURNAL*, May 13, p. 1112.

22. **Trachoma.**—Alkire considers trachoma as an infectious disease, favored by lower vitality, and he sums up the indications for treatment as follows: 1, absolute cleanliness and good hygienic surroundings; 2, improvement, if possible, of the nutrition of the body by correcting the existing abnormal conditions; 3, removal of the trachoma bodies and the use of antiseptic solutions in the eye; 4, correction of the refractive errors; 5, treatment of sequelæ according to the nature and indications.

24. See abstract in *JOURNAL*, May 13, p. 112.

26.—This paper appeared in the *JOURNAL*, February 4, p. 209.

32. **Address.**—Heacock's address was delivered before the Medical Association of the State of Alabama, at the annual meeting in April.

33.—See Abstract in the *JOURNAL*, April 15, p. 826.

34. *Ibid.*, April 1, p. 710.

35. **Three Interesting Cases.**—Downes reports a case of urethral fistula following the palliative curettement of a cancerous uterus relieved by celiotomy and by freeing of the adhesions binding down the ureter. This is the first case found on record of such fistula following the palliative curettement of a cancerous uterus and the only one where the procedure adopted was ever carried out. The second case was one of primary and secondary celiotomy for kinking of the bowels at the sigmoid flexure; the occurrence of fecal vomiting after the second operation is sufficiently rare to be placed on record. The third case is reported only for its rarity and is that of varicocele of the right lateral wall relieved by operation.

36.—See abstract in *JOURNAL*, April 15, p. 836.

37.—*Ibid.*, April 1, p. 709.

40.—*Ibid.*, April 8, p. 765.

41. **Disease in Sigmoid Flexure.**—In this article, Matthews describes four conditions of disease of the flexure: 1, simple irritation due to stagnation of intestinal contents with consequent congestion, which is best treated by giving a brisk aperient and a thorough washing out with warm water or water mixed with a slight amount of borie or carbolic acid. If this treatment does not complete the cure, a mild astringent like fluid hydrastis, $\frac{1}{2}$ oz. to 4 ozs. in water injected at bed time will probably finish the cure. Inflammation of the sigmoid is a somewhat more serious condition, an aggravation of the above described. Its treatment also consists of irrigation, mild astringents, and physiologic rest of the part. All mechanical irritations should be removed by aperient and injections. Then an astringent wash should be employed and later an oil preparation like the following: sweet almond oil, 1 pt., iodoform, 1 dram, subnitrate of bismuth, $\frac{1}{2}$ oz. This preparation should be shaken each time and 1 oz. in a teacupful of warm water deposited in the flexure every night at bed time for a week, constituting the third week of treatment, after which the cure is generally complete. Ulceration of the flexure is shown by casts of epithelium and pus in the stools, constant desire to evacuate the bowels, loss of flesh, pain over the left inguinal region in back and thighs. More active treatment is required; after usual purging, an injection of 2 ozs. of water containing 10 grains of nitrate of silver to stimulate the ulcerated surface to granulation. After that use the borie acid or carbolic solution and about the third week substitute the iodoform and oil. Matthews does not consider a

rigid diet necessary in these cases. He thinks a moderate amount of nutritious food is useful. Moderate exercise every day short of fatigue and special attention to the digestion and state of the bowels are other measures necessary. For cancer in the flexure the only curative method is resection, but colostomy or anastomosis around the flexure with a Murphy button or otherwise may be useful in some cases.

42.—See *JOURNAL*, July 1, p. 31.

43. **Experiences in Intestinal Surgery.**—This article, which is to be continued, gives a report of a rather remarkable case of a woman who underwent nine separate operations involving opening of the abdomen. The final one apparently produced a cure.

44. **Fat and Fecundity.**—Reed's paper is an elaborate discussion of the effects of the disturbances of the reproductive functions involved in obesity. The pathogenesis, course, diagnosis, prognosis and treatment of obesity are discussed. The reader is referred to the article itself as it is not easy to fully abstract it here.

45. **Nasal and Cranial Cavities and Brain Disease.**—Krauss calls attention to the dependence of disorders of the brain on those of the nasal and cranial cavities. The evil effects of deficient nasal respiration or of adenoids often have a very marked effect on the mental development, etc. He also calls attention to the bacteriologic importance of these cavities as routes of infection of the brain. He makes a plea for more careful attention to be given to the nasal mucosa than is at present the practice. The making of a nasal toilet should be a part of the daily toilet.

46. **Hygiene of the Bedroom and Bedstead.**—Tait, in his usual readable style, describes what he considers the right and wrong methods of furnishing the bedroom and of the construction of the bedstead. He describes the bedstead which he specially recommends and which he has named "the Lawson Tait bed." It is a simple iron structure.

49. **Corrections of Nasal Deformities.**—Dr. Roe's paper is a very fully illustrated surgical article giving various methods and results of operation for curing nasal deformities.

51. **Tuberculosis of Urinary Tract.**—The authors, Drs. Vander Veer and MacDonald, give here the results of study in thirty-four cases which are not themselves given in detail. Tuberculosis may appear in any part of the urinary tract as a primary infection. The two most frequent places of origin are the base of the bladder and the kidneys. From these, secondary infections occur. Primary tuberculosis, however, may be found elsewhere, for example, in the urethra. For purposes of diagnosis and treatment it should be considered from a dual standpoint: 1, as a local manifestation of a general systemic infection, and 2, as a purely local disease. This latter is the only one in which it can be considered from a surgical standpoint. The natural tendency of tuberculosis to heal is marked here as elsewhere, and many cases recover without removal of the infected parts under appropriate treatment, or spontaneously. Its early manifestations are very important. Vesical irritability with apparently normal urinary secretion is often an early symptom. Pain, before, during and after urination, particularly if referred to the perineum or middle of the urethra, is an important symptom. Hematuria occurs in more than half of the cases, and is often one of the first things to attract the notice of the patient. Pyuria, especially if intermittent and with an acid urine, calls attention to a possibility of tuberculosis and a spontaneous and intractable cystitis is also to be regarded as an indication. Retention is frequently a pronounced symptom of the early stages of tuberculosis, and as the disease advances, involving the deeper tissues, it is succeeded by incontinence. Neither of these, however, is constant. External physical examination gives very little assistance. The kidney is not often enlarged until the advanced stages of the disease. Instrumental exploration of the urethra or bladder should not be undertaken until one is satisfied that the urinary tract has been already infected. A most careful examination of the urine, apart from all local contamination, is essential, and where there is a failure to find the bacillus, inoculation of a guinea-pig is demanded. On account of the great danger of instrumental exploration, the authors seldom make but one examination, and that under the most careful aseptic precautions. Tuberculosis of the bladder

walls is most rebellious, and causes the greatest suffering. In eight cases operation by drainage was followed by cure in two and by pronounced improvement once, while the remainder were made more comfortable while they lived. The authors prefer the perineal route of operation as affording the easiest access and best drainage. In twenty-three cases of tuberculosis of the kidneys and ureter treated surgically, there were eighteen nephrectomies, with an immediate mortality of five; thirteen nephrotomies, with three deaths following operation, and three removed from exhaustion or secondary nephrectomy. Of the thirteen cases operated on by nephrotomy and partial nephrectomy, seven died, and of the remaining six two are well after prolonged treatment; one has a permanent fistula discharging pus and urine, but is in fair general health, while the others recovered after complete nephrectomy. The authors' experience coincides with that of others, that nephrotomy has little value as a curative operation, but is valuable as a preliminary and exploratory measure; twelve cases recovered after complete unilateral nephrectomy, which they consider a very satisfactory result.

59. **Carcinoma of Esophagus.**—Behrend reports a case of carcinomatous disease of the esophagus with metastasis to the retroperitoneal glands and pancreas.

62. **Tobacco and Alcohol.**—Kellogg maintains that the use of tobacco is the fundamental vice of a large proportion of cases of alcoholic habits and he has for twenty years refused to undertake the care of any case of inebriety without first stipulating for the renunciation of the use of tobacco also. The point that he especially makes is that the physiologic effects of tobacco are such as to give rise to a special craving for alcohol. His views are somewhat extreme as perhaps might be expected.

63. **Nitrogen Requirements of Human Body.**—Heald's paper is an argument for vegetarianism. He concludes from his *ex parte* study of the subject that the organism will maintain its nitrogen equilibrium with a smaller quantity of vegetable protein than of animal protein.

68. **Antral Diseases.**—In this article Arnold calls attention to the importance of diseases in the frontal sinus in cases of antral disorders, and he finds that in nearly 50 per cent. of all cases the infundibulum, which embraces the opening of the frontal sinus into the nose, is a grooved canal with a curvature in the direction of the normal opening of the antrum, and so enclosed by the projecting walls of the middle turbinated bone that it drains directly into the antrum of Highmore. He thinks that in every case of antrum suppuration, persisting after thorough drainage and thorough removal of the diseased bone, co-existing diseases of the frontal sinus will be found. He reports a case which led him to this discovery.

71. See abstract in *JOURNAL*, May 13, p. 1053.

72. *Ibid.*, April 15, p. 823.

76. **Mistakes in Gynecology.**—Cruikshank's paper is a plea for conservative practice in gynecology. He thinks that the influence of other pathologic conditions should be looked for and that this fact in the zeal for operation is overlooked and neglected. Many patients, he holds, suffer through this oversight.

85. **Hernia.**—This article, which is quite practical in its treatment of the subject, goes over the whole matter of the operative treatment of hernia. McLaren first mentions the fact that most cases of strangulated hernia are necessarily operated on by the general practitioner and are seldom reported in print. He refers to the necessity of promptness and states that the appearance of the intestines is not always a perfect guide to the prognosis. The worst appearance is when they have a dark grayish tinge, especially if there are small dark greenish spots. He thinks that in this case we should possibly not attempt to make a resection at once, but form a fecal fistula and wait for a secondary operation to restore the continuity of the bowels. The symptoms of strangulated hernia are, first of all, vomiting. This is the sign which he would most rely on. Fecal vomiting, however, is not absolutely fatal, for he has seen it occur thirty-six hours before operation which was successful. He warns against pushing the anesthesia in these cases, for fear of aspiration pneumonia which may possibly occur. The other symptoms of strangulation are: collapse, sickening pain, constipation, absence of impulse in the tumor. As regards treatment, he would certainly first use taxis, not, how-

ever, continuing the manipulation even as long as half an hour, as advised by Erichsen. In case this fails he would not wait to try other methods but proceed at once to the operation, under the most perfect antiseptic surroundings possible. The method he describes is Bassini's, which he considers the best, as it is founded on the correct anatomic principle of restoring the obliquity of the canal and closing the internal ring to its former size. In femoral hernia the obstruction is generally due to Gimbernat's ligament, and he thinks that the best exposure can be made by following Poupart's ligament. In dividing the point of constriction, the knife should be turned upward and inward, making several superficial nicks for the purpose. In a fairly recent case a radical cure may be obtained by using either the purse string or Bassini's interrupted suture in closing the canal, and drawing Poupart's ligament and the pectineal fascia together. In strangulated umbilic hernia we should first make the incision over the lower part of the sac, as the action of gravity and the weight of the clothing tend to produce ulcerations and adhesions at this point. If operation is performed sufficiently early the mortality of strangulated umbilic hernia need not be greater than that in the femoral or inguinal varieties. He has had the best results in these cases with Fowler's figure-of-eight suture, just picking up the edge of the fascia and the upper loop, taking in the adipose and skin layers. This suture keeps the fascia in accurate apposition and can be removed at any time. He leaves it for two or three weeks.

86. **Subinvolution of Uterus.**—Campbell thinks that the element of the patient's neglect enters more largely into the causation of uterine subinvolution than is usually considered, especially after miscarriage. In cases with old cervical laceration he has found that operation within ten days after a miscarriage seemed to give him better results, and especially aided the involution of the organ.

87. **Some Abdominal Operations in Country Practice.**—Moeller's paper reports some eighteen cases of operation, all but four of which were done at the patients' homes under more or less disadvantageous conditions. The majority were gynecologic or hernia operations. One was a difficult and complicated case of suprapubic cystotomy. He remarks about the difficulty under which the country practitioner labors in these cases where the patient cannot go to avail himself of hospital advantages, or immediate operation is imperatively demanded.

88. **General Melanosis.**—Beard reports a case of widespread melanotic growths throughout the abdomen, pigmentation of the urine, etc. The diagnosis of melanoid sarcoma and a very unfavorable prognosis was given. Contrary to expectations the patient did well, and now, ten years after the discovery of the condition and seven years after the attempted operation of laparotomy for its relief, she is in improved health and the original tumor has lessened in size. The case, he remarks, is worthy of report because of the number and non-malignancy of its melanomata, because of the sudden generalization of the disease and the accompanying melanemia, and because it is, so far as he knows, unique in its apparent recovery.

90. **President's Address.**—Moore's address dwells chiefly on the subject of schools, the hygiene of these, and of juvenile homes and hospitals. In the latter he thinks under-feeding is not an uncommon error. As regards inspection of schools, contagious diseases are a matter of general health precaution and do not fall under this head. But the question of school morbidity, and especially that actually due to school life is a matter of great importance. He refers to exercises, hygienic and calisthenic, the latter of which are of special value in the year or two preceding puberty. He also briefly refers to the effects of adenoid vegetations on the physical and mental development of the child.

91. **Why a Child Strains at Stool.**—Martin describes the anatomy of the lower bowel in children and especially calls attention to the disproportionate length of the colon and its mesentery, the thinness and lack of muscular development of the bowels and the existence of the rectal valves as features which produce the difficult defecation in young children. In the normally formed infant, escape from these troubles is assured in the course of development, but the trouble and suffering that they produce should be alleviated if possible. Diet, hygroscopic suppositories, and fluid enemata to liquidify the intestinal con-

tents are of service, as is also massage over the abdomen, also over the region of the colon in such a way as to directly propel the contents toward the opening and reduce the obstruction caused by any overgrowth of the rectal valves. This can be done by dilatation accomplished by gently introducing the skilled finger, which also excites the mechanism of defecation. Prolapse of the bowel, which is not uncommon in infants, is to be managed by the employment of proper measures for its reduction and correct postures at the time of the passage. A flexed position favors prolapse, therefore, extension of the limbs should be encouraged, the child assuming the erect or horizontal extended position.

95. **Maternal Impressions.**—Hestle reports four cases of deformed infant monsters brought forth by one woman, in the course of six years. The credit is given to fright on the part of the mother from seeing an opossum.

97. **Treatment of Epileptics in Colony.**—In this article, read before the American Medico-Psychological Association, the colony plan of the treatment of epileptics is eulogized and it is claimed that it has amply demonstrated its value to the epileptic and to the public.

98. **General Suppurative Peritonitis.**—McGuire advocates early operation in the case of suppurative peritonitis after the diagnosis is made. It is impossible, he thinks, to deal with the surface involved through a single incision, therefore, he advocates multiple incisions for drainage, and thorough eversion and irrigation of the bowels for cleansing purposes. In many cases the bowels will be found parietic and distended with gas, and for this condition he claims incision should be made, suturing it as soon as the gas escapes, and the bowels can be returned to the abdomen. Gauze strips should be employed and should be left in position as long as they are doing good. After-treatment is the same as in other cases of abdominal section. Rapidity of operation is most important, and while he thinks that perhaps his views will be considered as those of an extremist, only such heroic measures are likely to be generally followed by success.

100. **Tuberculous Process in Children.**—Bovaird, from an analysis of 75 cases of tuberculosis in the children's wards of the New York Foundling Hospital, found in no case any evidence of the entrance of the infection via the placenta or traumas. In no case were tuberculous lesions of the bronchial nodes absent nor in a single case was there infection of the intestinal tract alone, though in one there might have been simultaneous infection by both routes. He reports four cases illustrating his views and sums up as follows: "The primary lesion of tuberculosis in children is regularly in the bronchial lymph-nodes or lungs. Combining Northrup's series with those described in this paper, we have: Infection of the respiratory tract (lungs or bronchial tubes), 148; infection of mesenteric lymph-nodes, 3; indeterminate, 49. As to early manifestations of tuberculosis in children, these are extremely indefinite and uncertain. Tuberculous infection of the bronchial lymph-nodes, as a rule, can not be diagnosed. Latent tuberculosis is often roused and disseminated by the invasion of another disease (infection) such as measles, diphtheria, etc., the presence of tuberculosis not being suspected. The common type of tuberculosis in children is acute milary tuberculosis—it may occur in well-nourished infants. The course of tuberculosis is not often confused with chronic bronchopneumonia or enterocolitis. The early manifestations are progressive emaciation, fever, and the presence of rales over the lungs. These are insufficient for purposes of distinction. The terminal lesions include: a. Extension of the tuberculous process in the bronchial lymph-nodes and lungs, resulting in the formation of abscesses, cavities, etc. b. Diffusion of the tuberculous infection, constituting acute milary tuberculosis, the principal viscera being affected in the following order: spleen, liver, brain, kidney, heart. The involvement of the brain is most important, the meningitis being regularly fatal. c. When bone is involved and there is prolonged suppuration, waxy degeneration of the viscera may occur.

102. **Thrombosis of the Sigmoid Sinus.**—This paper consists of a report and discussion of three cases of thrombosis of the sigmoid sinus following acute otitis media. In two cases bacteriologically examined, in one the infection was due to the

pneumococcus, and in the other the streptococcus was found. The author strongly condemns the use of remedies like antipyrin and phenacetin to reduce the temperature of patients suffering with suppurating otitis media or mastoid disease, as they are liable to mask the condition and impede the diagnosis, so essential for early treatment. The principal points to which he calls attention are as follows: The impropriety of giving antipyretics in all cases of suppurative otitis media; the value of a bacteriologic examination of the secretion from the external auditory canal in all cases. The importance of operating at the earliest possible stage after a diagnosis of thrombosis has been made; the use of the normal saline solution during or immediately following the operation for sinus thrombosis.

103. **Comparative Test of Mixed-Fat Emulsion and Cod-Liver Oil.**—This paper gives the results of experiments made in the Hospital for Ruptured and Crippled in New York, as to the relative value of the mixed-fat emulsions and cod-liver oil. A certain number of strumous children were selected, the only condition being that constitutional treatment was required in addition to the surgical measures in progress and that the children should remain in the hospital until the conclusion of the test. Thirty-two cases suffering from joint disease were placed upon the emulsion and twenty-nine similar ones on cod-liver oil, given regularly in such a way as to be most easily taken. The experiments continued over 13 weeks and changes were noted weekly in regard to the following points: weight, local condition or suppuration, activity about the ward, color, and general condition. Each of these points is discussed in detail and two cases are cited. The author concludes his paper as follows: To summarize briefly, we see that 64 per cent. of the patients in the emulsion cases were suppurating and several were in a desperate condition. Of these, 65 per cent. improved. Of the oil cases, in which 20 per cent. of the patients were suppurating and none was in a serious condition, 50 per cent. improved. The weights, though continued through the whole experiment, were neither satisfactory nor conclusive, for reasons mentioned, with the exception of those for the first five weeks. These show the gains on the emulsion side to be nearly double and the losses about two-thirds those on the side of the oil. In color, 65 per cent. of the patients in the emulsion cases were improved, to be compared with 31 per cent. of those in the oil cases. Under general improvement, 68 per cent. of those in the emulsion group against 48 per cent. of those in the oil group, showed a gain, in spite of the much more serious condition of the former. In conclusion, it may be said that there seems to be a certain better appearance, impossible to classify, about the patients in the emulsion group, which is in advance of that which may be deduced from the notes, though they may show a striking gain over those in the oil group.

105. **Excision of the Right Superior Cervical Ganglion of the Sympathetic for Glaucoma.**—The authors of this paper report what they consider to be the first operation in this country to excise the superior cervical sympathetic ganglion for glaucoma. The ganglion was cut high up and all its branches severed and about one inch of the sympathetic below the ganglion was removed. The patient was immediately relieved from pain and the tension decreased to plus 1. Slight ptosis followed the operation. They think that the relief from pain alone will justify the operation and in glaucoma without complete loss of vision: they will operate upon the first favorable case. The paper concludes with a discussion of the literature on the subject and a brief bibliography.

106. **Yellow Fever in Cuba.**—Dr. Laine's paper is the result of a series of questions sent out to local practitioners of Havana in regard to the diagnosis, treatment, mortality, varieties, etc., of yellow fever. The majority appear to hold that diagnosis can be made within the first three or four days. As to the pathognomonic symptoms, there is a disagreement of opinion, but those who believe in their existence think that it is the syndrome that is pathognomonic rather than any one symptom. The treatment by Sternberg's method seems to have been pretty generally neglected in Havana and no regular system is followed. The mortality of fourteen physicians is an average of 23 per cent. and the majority of those replying to the questions consider the *fièvre de borras* and the acclimatization fever as varieties of yellow fever. The general opinion seems to be that the region of the wharves and water-front of Havana

is the most dangerous district of the city. As regards precautions, the opinions are not very definite.

107. **Crural Thrombosis.**—Coe discusses in this article the question of crural thrombosis following aseptic celiotomy and reviews the question as to infection, which he thinks is unproved, publishing also a letter from Dr. Wm. H. Welch, who is of the same opinion. He reports six cases of his own observation where the foci of infection could not be found, and reproduces brief abstracts of a number of cases reported by Wyder.

108. **Otitis of the Exanthemata.**—The special point in Truitt's article is the importance of early attention to otitis following infective eruptive disease.

109. **Expansion of Medicine.**—The annual address before the Massachusetts Medical Society by Dr. Bradford gives a historical sketch of the progress of American medicine, which is in the main gratifying. He goes over the medical history of the late war at some length and the general sanitary questions of the country are discussed. He regrets the small performances of America in bacteriologic study at the present time, as compared to some other countries, but on the whole his review is certainly encouraging.

110. **Starch Digestion.**—Austin publishes an experimental investigation of the non-retarding action of combined hydrochloric acid on starch digestion, and reaches the following conclusions: When a non-aluminous test-meal is given, free hydrochloric acid makes its appearance at the end of twenty minutes after eating, and at the end of half an hour the amount of free hydrochloric acid equals that of one or two hours after eating, where albuminous foods are taken, as shown by Experiment No. 9. Under normal conditions, the ptyalin of saliva digests most of the starchy constituents of food in the stomach within one or two hours, which takes place before free hydrochloric acid accumulates in the stomach to such an extent as to interfere temporarily with the diastatic action of saliva on starchy food. Those portions of starchy food which remain comparatively undissolved, and pass over to that part of the digestive canal where they are acted on by the pancreatic diastase constitute a very small portion of the starchy food taken. The administration of isolated diastase considerably enhances the digestion of starchy food in the stomach even under normal conditions, as shown by Experiments 7, 8, and 10. The elimination of the supply of ptyalin of saliva to the stomach will cause a marked retardation of starchy digestion in the stomach, as shown in Experiment 4. A maldigestion of starchy food, due to the deficiency of the diastatic power of saliva, can be regulated by the administration of isolated diastase, as shown in Experiment 12. The impression held by many that the diastase of saliva becomes non-active fifteen or twenty minutes after eating is totally erroneous.

112. **Chrysarobin.**—The summary of Fitz' paper is as follows: The claims of chrysarobin as a specific for warts may be summed up as follows: Success in a series of ten cases of warts on the sole of the foot in which the diagnosis was perfectly clear. Similar success in one case of warts on the hand. No failure in any case where the application was made repeatedly on the denuded surface of the wart. No subsequent recurrence of the warts.

113. **Treatment of Yellow Fever.**—Fitzpatrick reports on this article the results of experiments with serum prepared from the bacillus coli teroides at the instance of Dr. Alva H. Doty, health officer of the Port of New York. He has succeeded with this serum in saving guinea-pigs infected with a fatal dose of the culture of the yellow fever germ. Ten cubic centimeters of this serum was sufficient to prevent infection and death in a guinea-pig 300 grams in weight, while a much larger one without this protection succumbed to the same inoculation. This investigation has been referred to in the newspapers during the last week or two.

114. **Exclusion of the Intestines.**—Kammerer reports a case in which to close fistulas after an operation for appendicitis, the small intestine was united to the middle of the transverse colon with a Murphy button, the severed portion being closed with sutures, thus cutting off from the fecal circulation more than six feet of the small and large intestines. A second operation cut off the transverse colon above the transplantation. The results were good. He reports from literature five cases by Baracz, Obalinski, Friele, Wiesinger, and Parkhill,

and adds one of his own. In four of these no untoward symptoms followed complete occlusion. He describes these cases at length, and believes that unilateral exclusion may effect a cure for fecal fistula, and if successful, it is the best and simplest plan of treatment. He thinks that a diseased portion of the intestines should never be completely occluded, some escape for secretions must be allowed, and he regrets that all experimental work has taken this direction and that the secondary complete occlusion after primary exclusion should not have received some attention.

116. **Ill Effects of the Roentgen Rays.**—Orleman reports personal experience of Roentgen-ray dermatitis and ulceration which was cured by rest and skin grafting. She dwells on the therapeutic value of local rest and believes that had this been followed from the beginning, the recovery would have been more rapid. The following precautions are advised by Dr. F. H. Williams to prevent such accidents: 1. Never have the tube near the patient; it should be two or three feet away when using the fluorescent screen, and three feet or more away in taking photographs. 2. There should always be interposed a thin aluminum screen which should be ground by properly connecting it with the gas pipe. In treating these burns, it is of the first importance to realize that the local treatment is entirely secondary to a general treatment devoted to promoting the nutrition of the affected part.

122. See abstract on page 98.

123. See paragraph 109.

124. **Vermont Laboratory of Hygiene.**—Dr. Linsley, the Director of the Vermont State Laboratory gives here an account of the law organizing it and a description of its methods of work.

125. **Kidney Disease.**—Smith sums up his article on the diagnostic signs of kidney disease as follows: In conclusion it may be said that the nomenclature of kidney diseases needs to be relieved of the confusion which has so long attended it. Dropsy would seem to indicate a serious interference with the blood conditions. Uremia is complex in its nature and can be no more than an indication of functional or organic kidney disorder. Albuminous urine, as determined by the usual tests, means a faulty kidney. Tube-casts, except, possibly the hyaline, indicate serious kidney disturbances.

126. **Vaccination Sores.**—Bond, speaking of the obstinate sores which have sometimes followed vaccination, advises the use of nitrate of silver applications either in stick form or in an 80 per cent. solution, the latter being painless. Children do not resist it.

FOREIGN.

British Medical Journal, June 17.

Amputation of Lower Jaw. WILLIAM STOKES.—After remarking that nothing specially new in regard to the technic of the operation has been added of late years, Stokes reports a case of amputation of nearly one-half of the lower jaw for a multilocular cystic condition which was formerly called cystic sarcoma. The case he thinks of interest because it raises the question as to the origin and differences, clinical and pathologic, between unilocular and multilocular cystic maxillary growth, and also on account of the extension of the disease in this case to the temporomaxillary articulation. The operation was successful from a cosmetic point of view, as shown by the picture of the patient after the operation.

Treatment of Abdominal Palpitation.—WILLOUGHBY WADE.—The author remarks on the treatment of abdominal palpitation, a condition common in women and not infrequent in men. It is due to abnormally forcible pulsation of the abdominal aorta, which he considers must be due to excessive tension connected with contraction of the peripheral circulation; his treatment is the administration of nitroglycerin in doses of 1-200 of a grain given at bed time. He thinks that this drug will also be useful in cases of cold hands and feet which are not due to insufficient action of the heart, but to contraction of local arterioles.

Dissemination of Cancer of Breast. HAROLD J. STILES.—This paper is not capable of being abstracted in detail, covering, as it does, all the conditions, anatomic and pathologic, of mammary cancer. The author concludes, in agreement with Watson Cheyne, that the patient's chance of recovery lies in the first operation. If this fails, either from imperfect removal

of the disease or on account of its extent in the first instance, a later operation is seldom successful.

Probable Parental Form of Sharp-Tailed Filaria Found in Blood of Aborigines of British Guiana. C. W. DANIELS.—Daniels reports the discovery of what he considers a parental form of the sharp-tailed variety of filaria found in the natives of Guiana. He discovered it in the post-mortem examination of a native in whose blood both varieties had been found. He thinks that it will generally be difficult to discover it, as he suggests, its habitat is in the connective tissues. Several plates are given illustrating the type specimens.

Method of Operating for Umbilical Hernia, Whether for Radical Cure or When Strangulation has Occurred. HOWARD MARSH.—The author recommends certain modifications of the text-book technic of the treatment of strangulated umbilical hernia. The first is the isolation of the sac down to the opening through which it leaves the abdomen—that is to the level of the linea alba. The isolation of the sac is thus effected. A curved incision starting from the middle line above is carried over the right side of the swelling to the middle line below, and a similar incision is made on the left side, the two together forming an elliptic wound. These two incisions are so planned that they include the skin which covers all the front of the swelling, only enough being left to allow of the closure of the wound, without tension, in the middle line, when the hernia shall have been reduced and the sac removed. Next, the whole thickness of the subcutaneous fat is separated on either side from the outer surface of the sac, including its neck. This is easily carried out by a sweep of the finger and a few touches of the knife. Now, having the sac and its contents controlled, it is opened by an incision in the middle line long enough to afford free access to its interior. The omentum, any part of which when not near the neck may be cut away after ligation or clamping above and below, is unfolded and the intestines exposed, relieved of adhesions and returned. The operator then makes his way to the omentum where its neck emerges from the abdomen. This neck or stem he defines and isolates so that he can pass his finger completely around it. If it is adherent to the ring the adhesions must be separated. The stem is now tied in strands in the usual way, divided beyond the ligatures and returned into the abdomen. There will now remain the sac containing, perhaps, a large mass of more or less adherent omentum. The sac is cut away by dividing its neck at the level of the ring. Its edges are brought together with sutures, and the peritoneal cavity is thus closed. The ring itself is next obliterated by strong buried sutures and the external wound is closed. He claims that this method of first isolating the sac makes it easier to deal with its contents and the clamping and free division of such parts of the omentum as cover and obscure the intestines, saves time while dealing at once with the omentum where its sac emerges from the abdominal ring, instead of first separating, successively, the adhesions which connect it with the fundus of the sac, curtails the length of the operation one-half. This, he believes, will still further reduce the mortality of this formidable condition.

Myxedema Treated With "Colloid Material." ROBERT J. M. BUCHANAN.—A case of myxedema is reported which was treated with "colloid" material prepared from the thyroid glands, with the result of completely restoring the patient to his former condition so that he is now obliged to explain to his customers that he is the same individual formerly known to them before the treatment. The case is illustrated.

Medical Press and Circular (London) June 14.

Two Cases of Metatarsalgia. J. JACKSON CLARKE.—In this paper the author describes a couple of cases of this symptom, first described by Morton, for which he accepts the usual explanation of the misplacement of the heads of one or more of the metatarsal bones. In one of his cases he relieved the patient by having a special shoe made with a band of leather three-eighths of an inch in depth placed externally on the sole behind the heads of the metatarsals. The other case was relieved by operation.

Hey's Internal Derangement of Knee Joint. JOHN KNOTT.—The author concludes his paper, begun in a former number, and maintains that the possibility of misplacement of the fibrocartilage of a normal knee-joint, which condition is apparently commonly understood as Hey's internal derange-

ment, is a myth. He thinks the real explanation of the lesion is a slight subluxation of the head of the tibia with its adhering internal cartilages. It is caused by a slight rotation and internal flexion of the leg. An analogous misplacement of the outer condyle is the lesion causing the comparatively rare form which affects the external section of the knee-joint.

Australian Medical Gazette (Sydney, N. S. W.), May 20.

Two Cases of Stryngomyelia. G. L. O'NEILL and SINCLAIR GILLES.—The authors report two cases of stryngomyelia, one typical, the other having an involvement of the tactile sense, in which they think, however, that diagnosis was correct.

Genito-Urinary Pain. P. CLENNELL FENWICK.—The author reviews the anatomy of the nerves supplying the genito-urinary organs, and explains certain peculiar symptoms occasionally observed, among them asthma connected with urinary hyperacidity and relieved by proper treatment, tenesmus on urethral pain occurring in coition, and a rather curious symptom where pain is felt running from the umbilicus to the meatus on irritation of the former, which he finds is sometimes caused by neglect of cleanliness. In conclusion he asks whether so-called gonorrhoeal rheumatism may not be simply an advertisement of the urethral condition through the sympathetic system.

West London Medical Journal, July.

Cavendish Lecture on Etiology and Diagnosis of Cerebrospinal Fever.—WM. OSLER.—Dr. Osler alludes to the great mortality but comparative rarity of cerebrospinal meningitis, the periodic character of its outbreaks, its close resemblance to pneumonia in some respects and its difference in others, and then takes up the bacteriology of the disorder. Weichselbaum's discovery of the meningococcus after years of neglect has now become generally recognized as the casual germ, and Osler describes its peculiarities and his experience with it during the Baltimore outbreak. Excluding two mild cases in which no organisms were found, and one in which its presence was dubious and complicated with the streptococcus, he found it in thirteen cases out of sixteen in which lumbar puncture was performed. Councilman, Mallory and Wright have noted the association with other bacteria and this was especially notable in the autopsy cases of Osler. On the whole, however, his observations support those of Weichselbaum, Jaeger, Heubner, Councilman and others, that there is an organism, the diplococcus intracellularis, with special cultural peculiarities, that may reasonably be regarded as the exciting cause of the disease. The contrary view of Netter, that the pneumococcus is also the cause, and that the Weichselbaum coccus is a possible degenerate form of the pneumococcus is noticed and rejected as illogical and unwarranted. The diagnosis of cerebrospinal meningitis is not always easy and mortifying post-mortem disclosures are even more frequent than with pericarditis. Dr. Osler reviews certain features, such as the abrupt onset, the varying pyrexia, the skin rashes, the leucocytosis, not so high and persistent as in tuberculous meningitis, the more frequent arthritis or peri-arthritis, Kernig's sign, and lastly, though not by any means least, the use of lumbar puncture, than which no more valuable aid has been acquired within the past decade. Its possible therapeutic value is also mentioned with some facts rather indicating it than otherwise.

The frequency of sporadic cerebrospinal fever is still an open question and Dr. Osler gives the results of bacteriologic examinations by Dr. McCollum of 25 cases of meningitis, showing 6 of this form, 8 due to the pneumococcus, and 11 pyogenic and miscellaneous forms. Here he makes a digression on the meningitis due to the pneumococcus, its etiology, and almost universal fatality when a complication of pneumonia. The frequency of the primary type of this form is a matter for future study.

The lecture concludes with a brief section on treatment. Morphia was freely given for pain at Johns Hopkins and cool sponging was employed whenever the temperature exceeded 102.5 degrees. The mortality, 8 out of 18 cases in the hospital and 9 out of the total of 21, was not excessive, considering the severity of the cases. In two cases the spinal canal was opened, drained and irrigated, one of these being the first extensive laminectomy for acute spinal meningitis. While both cases died, as did also one by Dr. Musser, Osler considers this operation as a desperate remedy for a desperate disease, justifiable

in certain severe cases in which the spinal symptoms are very marked.

Bulletin de l'Academie de Medecine, May 20 and June 6.

Therapeutic Action of Cacodylic Acid and Cacodylate of Sodium. A. GAUTIER AND J. RENAULT.—All the advantages of arsenic treatment are obtained with these substances with absolutely none of its inconveniences. Each contains from 46 to 53 per cent. arsenic, and yet in such a combination that they are extremely soluble in water, non-toxic and non-irritating to tissues. Cacodylic acid probably combines with the cellular nuclei. Given by the mouth it does not produce diarrhea, melanoderma nor arsenic paralysis even with daily doses of 10 to 20 g. "It is a medicine surprisingly effective and applicable in the most unexpected ways, as a stimulant of nutrition, of assimilation and regeneration of the tissues and of their fundamental albuminoid principles. But its chief value lies in its power to stimulate the reproduction of the lymph-corpuses and especially of the polynuclear cells which rid the system of infection, bacteria and their products and also in its ability to cause a prodigiously rapid multiplication of the red corpuscles." It is therefore the method par excellence for sanitifying and incessantly renewing the blood and the tissues in such affections as the pretuberculosis condition, localized tuberculosis, diabetes, Basedow's disease, leucemia, etc. Gautier has been testing it for three years, and a number of reports of its use for seven months by other physicians were communicated, all extremely favorable. Renault administers the cacodylate per rectum: 5 c.c. of 25 to 40 g. sodium cacodylate in 200 grams of water. He recommends all arsenic medication by the rectum. In a case of splenic leucemia the number of red corpuscles was restored from 600,000 to over three millions in twenty days, and to normal in less than three months, with the cacodylate.

Physiologic Introduction to Section of Sympathetic. F. FRANCK.—The functions of the sympathetic as established by extensive research on new lines by Franck, include a propelling action of the eyeball by the action of the cervical cord on the muscle of Muller, showing that section must suppress or diminish exophthalmia. It is also a vasoconstrictor and dilator of the vessels of the intraocular circulation; section diminishes the intraocular tension and may prove useful in glaucoma. The cervical sympathetic does not dilate the vessels in the thyroid; it contracts them, and section therefore can only add a paralytic vasodilation to the active congestion of exophthalmic goiter. The thyroid vasodilators are contained in the laryngeals. It was impossible to discover any secretion exciting action in the thyroid on the part of the cervical sympathetic, but a cerebral vasoconstrictor action was established, although the cerebral vasodilating action is still merely hypothetical. Section can only promote the cerebral sanguine current, and, as treatment of epilepsy, etc., is problematic to say the least. The most important result of this research is the announcement that the entire sympathetic apparatus is endowed with direct sensibility and transports to the cervico-dorsal medulla centripetal nerves originating in the heart and aorta. Hence section of the sympathetic is effective by suppressing the transmission to the centers of abnormal excitations of cardio-aortic origin as well as in suppressing the centrifugal thyroid, cephalic and cardiac of abnormal excitations of cardiac irritations, the same as irritations of the sympathetic, are capable of inducing an ensemble of circulatory reactions which recall the accidents of Basedow's disease, including dilation of the thyroid vessels; consequently the effects of section of the sympathetic may be explained by its suppression of the routes of centripetal transmission in the reflex manifestations of aortic origin. This new idea of aortic sensibility transmitted by the thoraco-cervical sympathetic may suggest its resection for angina pectoris.

Presse Medicale (Paris), June 14.

Muscular Osteoma. REYNIER.—There are very few of these tumors on record, but radiography shows that they are more frequent than hitherto supposed. "They are probably caused by a fragment of periosteum being torn out at the insertion of the muscle, and favored by sanguine effusion, it proliferates in the form of a large tumor almost entirely in the body of the muscle." In the early bone-embryonic stage it casts no shadow in a radiograph, but is distinctly visible when the bone is fully formed. If it causes no disturbance, massage should be tried first and may reduce the tumor, but if the func-

tion is interfered with, the bony mass should be removed down to the actual surface of the bone beneath, not leaving a scrap of osteoma tissue, and carefully following its outlines in the muscle, so as not to encroach on the nerves and vessels in the muscle. Several cases are on record of death from septicemia or absorption of iodoform after ablation, showing that the absorption is very great in these lesions, and aseptis imperatively required. But with extra care the patient is dismissed completely cured, in entire possession of a member whose function seemed fatally compromised forever. Two cases are radiographed, 15 and 21 years of age, in which the elbow was involved, both fully developed in about six weeks after the traumatism.

Revue de Chirurgie (Paris), June 10.

Nervous Complications of Fractures of Lower End of Humerus. A. BROCA AND A. MOUCHET.—These complications appear chiefly in the young and were never noticed with other traumatic lesions of the elbow. "If electric tests indicate a serious lesion of the nerve it is best to operate at once, but if these tests are favorable, expectant treatment is preferable, as manipulations, massage and galvanic alternating current may remove the cause. If there is no improvement in four or five months, the nerve trunk must be sought, liberated, mobilized and possibly stretched. It may have to be dug out of a fibrous or osteo-fibrous sheath. If paralysis appears during the formation of a vicious callus, indicated by radiography, intervention is likewise demanded, as also with secondary paralysis caused by a badly reduced fragment, in which case it is not necessary to expose the nerve. Sensibility returns at once after intervention, but motricity may not be re-established till after weeks of massage and electricity. In case of tardy paralysis intervention is indicated at once and the nerve must have a groove cut for it to move freely and not be stretched in most of the elbow movements.

Semaine Medicale, (Paris), June 14.

Defense of the Organism by Fibrin. A. GILBERT AND L. FOURNIER.—The writers call attention to the general and local hyperfibrinosis which accompanies certain infections, most marked in pneumonia, and its importance as a salutary reaction, the excess of fibrin thus produced serving to mechanically arrest, hold and neutralize microbes and their toxins and prevent their passage into the blood. Its favorable role is not limited to infections, but is conspicuous in the repair of wounds, regeneration of tissues, cure of certain aneurysms, etc.

Centralblatt f. Chirurgie (Leipsic), June 10 and 17.

Significance of Acute Intra-abdominal Effusion. C. BAYER.—"Sudden extensive effusion into the abdomen is a positive means of differentiating internal incarceration from peritonitis."

Siphon Puncture in Abdominal Operations. C. LAUENSTEIN.—In spite of its advantages and simplicity, none of the text-books mention the siphon method of evacuating a cyst or similar cavity. A rubber tube connected with the needle or trocar is filled with water which is allowed to escape as soon as the needle is inserted in the cyst, and the contents of the cyst are thus aspirated by siphon action with no danger of their finding their way into the abdominal cavity or between the tissues.

An Absorbable Suture and Ligature Material. W. F. SNEGUIREFF.—The well-known Moscow professor asserts that he thinks he has nearly, if not quite, attained the ideal for an absorbable material for sunken sutures, in tendon fibers derived from the ligamentum nuchae of the reindeer, not twisted, but merely the straight, parallel fibers of the ligament. It is easily sterilized and is absorbed a little more slowly than catgut, which is a point in its favor. Other advantages are its relative cheapness, and the firmness and strength of the easily tied knots. He reports eighty-three laparotomies in which it was used, besides numbers of lesser operations, and the results induce him to recommend it as the long-sought, very nearly perfect suture material.

Formalin as a Remedy for Surgical Tuberculosis. J. HAHN.—The writer recommends formalin and glycerin as far superior to any substance yet used in tuberculous abscesses, and reports several cases cured to date with two or three injections of 1 to 5 per cent. formalized glycerin, the cure remarkably

prompt and permanent, and the spondylitis also cured with surprising rapidity in the plaster corset. It is especially effective in knee-joint and hip-joint abscesses. The injection is painful, sometimes requiring morphin, and there is frequently transient fever. It is repeated in two weeks. All necrotic matter must be removed.

Centralblatt f. Innere Medicin (Leipsc), No. 22.

Eosinophilia. J. PROTOWSKI.—This review of all the communications published recently on this subject, including several Polish works, rejects every theory proposed to date, except Ehrlich's, which later research has only confirmed. According to this theory the eosinophilous cells are formed in the bone marrow from the mononuclear tissue; they are contractile and respond to chemotactic attraction by emigration, which explains the accumulations of them in effusion and secretions (sputa). The chemic substances that attract the eosinophilous cells probably originate in the destruction of the epithelium and epitheloid cells of the skin, stomach, intestines and bronchi.

Dermatologisches Centralblatt (Berlin), June.

Protracted Course of Latent Period in Syphilis. T. B. V. DORT.—Observations are cited in this communication to prove that syphilis in the father induces with a more protracted and benign course of the infection when acquired by the offspring, frequently leading to erroneous diagnosis, which would have been avoided if the parental syphilis had been known.

Deutsche Medicinische Wochenschrift (Berlin), June 15.

Disinfection With Tincture of Soap. J. MIKULCZ.—The famous Breslau surgeon has been devoting much attention of late to simplifying aseptic methods in order to bring them within the reach of the general practitioner and field surgeon. He now announces that five minutes' disinfection of the hands and region to be operated on, with tincture or soap, no water beforehand, is fully as effective as the usual sublimate-alcohol method and abundance of water, while it is much cheaper and does not exhaust the patient; less exposure is required and thus post-operative pneumonia is prevented. The disinfection is much deeper; the hands remain sterile longer afterward, and the saving of time is an inestimable advantage. Tincture of soap—Seifenspiritus—is non-toxic and does not irritate even the most sensitive regions. The only disadvantage is that the hands are left slightly smooth and slippery, but this is not noticed when tricet gloves are worn and is a point in its favor in obstetric practice. He is adopting it extensively in his practice and suggests that it may be found a superior disinfectant for inanimate objects. He first wipes the hands or part with a dry piece of gauze and then scrubs with the tincture and brush for five minutes. Formula in the Pharm. Germanica: olive-oil, 6 parts; potassa (Kalilauge), 7; alcohol, 30; water 17.

Muenchener Medicinische Wochenschrift, June 13.

Prognosis of Chronic Phthisis. M. PICKERT.—The writer warns against the prevalent optimistic tendency in respect to the curability of tuberculosis in sanatoria, fearing that many disappointments will result which will reflect discredit on the profession. He urges that a six weeks' stay at a sanatorium is far from sufficient, and that Dettweiler's "stayed cured" patients averaged 142 days, Turban's 225, and Leyden's and Fraentzel's, 235 days in the sanatorium. He asserts that laryngeal tuberculosis is cured much more frequently than is generally accepted, but that a favorable prognosis in pulmonary tuberculosis is only possible with shallow infiltration of the superior lobe, restricted to one side, and extending, at the utmost, to the third rib, while tuberculous infiltrative processes in the lower lobe impose an almost absolutely unfavorable prognosis. In other respects the prognosis depends on the extent, manifestation, fever, constitution and gastric and intestinal functions, none of which should be neglected in forming the prognosis. Observation and experience are necessary, and he advocates a tuberculosis sanatorium in connection with every medical college, and the careful collection of statistics at sanatoria on three points: 1. The condition of the lungs when the patient is dismissed. 2. Comparative statistics of the condition when received and when dismissed, lungs and general health. 3. Statistics of the working capacity when dismissed.

Wiener Klinische Wochenschrift, June 15.

Gyneecologic Trifles. J. EISENBERG.—Among several suggestions to facilitate practice without an assistant, one de-

scribes a speculum, a hollow cylinder with a flat peg on top of the outer orifice, and a sloping trough fitted to the lower half, to carry off fluids without soiling or wetting the patient or bedding. Another "trifle" is rolling the strips of gauze for tampons on small round wooden sticks which project a few inches beyond each end of the roll. A wire handle, like a figure of eight cut at the bottom, fits over the two projecting ends of the roller. This handle is held by the patient or hung on some projection, and the gauze unwound directly as needed for the tampon, without coming into contact with anything but the operator's fingers.

Brazil Medico (Rio), May 22.

Symbiosis of Bacillus Icteroides and a Fungus. J. B. DE LACERDA.—The fact casually mentioned by Sanarelli, that the bacillus icteroides frequently degenerated in the ordinary culture-media, while it seemed to thrive particularly well when a certain fungus was growing on the medium with it, has been studied by Lacerda who confirms this fact, and suggests that it may explain a number of the contradictory phenomena in the life of the bacillus. The fungus seems to be a certain aspergillus, which is killed by cold weather, and the bacillus possibly only becomes pathogenic when combined with this fungus, which would explain why yellow fever disappears with the advent of cold weather, although the bacillus does not lose its virulence submitted to the very low temperatures, as Sanarelli established. It also explains why the cultures sent to Europe to be tested proved inert and non-virulent, as they had none of the fungus with them. In tubes containing some of the fungus, the bacillus icteroides gave every evidence of vitality and virulence in cultures a year old. The fact also explains why old, mouldy houses and vessels are the peculiar haunts of yellow fever.

Societies.

Fourth International Congress of Psychology. All arrangements have been completed for this Congress, which is to meet at Paris, August 20 to 25, 1900, with Ribot as president. Address of the general secretary, P. Janet, 21 rue Barbet de Jouy, Paris. There are to be seven sections.

New Jersey State Medical Society.—At the recent meeting of this Society, held in Allenhurst, the following officers were elected: president, L. M. Halsy, Williamstown; first vice-president, William Pierson, Orange; second vice-president, John D. McGill, Jersey City; third vice-president, E. L. B. Godfrey, Camden; corresponding secretary, E. W. Hedges, Plainfield; recording secretary, William J. Chandler, South Orange; treasurer, Archibald Mercer, Newark. The next annual meeting will be held in Atlantic City, beginning June 4, 1900.

Medico-Legal Society.—At the meeting of this Society, held in New York City, June 21, in the discussion on "Christian Science" and the law, the principal argument was in favor of making "Christian Scientists" amenable to the law, ex-coroner Moritz Allinger holding that the practice was iniquitous and the law should therefore be invoked to suppress it, just as in the case of other charlatany. He urged that any alleged cure which depends on the superstition of the people it seeks to aid should be condemned and the most severe penalties enforced against those who practice it. Howard Ellis also argued that those practicing "Christian Science" should be made amenable to the laws regulating practice in general. An opportunity was given for "Christian Scientists" to reply, and the extraordinary ground was taken that because they did not make use of drugs they were not in any way amenable to the laws in force in regard to medical practice.

St. Louis Medical Society.—At the meeting June 24, Dr. Thomas F. Runbold read a paper before this Society, on "Fifty Years as a Specialist in Diseases of the Nose and Throat." The paper was reminiscent and historic and Dr. Runbold being really the first physician in America to devote himself exclusively to this work, spoke with authority. He related many interesting cases, among others his first case of nasal catarrh, his experience in managing the case, and his correspondence with many of the most eminent physicians and surgeons in America, securing their views of such cases. The

opinions of Drs. L. P. Yandell of Louisville, Daniel Drake of Cincinnati, Brainerd of Chicago, Willard Parker and Valentine Mott of New York, and many other front-rank men, were crude and amusing in the light of our up-to-date knowledge of the pathology of nasal catarrh. Many, indeed all, of these great men, declared chronic, purulent, nasal catarrh incurable.

The meeting July 1 was devoted to the trial of Dr. W. H. Mayfield, for unprofessional conduct, the charges being preferred by the Missouri State Medical Society at its last session, at Sedalia. Dr. Mayfield was found guilty by a vote of 50 to 1, and expelled by vote of 46 members, the rest declining to vote. The charges against Dr. Mayfield were improper methods of advertising his sanitarium, the employing of runners or commercial representatives and the offering of commissions to physicians for sending cases to him.

Minnesota State Medical Society.

Thirty-first Annual Meeting held at Minneapolis, June 21, 1899.

DR. F. A. S. DANSMOOR, the president, in his address deplored the exclusion of medical men from public offices and the fact that recommendations of health boards were so often disregarded. He would recommend more union of effort and to this end the organization of more local societies and greater attendance and attention to business in the societies now in existence. Editors will write long articles on the "Prevention of Deaths by Tornados," and entirely ignore the almost infinitely greater number of deaths by tuberculosis and smallpox. The state will spend millions freely on practically unimportant things and refuse a few thousand dollars that are required to furnish pure water and prevent the enormous death-rate by typhoid fever and other preventable diseases.

OBSERVATIONS ON MEDICAL SERVICE OF THE LATE WAR WITH SPAIN FROM THE STANDPOINT OF A VOLUNTEER SURGEON.

DR. CLARK of Stillwater, whose post was at Chickamauga, after describing the arrangement of the camps and the difficulty of obtaining proper arrangements and supplies, said that in the typhoid cases, which were generally of low type, antiseptics, stimulants, and sustaining food were largely used with success. Temperature was not generally high except in severe cases. Orders were issued to boil all drinking water, but this was generally disregarded and in case of one regiment where it was strictly observed the percentage of sickness was the highest of any of the camps. He believed, however, that this was brought about by infection from dust and flies and not influenced materially by the boiled water. He said that the hemorrhage and diarrhea in that climate were something terrific and unknown in such climates as northern Minnesota.

ACROMEGALY.

DR. GREENE of St. Paul presented a case, in a male, 22 years old, history negative, never sick. He denies syphilis; noticed his hands and feet enlarging two years ago. The larynx is enlarged and thickened and causes so much obstruction that he has spells of difficult breathing. There is remarkable thickening of the skin and the forehead, with changes in the shape of the face approaching moon shape, fingers blunt, skin normal and strength in hands also normal; thyroid gland has enlarged notably; has improved remarkably under thyroid treatment. This has been purposely discontinued for the last ten days with marked results for the worse. Dr. Greene believes this treatment to be effectual, but insists on a good extract being used as he has had very variable results with different manufacturers' products.

INSOMNIA.

DR. J. V. SHOEMAKER of Philadelphia gave an address on this subject. He said that sleeplessness of the kind of which he should speak occurred generally in people who, in their anxiety to get ahead were neglecting their diet and the natural functions connected therewith and in short, people who were burning the candle at both ends. It does not do to drug such people as this to any extent, and he has made it a rule to give drugs to this class of cases with much caution. The physiologic remedies are of most importance and he laid great stress on physical exercises, which if necessary may be begun while the patient is in bed—massage, electricity, of which galvanic is best with the negative pole to the back of

the neck, and in children the best results had been obtained by the use of the roller electrode on various parts of the body in soothing into quiet the active and excited muscles. Good and nutritious food, entertainment, and change of scene are also often of great benefit. The beauty of all these remedies lies in the fact that they remove the cause and give the patient a natural and quiet condition.

Among drugs he mentioned opium with its products as being one of the best, most abused and probably one of the most dangerous remedies in unskilled hands. Chloral produces natural sleep but is dangerous on account of its weakening effect on the heart and is particularly so in alcoholic subjects. When necessary to use it, the best effects with least danger may be obtained by giving it by enema. Paraldehyde acts well on the whole system and produces natural soothing sleep without danger, and may be administered in doses of from 10 to 120 grains without danger. Bromides are valuable but should be used less freely, while belladonna and hyoscyamus give the best results in mental depression. He considers cannabis indica, when properly handled, one of the best and safest of all remedies, often succeeding where other things fail entirely. Sulphonal and trional should be used with caution, especially by persons with renal insolvency. He deprecated the use of mere symptomatic remedies in any case and also those in which the price is held up by proprietary means. He is in favor of using older remedies and not trying every new thing that comes up. In all cases make haste slowly.

Election of officers resulted as announced in the JOURNAL of July 1, p. 37.

Philadelphia Pediatric Society.

Meeting Held June 13, 1899.

PNEUMONIA.

DRS. J. C. GITTINGS and C. F. JUDSON presented a clinical report on certain cases of pneumonia treated at the Children's Hospital. Dr. Judson described the physical signs and symptoms present in several cases of alveolar catarrh, which could be differentiated from bronchial pneumonia. One writer states that in cases of alveolar catarrh there is first a proliferation of the cells lining the alveoli, which with the exudate finally undergoes degeneration, with collapse of the walls of these air-cells. In some instances a cheesy product may be formed, or fibrosis may occur. In the cases presented there had been moist rales, increased fremitus, and areas of consolidation. In all cases there had been great depression lasting over a considerable length of time, but followed by recovery. In connection with the study of alveolar catarrh it might be well to state that this condition was not necessarily dependent on the presence of the tubercle bacillus. In the cases reported the diplococcus had been found in the sputum most frequently, but no one organism was always present.

DR. GRAHAM had not always been able to make a differential diagnosis between bronchial pneumonia and alveolar catarrh, and wished to know the special points which had been depended on by those who had presented the paper in doubtful cases.

DR. J. C. GITTINGS stated that the most important data regarding this question was: 1. The way in which the cases originated. 2. The clinical course. In these cases at no time had there been bronchitis. 3. The area involved, in some instances the apex alone being affected. 4. The slow course pursued. 5. The gradual abatement of the disease, leaving behind no morbid change which could be detected by physical methods of diagnosis.

CASE OF RUMINATION.

DR. L. C. PETER reported and presented a case of rumination occurring in a male 7 years of age. In this case the speaker had endeavored to find out if possible why such a condition should be present in this patient. He had been told that it was partly because the patient liked to do so, and partly because he could not help it. It would appear, however, that the general system had suffered, as there had been considerable emaciation or exhaustion. The character of the material eructated had varied according to the time elapsing from its introduction of the food. Rumination had occurred without reference to the particular variety of food taken. The stomach had been frequently examined but no pouch nor any malformation had been found. The speaker referred to instances in which

this condition had been present in neurotic individuals as well as in idioey. A certain amount of neurosis doubtless existed in this case, for at the suggestion "expectorate your food," instantly it was obeyed. This act was done probably two hours after taking food—9 p.m. In regard to the treatment, trephining had been spoken of by one writer, but doubtless this was not necessary. At least there could be no valid reason for doing it. This case had been broken of the habit under the influence of suggestion, and in addition by the administration of Bland's pills.

PSEUDOMUSCULAR HYPERTROPHY.

DR. PETER also presented a boy of 7 years presenting all the typical symptoms. The boy was of neurotic parents. The father had suffered from epilepsy, and at one period lay in a trance lasting three days. The boy was mentally dull and when 3 years of age it was observed that the calves of the legs were markedly developed, as well as the muscular system generally, except in certain areas in which atrophy is present, notably in the latissimus dorsi, pectoralis major and deltoids. The bodily movement is sluggish, waddling gait. When an effort is made to assume the erect posture he first places his hands low down on the legs and virtually climbs upon himself. The reflexes are greatly diminished.

Cincinnati Academy of Medicine.

Meeting Held June 12, 1899.

CEREBROSPINAL MENINGITIS.

DR. G. A. FACKLER read the histories of three cases occurring on his own service and that of Dr. E. W. Mitchell at the Cincinnati Hospital, during the past few months. The cases all presented characteristic symptoms: sudden onset, usually with chill, rigor and high fever; headache with rapid delirium, usually of a low, muttering type but occasionally maniacal; stiffness and rigidity of the neck muscles; opisthotonos, more or less pronounced; irregular fever, Kernig's sign, carinated abdomen, tache cerebrale, absence of abdominal pain, tenderness, rose spots, and splenic enlargement; great hyperesthesia, particularly over the calves of the legs and the soles of the feet; absence of the Widal reaction after trials; a leucocytosis of from fifteen to twenty thousand; withdrawal of more than normal amount of fluid by the lumbar puncture, with temporary amelioration of the symptoms. All the cases died. Examination of this fluid by Dr. J. E. Crewe showed in all these cases a tetracoccus which did not grow on agar or blood-agar, but which flourished well on fluid bouillon. In another case of Dr. Freiwies's, a child with meningitis, acute hydrocephalus developed, and here too a tetracoccus was developed after lumbar puncture. One of the Cincinnati Hospital cases lived forty-four days.

Post-mortem examination of these cases showed well-marked macroscopic evidence of inflammation of the cerebral and spinal meninges, and in one case an area of softening involving one entire cerebellar hemisphere. A report of the microscopic changes will be made after the tissues have become sufficiently hardened. Stained specimens of the tetracoccus were exhibited under the microscope. Microphotographs were shown.

SKIN GRAFTING ACCORDING TO THIERSCH.

DR. E. P. ADAMS, after giving a graphic description of this operation, narrated a case of his own in which skin grafting had been done by this method over a large area in the region of the groin, with perfect results except over the inferior inguinal glands.

DR. J. C. OLIVER spoke of using the inner lining of an egg-shell as a substitute for grafts of skin. As far as his personal experience went, this method had never succeeded in the slightest degree. He also narrated the history of a case of severe burn of the hand in which the fingers had been flexed by the resulting cicatrix on the palm of the hand. On dissecting out the cicatrix and skin grafting he had obtained so good a result that his patient was able to make her living wrapping packages of chewing gum. He has had grafts cling to the inner surface of bone, the tibia, which had been trephined and curetted for osteomyelitis, and has had grafts take over malignant tissue. In some crushes of the foot he is in the habit of not amputating but allowing the crushed tissue

to be thrown off by natural means, and then to skin graft the stump, and is confident he had saved portions of many feet by this means.

DR. ALFRED FREIBERG advocated the method of Krause in preference to the Thiersch. In the former method the subcutaneous tissue is engrafted with the overlying skin and the whole held in place by sutures. He called attention to the excellent result obtained by a member of the Academy in a case of lupus of the face treated by this method, and exhibited before the society but a few weeks ago. He knew this could be done when only comparatively small areas were to be covered. He also thought that transference of a pedicle should be done more frequently. His reasons for these preferences were that he thought the new skin of the skin graft more liable to break down under slight mechanical insult.

Meeting held June 19, 1899.

DOUBLE TERTIAN AND ESTIVO-AUTUMNAL MALARIA.

DR. MARK A. BROWN reported a case, the patient having been sick for about six weeks with chills occurring with more or less periodicity. The examination of the blood five hours after chill showed the presence of two sets of tertian organisms, one with just beginning pigmentation, the other almost filling the red corpuscles with it had entered. Crescents were also present, but in vastly less numbers, proving the existence of the estivo-autumnal variety. As it is usual in this condition for one type to dominate the other, so in this patient the tertian fever had the upper hand, the temperature-chart showing a daily intermittent fever hardly influenced by the continued development of the estivo-autumnal parasite. Microscopic slides stained by the eosin and menthyl blue method were exhibited showing crescents and the two tertian types. The case was reported on account of its comparative rarity, the Johns Hopkins reports mentioning but thirty-one instances in a total of over 1600 cases. Dr. Brown had been able to demonstrate the condition but twice previously in several hundred cases.

WOUNDS MADE BY MODERN BULLETS.

DR. P. S. CONNOR gave an interesting lecture on this subject. He compared the wounds of the Civil War with those of the Spanish-American and gave as the result of his conclusions that the great increase in the velocity of the latter ball was in a measure beneficiary, and that the track of the bullet was clean-cut; that there was very little smashing of tissue around the track of the bullet and as a result gangrene and secondary hemorrhage were uncommon. On the other hand, the blood-vessels and nerves were not pushed to one side as they undoubtedly were by the former missiles. As a rule the late bullets perforated, though some cases of lodgment were reported. This was contrary to previous expectations as was the demonstrated fact that the bullet might also be deflected. Another point was that the bullet was liable to go "end on" and not "side on" so that large wounds were not so common. As regards chest wounds unless some essentially vital point, as a large vessel or the heart, was penetrated, the prognosis of late was very good, just as in civil practice. In abdominal wounds he said that it was rather remarkable that the two laparotomies made for gunshot wounds both resulted fatally, while the cases not operated on recovered. Of the twenty gunshot wounds involving the knee-joint, none have resulted fatally and none had to submit to amputation. Less than 5 per cent. of the wounded removed to hospitals died, a remarkable record when compared with the terrible mortalities from this cause in former wars. He thought that the antiseptic packets carried by the soldiers, when used, had not a little to do in influencing this mortality. Discussed by Drs. Dan Young, Ayres, Oliver, H. M. Brown, Boylan and Freiberg.

Orleans Parish Medical Society.

Meeting held in New Orleans, La., June 24, 1899.

TRANSPPOSITION OF VISCERA.

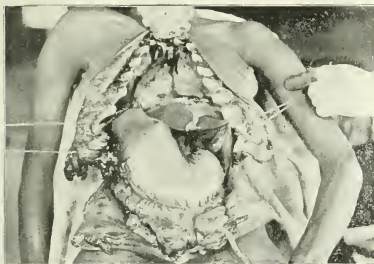
DRS. L. G. LEBUEUF and JULES LAZARD reported cases of transposition of the viscera.

The case of Dr. LeBeuf was W. P., white, male, 31 years old, a native of Louisiana, 4 feet 10 inches in height, weighing 75 pounds. He had been admitted from the out-patient de-

partment to a medical ward of the Charity Hospital, where he was treated for pulmonary tuberculosis, evidenced both by physical signs and by the presence of bacilli in the sputum.

Physical examination showed the apex-beat of the heart three-fourths of an inch below the level of the right nipple, one-half an inch to its left; on percussion the position of the heart was found to be the reverse of the normal, the long axis running from the base above downward and to the right. There was dullness on the left side from the sixth interspace downward over the transposed liver; spleen dullness was elicited on percussion over the tenth rib on the right. On the right side, below the heart, the position of the stomach could be made out by the tympanitic percussion note, auscultation over the site, while the patient was drinking, detected a gurgling sound as the liquid entered that viscus. Apparently all the viscera were transposed, though the positions of the cecum and sigmoid were not determined.

In the case of Dr. Lazard the diagnosis was first made on autopsy. S. Y., colored, female, 24 years of age, was admitted to the Charity Hospital, Nov. 16, 1894; her breathing was rapid, her pulse full and bounding; there was febrile temperature. Percussion having revealed an apparent dullness at the base of the left lung, a diagnosis of pneumonia was



made. On the following day she died, coma having supervened in the meantime. The autopsy, admirably illustrated by the photograph taken at the time, showed the heart on the right; there was pericarditis, with aortic degeneration; the lungs were transposed, the left having three lobes, the right two; there was nothing else abnormal here beyond a slight pleuritis. The spleen was on the right, and was congested; the liver enlarged, lay on the left. The stomach and pancreas were also transposed, while the sigmoid flexure on the one hand and the cecum and appendix on the other had changed places. The kidneys were congested, the left presenting pus. The cause of death was thought to be pyonephrosis with congestion of the kidneys.

Dr. Lazard quoted Cloquet as saying that he had found this condition three times in 10,000 autopsies; Littré and Robin as stating that it is seen only in men.

Dr. VAN SEYDEWITZ said that in Vienna he had seen a man who presented transposition of the viscera; further, he was acquainted with a man in New Orleans who is similarly peculiar in his anatomy.

AMPUTATION BY BANDS.

Dr. LEBUEF had that day attended in labor a white woman who had gone seven weeks beyond the expected time of her delivery, this having been calculated with considerable accuracy from the date of her husband's departure. He wished to call attention not so much to this point as to the deformity of the infant's left foot. It looked as though the big toe had been cut off transversely, and the second and third smaller toes—corresponding to the third and fourth metatarsals—obliquely. It looked to him like a case not of arrested development but of amputation by bands. In answer to questions, Dr. LeBuef stated that there was no distinct cicatrix, though the ends of the second and third toes looked rough; no

bands had been found in the interior of the amniotic sac; there had been quite a good deal of amniotic fluid.

DEFORMITY AT BIRTH.

Dr. C. J. MILLER had been present at the birth of a child which presented deformity of both upper extremities. The right hand, minus a thumb, was attached directly to the arm, the forearm being lacking; the left hand, which also had but the four fingers, was attached to a half-length forearm. These members were fairly well developed.

ALCOHOLIC POLYNEURITIS.

Dr. T. S. DABNEY reported a case of alcoholic polyneuritis. A young man who was a steady tippler was taken with vomiting, with jaundice; he became weak in his legs and in the course of a few days had extensor paralysis of both wrists and ankles. Cases of this kind require rest, strychnin and good food—not stimulation with the faradic current. The patient, whose onset was described, received, besides the above, 1 grain of ipecac every three hours, for its effect on the liver. In thirty days Dr. Dabney expected him to be completely well. From the suddenness of the onset and the usual rapidity of improvement it was reasoned that there could not be any actual nerve degeneration; the condition was rather one of toxæmia, such as exists in extensor paralysis complicating plumbism.

St. Louis Medical Society.

Meeting held June 17, 1899.

CEREBRAL LOCALIZATION.

Dr. ARTHUR E. MINK read a paper on this subject and stated that the researches of Flechsig have compelled us to remodel our ideas concerning the cerebral cortex. The centers of the cerebral cortex can be divided into two great groups. We have first the projection centers, which are the equivalents of sensory surfaces and are situated about the primary fissures. The tactile center is largely homologous with what was formerly termed the motor area, and is located in the paracentral lobule, part of the gyrus fornicatus, the ascending frontal and parietal convolutions and the posterior parts of the three frontal convolutions. It was formerly supposed that all parts of the cortex alike received projection fibers. This, however, is not so. Only one-third of the cortex receives projection fibers. Each projection center has centripetal and centrifugal fibers. The visual projection center is situated in and near the calcarine fissure. The auditory area is in the first temporosphenoidal convolution, the olfactory in the olfactory trigone, the anterior perforated substance, the neighboring part of the corpus callosum, part of the hippocampal gyrus and the uncinate gyrus. The olfactory sense is rudimentary in man. In some of the mammals, however, the olfactory area occupies almost two-thirds of the cerebral cortex. In man the tactile so-called motor areas largest of all, inasmuch as it duplicates for the opposite half of the body all tactile, thermal, muscular, articular, and visceral sensations. In it are represented also all sensations coming from the mouth, tongue, soft palate, pharynx, larynx, rectal and genito-urinary surfaces. In this area we find giant pyramidal cells which are the origins of the motor tract. The auditory projective area, besides receiving fibers from the organ of Corti, also sends centripetal fibers to muscles controlling movements of the ear. The association centers are the higher intellectual centers. In them are stored up the various tactile, auditory, visual, olfactory, and motor memories. In them are combined, serialized and fused, all of these various memories. They are the organs of what is termed memory, will, judgment, reason, experience, moral and esthetic sentiment. The projection area thus, in one respect, merely centers for reflexes of cortical origin.

The association centers exercise an inhibitory influence over the projection centers. When in man, through pathologic conditions, the association centers lose their control, the projection centers manifest only blind impulses and animal passions. The association centers are absent in the Rodentia, feebly developed in the Carnivora, co-equal with the projective centers in the higher apes, and occupy in man two-thirds of the entire extent of the cortex. The anterior projection area comprises the greater part of the first and second frontal convolutions and the straight convolution on the inferior surface. The middle center comprises the island of Reil. The greater posterior association center comprises the parietal convolutions, the fusiform and lingual gyri, the inferior temporal gyms and the anterior part of the external occipital lobe.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance	\$ 5.00
Foreign Postage	2.00
Single Copies	10 Cents

In requesting change of address, give old as well as new location.

Subscriptions may begin at any time and be sent to

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
No. 61 Market Street, Chicago, Illinois.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, 100 Washington St., Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting, of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

Those new members of the Association should send their annual subscription direct to the Treasurer, Dr. Henry P. Newman.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the Editor, and all communications relative to the business of the JOURNAL, proof-sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 61 Market Street, Chicago.

Original communications are accepted with the understanding that they are exclusively contributed to this JOURNAL.

SATURDAY, JULY 8, 1899.

CHANGES IN CELLS LINING PERITONEUM, IN
INFLAMMATION.

The nature and origin of the cells lining the pleuro-peritoneal cavity have attracted much attention; the opinions on these points are as yet far from uniform. In order to solve this question it seemed only natural that the investigators should turn to embryology, in order to determine from which layer of the embryo the pleuro-peritoneal cells are developed, but great difficulties were soon met with.

In the first place, it is very hard to determine the exact moment when the law of specificity of cells goes into force; hence the different opinions among embryologists. The majority of them were of the opinion that the pleuro-peritoneal cavity constitutes a large lymph space, and that the lining cells were equivalent to the endothelial cells of vessels. Waldeyer, on the other hand, assumes that histogenetic differentiation is completed with the formation of the archiblast and the parablast. All muscles, nerves, and epithelia are derived from the archiblast; all the connective tissues and the blood from the parablast, and at the present time this view, or some modification thereof, is generally accepted. The cells covering these serous membranes have, therefore, come to be regarded quite generally as true epithelial cells.

The numerous experiments which have been made in order to determine the role played by these cells in inflammation of the peritoneum, and in the formation of peritoneal adhesions, have not led to uniform results. It is true that many points in connection with the formation of peritoneal adhesions have been cleared up, but comparatively little has been learned from these experi-

ments concerning the relations and the nature of the lining cells themselves. Generally, the question as to the role which these cells play in the formation of adhesions was lost sight of.

Kolosow investigated this question, and found that the presence of prickles upon the pleuroperitoneal epithelium or endothelium would speak against their being connective tissue cells, and he regarded them as genuine epithelium.

Ranvier, on the other hand, found that when microbes are injected into the peritoneal cavity, these cells appear to swell up, send out branches, and to act in general as young connective tissue cells. Cornil came to the same conclusions. Marchand injected a suspension of lycopodium spores into the peritoneal cavity of guinea-pigs, and examined the surface of the omentum at longer or shorter intervals. He believes that the epithelial cells under those conditions present ameboid movements and surround, together with leucocytes, foreign bodies, forming giant cells, and eventually a fine fibrillated tissue.

V. Bungner differentiates structurally between granulation cells of connective tissue and of endothelial origin, but what role the endothelial cells play in the healing of wounds, and in inflammatory processes in the peritoneal cavity, he was not able to definitely specify.

The latest research in regard to this question comes from Ziegler's laboratory in Freiburg. Buttner¹ found that in inflammations produced by the staphylococcus aureus the omentum becomes covered by a layer of fibrin, in which are a variable number of leucocytes, which also infiltrate the substance of the membrane. In the early stages of the inflammation, the covering epithelium appears very distinctly, and can be readily recognized and differentiated from other cells. He was able to find the prickles which Kolosow described. A little later in the process the epithelial cells are to a large extent desquamated, but in the cells which remain attached karyokinetic figures appear in large numbers. The desquamated epithelial cells lie in the fibrin.

The principal outcome of this series of experiments is that in no case could Buttner trace the transformation of the epithelial cells into connective tissue cells. The same results were obtained in another series of experiments, in which the omentum was carefully sutured to the abdominal wall.

The covering of the layers of the tunica vaginalis is genetically identical with the pleuroperitoneal epithelium, Buttner also experimented on this membrane, which seemed rather favorable for this kind of work, by passing a silk suture through the testicle and the skin, and then tying so that the inner layer of the tunica vaginalis was pressed against the outer quite firmly. The specimens were then removed after varying intervals, and examined after suitable preparation. The histologic examination showed that usually the epithelium undergoes disintegration, and that the epithelial cells never change into fibroblasts.

¹ Ziegler's Beiträge, 1896.

Without going into any extensive histologic details it may suffice to say that the principal result of Buttner's investigation is that the epithelium plays a negative role in the adhesion of serous membranes. The adhesions are first formed by means of a fibrinous conglutination. A direct union between the two surfaces by means of epithelial cells was not observed. There are facts which speak in favor of the true epithelial nature of these cells.

DETERMINATION OF SOUND DIRECTION.

Among the many functions that have been attributed to the semicircular canals, that of the determination whence sounds proceed, has received the support of some physiologists. Though the majority have strenuously denied this as one of their functions, some late experiments would seem to point to these canals as not wholly unconcerned in the perception of acoustic space. Their peculiar arrangement, occupying as they do three dimensions of space, is most seductive in the formation of theories bearing on our conception of space relationships. The objection was long ago pointed out that in the quadrupeds, which led a more or less topsy-turvy sort of a life, the respective relationship of these canals to the three dimensions of space must be constantly changing, and hence, in these creatures at least, they can have but little effect in the determination of space direction. Many fishes have only one or two semicircular canals. The lowest vertebrates have an ear not markedly different from the invertebrate type, as may be observed in the lamprey, which has a sacculus with auditory hairs and otoliths in communication with two semicircular canals. The bag—myxine—has only one canal. The comparative studies of Dercum¹ led him to give up all notion that these organs had anything to do with the maintenance of equilibrium or the determination of space direction. In spite of these various objections, the three prominent theories offered as explanation of the physiology of the perception of space direction point more or less to these canals.

The first theory is the crude one already mentioned and depending on the arrangement of the canals among themselves. As sounds all reach these canals through one and the same opening, it is difficult to imagine how their respective correspondence with the three dimensions of space can have any effect in the determination whence sounds proceed. This, in addition to the objections already enumerated, renders this crude though popular theory quite untenable.

Another theory in regard to the perception of space direction of sounds assumes an acoustic space analogous to the tactual and visual space, and rests on the belief that special tactual sensibilities reside in the tympanic membrane. This theory is incomplete, however, in regard to an explanation as to how a mere surface such as the tympanic membrane can determine such complex relationships as are involved in the fundamental three

dimensions of space. The association of the function of the tympanic surface with that of the canals would be rather more suggestive.

The third or motor theory assumes that certain motor impulses are awakened in particular definite relationships by the activity of the organ of hearing. The conception of the motor space is a derivative of past experience in connection with and under the influence of visual space and tactile experience. The existence of space-forms acquired through other sensations is presupposed in the conception of acoustic space. In connection with this theory it may be well to remember that, as Laborde² pointed out, the auditory nerve contains both motor and sensory fibers, the former being distributed to the semicircular canals.

In some recent experiments made by Matamoto Matsumoto³, in Professor Scripture's laboratory at Yale, many interesting phenomena were elicited. The subject was seated, blindfolded, with head in a head-rest, surrounded by a kind of spherical cage so built that its axes furnished twenty-six terminal points. A short, sharp sound was made with a sort of telephonic apparatus at each of these terminal points, and fifty experiments were performed for each point. First of all it was most emphatically demonstrated that the perception of the direction whence sound comes is not a mere matter of chance. If it had been a matter of chance, probably not 40 times in 1,000 would the judgments have been correct; as a fact, however, the judgments were correct 768 times in 1000. Of the twenty-six directions, not one was actually confused with more than eight directions. Out of some 656 possible errors, only 113 were actually noted. Sounds on the right side were never mistakenly assigned to the left side; nor were those on either side ever assigned to the median space. These observations emphasize the necessity of two ears for the correct appreciation of sound paths. The sounds of the right hemisphere were more accurately perceived than those of the left; those of the front more than those of the rear; and those from below more than those from above. These variations are probably due to the shape and direction of the pinna and to the difference in the sensitiveness of the two ears.

The four characteristics of sound waves are intensity, pitch, phase and timbre. Experimenting especially on the intensity of sound waves, Matsumoto, who inclines to the motor theory in explanation of the appreciation of sound paths, without, however, referring to the semicircular canals, concludes generally that the relative difference between the intensities of the component sounds heard by the two ears is the immediate cause of the perception of the direction of the sound. The distance of the sound depends, on the contrary, on the absolute intensity of the sound.

¹Trib. Med., Sept. 12, 1880.

²Researches on Acoustic Space, Studies from Yale Lab., vol. I, 1867.

A MUTUAL help society, consisting exclusively of physicians and surgeons, is being organized in Belgium to insure its members against professional accidents.

SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS.

We no longer approach a case of tuberculosis with the fear and trepidation that have been the rule in the past, knowing that in many cases improvement or even recovery takes place as a result of intelligent management. No case should be looked on as hopeless, although treatment must sometimes be merely palliative. Surgery has thus had restricted application in the treatment of pulmonary tuberculosis and radical results are not to be expected. Of the utility of properly employed measures of this kind an instance is furnished by Turban¹, who reports a case in which extensive rib resection was followed by collapse of a tuberculous cavity in the lung, with inhibition in the activity of the morbid process. The patient was a man 21 years old, with hereditary predisposition, who had presented symptoms of pulmonary disease for two years, with fever and hemoptysis. The left lung was almost entirely destroyed, and the left side of the chest was flattened and almost immobile in respiration. The percussion-note on the left was tympanitic, the respiratory sound bronchial and in places amphoric, with tinkling and metallic rales. On the right side, at the apex, inspiration was enfeebled, and expiration prolonged. Cough was marked, with abundant purulent expectoration and tubercle bacilli in the sputum. The pulse was accelerated, the temperature elevated, cyanosis marked. In the course of two months signs of contraction of the left lung appeared, the heart being displaced toward the anterior axillary line, and pulsation becoming visible between the second and fifth intercostal spaces to the left of the sternum. Fever persisting, and signs of increased tissue destruction appearing, it was decided to remove a wedge-shaped portion of the chest wall, to permit further contraction of the lung. Accordingly, a cutaneous incision 14 cm. long was made, beginning in the third intercostal space, and passing downward and outward, and 3 cm. of the fourth, 4.5 cm. of the fifth, 7.5 cm. of the sixth, and 9 cm. of the seventh rib was removed, without opening the pleural cavity. The wound was closed by suture, and healed without complication. At first, cough and expectoration were increased and the febrile symptoms augmented, but subsequently all receded, and the chest underwent further contraction. Unpleasant symptoms recurring after a time, however, a second operation was undertaken, and 9.5 cm. of the sixth rib, 10.5 cm. of the seventh, 10.5 cm. of the eighth, and 11 cm. of the ninth rib was resected. As there had been some regeneration of the ribs resected in the primary operation, great care was now exercised in the removal of the periosteum, and this was followed by application of the thermocautery. The lung underwent further contraction, and the tympanitic note was replaced by dulness on percussion. The symptoms improved once more, although tubercle bacilli persisted in the sputum. It is pointed out that while recovery was in no sense brought about in this case by operation, a rapidly progressive process was con-

verted into a stationary one; and it is believed that the operation is justified in a relatively small number of cases, in resistant patients with extensive disease of one lung and a good condition of the other lung, in the presence of a tendency to contraction of the lung with rigidity of the thorax.

CHICAGO DIPLOMA-MILLS.

The business done by the Chicago diploma-mills is well illustrated by the fact that the county clerk's official records of physicians in one Michigan town are found to include the names of twenty-three who claim as their alma mater the notorious "Independent Medical College" of Chicago. This may be an extreme case, the diploma-mill graduate may have gravitated for some reason or other especially to that locality, but it is certainly suggestive of possibilities elsewhere. As it does not seem to be the popular thing for the diplomates of the said institution to publish the fact in Polk's Directory, it is impossible to ascertain how many such exist in any particular town or city, but the well-known business methods of such institutions make it probable that they are numerous, especially where the local laws as regard medical practice are or have been lax.

WILL THE PLAGUE REACH AMERICA?

Since the outbreak of the plague in China the disease not only has slowly gained headway in that country, but has also extended its ravages toward the south and is now prevailing to an alarming extent throughout India. At first it was thought that on the advent of hot weather the disease in India would be held in abeyance, but such does not seem to be the case. The report from the larger provinces, received last week, announces that many new cases as well as a large number of deaths have occurred. From India the plague extended westward into Egypt, in which country several cases occurred. Should it gain admission into the region surrounding the zone inhabited by those who make their annual pilgrimage to Mecca, it would not be far from Europe or from direct communication with England. It might at this time be appropriate to study how it might invade the United States by taking an eastern course. For instance at Hongkong where the disease has been prevalent for some time, it is not far to the Philippine Archipelago, between both of which intimate relationship constantly exists. In both of these countries it is safe to say that at the present time but a crude state of sanitary rules is actually demanded. Entrance into the Philippines would seriously embarrass the war now⁶ being waged in that country. From the latter country the plague might become transported to our western coast by transports, or vessels of the merchant marine.

SCHOOL NURSES' SOCIETY.

The London School Nurses' Society, which held its first annual meeting June 19, has for its object the supplying of trained nurses to the large schools in the poor districts. The nurses visit the schools and attend to the small ills with which the children may be afflicted, such

¹ Berliner Klin. Wochn., May 22, 1896.

as sore eyes, wounds, etc., special mention being made of "sore heels," evidently a common affliction. Each nurse is expected to visit four schools each day, and on an average see about 100 children. The duty of these nurses is also to send the children to a physician, hospital or home, as her judgment dictates, when necessary. The work carried on by this society is certainly a good one. If the nurses do not get a too high idea of their ability, and attempt to treat cases which belong to a physician, they ought to receive all the encouragement that it is possible to give. Such a work in the schools of some of our own large cities would undoubtedly save much prolonged suffering among children, who, through neglect, have to put up with sore eyes, septic wounds, etc., which ultimately might become serious.

"BATTLE OF THE CLUBS."

The medical profession of Great Britain is still contending with an evil that is more or less in existence with us under various disguises, namely, "club practice." The *Lancet*, *British Medical Journal*, and other medical journals have been active in this "Battle of the Clubs," and the degrading influence of such practice has been thoroughly shown up by the exposition made by these papers. The result has been that reputable medical men have refused to serve these clubs and insurance companies which have medical attendance attached and pay their doctor a beggarly pittance while they keep the profits. The profession has become so united in its action, the individual members refusing to serve without adequate remuneration, that the companies and clubs have proposed a truce. Committees appointed by these clubs have met a committee appointed by the General Medical Council, and propose a "Board of Conciliation," to arrange matters in a manner which shall be satisfactory to the medical men. After some opposition in the Council itself, that body, at its recent meeting, accepted the proposition with certain reservations. Whatever the result may be it is certain that if the medical men will stay united they can dictate their own terms. And this they will probably do, for our professional brethren there work more in unison than we do here. While occasionally a man may be found who is so lost to professional honor as to accept a position resigned by another for principle, such are very few in number and, as a rule, lack not only professional honor but medical ability as well. It is certainly to be hoped that this evil, which is insidiously creeping in in various parts of our country, may be met by a similar united action here. These schemers who, under various guises, try to get rich by trading in the services of our profession ought to be made to understand that physicians are not yet ready to be thus exploited for others' benefit.

AN AGGRESSIVE DELUSION.

The JOURNAL has so often called attention to the homidical pretenders who call themselves "Christian Scientists" and faith healers, that the subject is anything but an agreeable one, but it is one that constantly obtrudes itself in more aggravated form. One of the latest cases is that in which a child was suffered to die for lack of

proper treatment while the healers were telegraphing to the notorious Dowie for the benefit of his "absent prayers." The especially aggravating feature of the case, however, was the aggressive policy and behavior of the faith healer. After the father had called a physician, under whose treatment the child had begun to mend, the "divine healers" actively interfered and destroyed the medicines left. Another physician was called by a relative and they constantly and actively interfered with the attendant left in charge by the doctor. Finally they succeeded in preventing any proper medical care and the child died. It seems that the parents, the father especially, were inclined to have medical help, but, as one of the relatives expressed it, "they were dogged by the 'healers' until they were almost exhausted and seemed to have no will of their own." The local paper¹ took the matter up and obtained the signed statements of the physicians and relatives, but was unable to obtain those of the healer at that time. The facts thus brought out ought to arouse the proper legal authorities to action, for here we have evidence enough of wilful and, we might say, malignant, active prevention of the proper measures and a death produced in a rarely fatal disorder, whooping-cough that was twice apparently put fairly on the way to recovery by medical treatment. One rather curious fact of the case remains to be mentioned. The relative who consulted the authorities was informed that nothing could be done without the consent of the child's father, yet he was placed in a room and access refused to him by those in charge. In this case the offenders, it seems, were not the self-styled "Christian Scientists," but the followers of the kindred though rival delusion known as Dowieism. It matters not, however, which it is, as each is alike damnable in every sanitary point of view. It has been suggested, we believe, that the Chicago Zion of this sect should undergo a thorough health inspection, for who can tell what peril to individual health may be there hidden.

INTRATRACHEAL INJECTIONS.

The treatment of the cough and fever of pulmonary tuberculosis with intratracheal injections of dilute solutions of menthol, guaiacol or eucalyptol, which was first employed by Green of New York some years ago, but never generally taken up by the profession, is again attracting the attention of careful clinicians. Thompson of Cincinnati two years ago published in this journal a paper on this subject, and has since reported excellent results from its employment. In cases in which the cough is so excessive as to cause vomiting, and nutrition is in consequence rapidly failing, the placing in the trachea, an hour before eating, of 1 to 3 drams of a 2 per cent. solution of menthol, will permit of both the ingestion and assimilation of the essential nutriment. By this method the detrimental effects of the use of opium and its derivatives to control the cough are entirely avoided. These injections should not be used when there is present acute inflammation of the lungs or bronchi. In bronchiectasis, gangrene and syphilis of the lung, as well as in the case of tubercular cavities, this method excels in efficiency any other for the purpose of reducing fever, limiting the local process, and subduing the odor that

¹ Falls City (Neb.) News.

marks the breath in these cases. When there is suppuration occurring in the lungs or bronchi, guaiacol is the preferable remedy for administration in this manner, and a 1 per cent. solution is usually sufficiently strong to be effective. Under this treatment cavities in the lung have appeared to heal, and certainly the bacilli producing suppuration have been seen to disappear from the sputum. The technic is very simple to anyone at all accustomed to using the laryngoscope. Placing the mirror in the usual position and asking the patient to inspire deeply, the fluid is permitted to flow easily from the syringe into the upper portion of the larynx. If this is done gently there is very seldom any choking or other unpleasant symptom. The method, even though it be essentially symptomatic, is well worthy much wider recognition at the hands of the profession than it at present receives.

LOCATION OF THE PRIMARY LESION OF PULMONARY TUBERCULOSIS.

Birch-Hirschfeld¹ made a careful examination of thirty-four cases of latent beginning pulmonary tuberculosis with the special purpose in view of determining the exact place in the lung where the tuberculosis first begins. The bodies examined were those of apparently previously healthy individuals, who had died suddenly. He reaches the conclusion that the general belief that pulmonary tuberculosis in the adult begins as a caseous lobular pneumonia does not correspond with the facts. Interstitial tubercle formation is also exceptional as the primary form of lesion. In the majority of cases the first focus consists in a subepithelial tuberculosis infiltration in the mucous membrane of a bronchus of medium caliber of from the second to the fifth order, according to the usual designation. The peribronchial tissue is secondarily involved. On account of this infiltration the lumen of the bronchus becomes narrowed or closed completely, and the corresponding part of the lung collapses. After the obliteration of the bronchus it is possible that the tuberculous focus may heal, with encapsulation and formation of cicatricial tissue in the collapsed part of the lung. On the other hand, should disintegration of the tuberculous area in the bronchial wall occur, especially likely to take place in consequence of a mixed infection, which undoubtedly plays the principal role in disintegration, then the lumen of the bronchus may again become free and allow the transportation of tuberculous material in both directions. Rupture of vessels in the wall of the tuberculous bronchus, or bronchiectasis, would also be likely to exercise an unfavorable effect upon the progress of the disease. Based on anatomic investigations of the bronchial tree of the human lung, Birch-Hirschfeld establishes that the well-known localization of tuberculosis in the apices of the lungs takes place in a definite pulmonary area. This area corresponds to the posterior part of the lung apex and the adjacent subapical district. This tissue is supplied by a bronchial branch which is designated the ramus apicalis posterior. This is the part of the lung which during the time of puberty suffers especially on account of lack of room for growth; the bronchi and corresponding portions of the lung on that account develop poorly. This portion of the chest

takes but a very small part in the respiratory excursions. The crippling of this part of the bronchial tree is especially liable to give rise to dead spaces in the bronchi in the posterior part of the apex, in which the conditions are then very favorable for the deposition of infectious material. This local disposition should not be regarded so much as a physiologic product, but rather as the pathologic result of an unhygienic mode of life. In view of these investigations Birch-Hirschfeld would emphasize the fact that asepsis of the inspired air and gymnastics of the lungs are both factors which deserve more attention than they have heretofore received, in the prophylaxis and treatment of pulmonary tuberculosis.

PYEMIA FOLLOWING THROMBOPHLEBITIS OF SUPERIOR VENA CAVA.

In the case of a man 63 years old, the clinical diagnosis being pulmonary emphysema, bronchitis, albuminuria, and lobular pneumonia, Carl Springer¹ made the following interesting observations: Immediately below the bifurcation of the trachea, the anterior wall of the esophagus presented a diverticulum, at the summit of which was a small opening which led into a cavity situated below and to the right of the bifurcation of the trachea, and having a diameter of 2.5 cm., the contents being purulent material.

The superior vena cava presented a friable, grayish-red discolored thrombotic mass, on the intima of that part situated over the cavity mentioned. There were numerous metastatic abscesses in the lungs, the lungs containing staphylococci which stained with Gram's method, and short bacilli destained by Gram's method. Sections passing through the wall of the vena cava at the site of the thrombus showed an intense inflammation and numerous heaps of cocci. Outside of the vein were found tubercles with giant cells and caseous areas. Perforation of the wall of the vena cava had not taken place. It would seem that tuberculosis of the peribronchial lymph glands, followed by caseation and cicatrization, led to the formation of a traction diverticulum of the esophagus. The perforation of this diverticulum, due to some accident, as for instance swallowing a piece of bone, or perhaps due simply to the progressive tuberculous disintegration of tissue, opened the way for a secondary infection from the contents of the esophagus. The suppuration thus produced led to the formation of the abscess cavity described, from which the inflammation invaded the wall of the vena cava, and produced the parietal septic thrombus, from which again infected emboli were carried into the lungs and produced metastatic abscesses. The fatal consequences of perforation of esophageal diverticula usually depend on the fact that the perforation takes place into a bronchus, followed by aspiration pneumonia and gangrene of the lung; in other cases erosion of a blood-vessel may take place, but an involvement of the vena cava of the nature here described does not seem to have been observed before.

SOME FALLACIES OF VITAL STATISTICS.

In the April number of the *English Journal of the Sanitary Institute*, Dr. Edward J. Willoughby calls attention to the possible sources of fallacy in vital statis-

¹ Deutsche Arch. f. Klin. Med., 1899.

¹ Prager Med. Woch., 1890, No. 7.

tics in a rather striking way. He first refers to what should be the qualifications of the vital statistician; he should not be an actuary nor a mere mathematician, but of a naturally logical mind, trained in matters of scientific inference, inductive and deductive, and should have with this a thorough knowledge of his subject and the sources of fallacy to which it is incident. Crude recorded facts are almost always misleading, and conclusions drawn from them alone seldom correct. Thus, the apparently most rapidly increasing population may be tending to exhaustion, the healthiest show the highest death-rate, short-lived communities may have the most old people, the age at death be least in the healthiest occupations, and deaths at advanced age be no evidence of conditions favoring longevity. All conditions, and there are a host of them, should be taken into account. Thus infant mortality may be low, but if the birth-rate is also low it may indicate a serious state of affairs, and vice versa. The mortality of infants under 1 year old should be calculated on the birth-rate, and for every subsequent year, on the number actually living at that age. A shifting and a stationary population present quite different conditions when one comes to estimate from statistics such matters as the average duration of life, the mortality at different ages, etc. So also with occupation, it would be easy to show that in some of the healthiest the death-age was low, simply because they are only followed by the young, but it so happens that sanitary statisticians have occasionally overlooked even this simple fact. Also in estimating the relation of marriage to births a fallacy is likely to creep in unless the calculation is made, not on the number of marriages, but on that of women who marry. These are only individual instances of a large number of possibilities of error when all the existing conditions are not taken into account. Dr. Willoughby's paper is noteworthy, not as contributing previously unknown facts, but as calling attention in a vivid way to facts too often overlooked.

ELEPHANTIASIS A SEQUEL OF REMOVAL OF THE INGUINAL GLANDS.

A rare but very important sequel of removal of the inguinal glands has been brought to the attention of surgeons by Hamann in a paper before the Ohio State Medical Society. He reports in detail one case, occurring in a woman operated on for the radical cure of femoral hernia, in which incidentally some of the saphenous and inguinal lymph-glands were removed, and also notes having seen three cases following removal of the inguinal glands for adenitis. While this complication is rare, it is of such grave importance to the surgeon that it should always be considered when operating in this region, and it may well be that, once attention is drawn to this curious complication, it may prove not to be so rare. Clinically the cases in a few days or a few weeks after operation suffered with acute and recurrent attacks of lymphangitis with lymphatic edema, due to interference with lymph-flow produced by removal of the glands and by the cicatricial contraction. These attacks were characterized by fever and sensations of chilliness. The genitalia were the seat of a firm edema with a sensation of fullness, and at times slight redness, itching and pain. The attacks resemble erysipelas, but no connection with

it has been determined. Each succeeding attack leaves the parts more hypertrophied, the connective tissue increases in amount, and gradually a condition of elephantiasis is established. Riedel¹ reported two cases of this character following extirpation of the inguinal glands, which led him to abandon the operation entirely, substituting for it incisions and curetting. Bayer² has thrown very clear light on the pathology of the disease. He shows that the loose periglandular fat and areolar tissue contains an extensive system of lymph-spaces. From this tissue in from three to six weeks after destruction or removal of the contained gland, regeneration of the gland and the vessels quite frequently occurs. It follows, that, if during the operation, or in subsequent suppuration this periglandular fatty tissue has been destroyed, regeneration of the gland cannot occur and a condition favorable to the development of elephantiasis exists. Hence he advises that part of the fatty tissue be always allowed to remain, and that every effort be made to avoid suppuration. These conclusions are of all the more importance because when once the elephantiasis is established nothing can be done for its relief, except wide excision, which is unsatisfactory. As a very unpleasant pitfall in the way of surgeons operating in this region this complication deserves very careful consideration.

ARTHO-NEURALGIA.

This name has been given to a nervous, painful affection of one or more joints that occurs especially in women, and may simulate an organic or an inflammatory disorder. It is scarcely a distinct disease, but rather a manifestation of hysteria. A typical instance is related by Nartowski³. The patient was a woman 32 years old, who presented herself on account of pain in the knees and weakness in the feet. The family history was neurotic, and the father had been alcoholic, dying of some obscure nervous disorder. The mother, who had been a niece of the father, had suffered much from headache, and had presented hysteric symptoms. As a child, the patient had been irritable and excitable, with a good comprehension and a good memory. Menstruation had set in at the age of 16, and was regular, without noteworthy discomfort. The patient was married at 23, and bore three children, after the birth of the last artificial means being taken to prevent conception. The patient felt dissatisfied, cried a good deal, suffered from headache, and passed through periods of excitement. There was often present the feeling of a ball rising from the hypogastrium to the throat. The appetite was lost; vomiting took place soon or several hours after eating and constipation was present, with palpitation of the heart. Two years before coming under observation she was startled by the barking of a dog, when she was seized with palpitation of the heart and severe pain in both knee-joints, preventing further locomotion. The pain alternated with feelings of coldness, of heat, and of numbness. These phenomena had persisted, and were aggravated at the menstrual period. The knee-joints appeared slightly swollen, were fixed in extension, and sensitive to

¹ Arch. f. Klin. Chir., Bd. xlvii, p. 216.

² Prager Ztschr. f. Heilkunde, Bd. vi, p. 105; Arch. f. Klin. Chir., Bd. xlix, p. 637.

³ Wiener Med. Woch., May 1899, p. 1093.

slight pressure with the finger, and even to the touch of a brush. The raising of a fold of skin caused great pain, but deep pressure or approximation of the bony constituents of the joint induced none. The knee-joints and the regions thereabout were red, especially at the menstrual period, but they soon became normal. The electric reaction of the muscles was normal. Passive and active movement of the joints was attended with pain and grating. The patient was encouraged to hope for recovery, and passive movement of the joints was practiced. On the sixth day the static spark was applied to both knee-joints. Improvement rapidly ensued, and the patient was soon entirely cured.

Medical News.

DR. TRACY C. WITHERSPOON, St. Louis, has been elected to the chair of surgery in the Marion Sims College of Medicine.

A PRIZE of \$100 is to be offered at the next annual meeting of the New Jersey State Medical Society for the best essay on "Hydrophobia."

THE FIRST case of yellow fever which has appeared in quarantine, New York City, for some time was brought in by a Norwegian steamship from Cuba on June 29.

DRS. CHARLES H. HUGHES, Henry H. Mudd, A. C. Bernays, W. H. Fischel, Charles Borck, F. L. Henderson and I. N. Love, all of St. Louis, Mo., will spend August in Europe.

THE NEW buildings of the London Hospital Medical College are about completed, and will be opened by Lord Knutsford July 18. The new laboratories, wards and museums of Guy's Hospital were opened July 7.

DR. C. M. NICHOLSON, St. Louis, a few days ago married the daughter of the Hon. Norman J. Coleman, who was a member of President Cleveland's cabinet, being the first secretary of agriculture.

A FRENCH committee is raising funds to erect a monument to the memory of Pelletier and Caventou, the discoverers of quinin, for which contributions are being received from all quarters of the globe.

PROFESSOR STOKVIS of Amsterdam recently celebrated his twenty-fifth professorial anniversary. As *Janus* remarks, "without him a number of useful institutions would never have existed, *Janus* included."

DR. G. P. ROBINSON of St. Louis, for many years professor of theory and practice in the Missouri Medical College, and also dean of the college, has retired from both positions. He has been placed on the emeritus list.

DR. D. R. BROWER of Chicago has been honored by the degree of LL. D., conferred by the Georgetown University, Washington, D. C., at its recent commencement. Dr. Brower expects to leave shortly for a six weeks' trip to the Hawaiian Islands. He will be accompanied from San Francisco by Professor Senn.

THE POPE has recently presented an oil portrait of himself to Dr. Mazzoni, to whose skill the Holy Father attributes his present good health. The Pope also made Dr. Mazzoni "Surgeon in Chief to the Apostolic Person," a position of honor and trust, but with very little pay.

BENDER BOUCHER, the most important post on the eastern coast of the Persian Gulf is now invaded by the plague. As all the Anglo-Indian trade for the interior

of Persia passes through this port, the danger of further contagion is imminent.

It is gratifying to state that the charge preferred against Dr. Trumbull W. Cleveland, New York City, in the case of Violet Irene Carhart, in which death followed the administration of resorcin and salol, was dismissed from court on June 23.

DR. ALVA H. DOTY, health officer of the port of New York, claims that in two years' work in connection with Chas. E. Fitzpatrick in his laboratory on Swinburne Island, he has succeeded in confirming the alleged discovery of Sanarelli's bacillus of yellow fever.

A CABLEGRAM to the *Philadelphia Ledger* announces that Count Malherbe, the Russian Consul at Buenos Ayres, controls the manufacture of the Sanarelli serum for yellow fever. It is said that 300 bottles have been prepared quite recently, and will be sent to New York City.

THE NEXT congress of the French Association for the Advancement of Science will be held at Boulogne September 14-21. A subsection on medical electricity has recently been established by the Association, and several important papers are promised in this branch of medicine.

AMONG THE Docenten recently raised to professorships are K. Benda, P. Heymann, and G. Salomon, Berlin; B. Von Kader called from Breslau to Charkow in place of the deceased Prof. E. Grube, while Geheimrath A. Fick, for many years professor of physiology at Würzburg, has resigned.

PROFESSOR RAYMOND, who commenced his life work as a veterinary surgeon, and who succeeded Charcot as professor of nervous diseases at the Hospital de la Salpêtrière, Paris, has just been elected a member of the Academy of Medicine. The vacancy was occasioned by the death of Professor Laboulbène.

THE REVUE MEDICALE DE LA SUISSE ROMANDE has recently published a comprehensive study of "Excision of the Seminal Vesicle and Vas Deferens in Case of Castration for Primary Tuberculosis," the conclusions of research with Roux of Lausanne, signed with the author's name in full, Princess Guedroytz de Beloseroff.

A STATUE of Duchenne de Boulogne is to be unveiled with much ceremony at Boulogne, during the meeting of the French Association for the Advancement of Science, September 14 to 21. The addresses in the new section of medical electricity include endodiascopy by Bouchacourt and electrolysis of strictures by Bordier.

A HYDROPHOBIA panic is reported in Jennings, Pawnee county, Oklahoma, date of June 26. A large mortality among hogs and cattle has occurred and horses and mules are not exempt. While no deaths of human beings are yet reported, several people have been bitten. A vigilance committee is disposing of the dogs and other animals affected.

DR. C. A. L. REED of Cincinnati leaves for Europe in about two weeks, and expects to be gone about ten weeks. During his absence he will visit the British Medical Association, International Gynecological Congress at Amsterdam in August, and the Brussels Congress for the Repression of Syphilis and Venereal Diseases in September.

SINCE the return of Surgeon J. C. Boyd, from the International Tuberculosis Congress the Government has been considering the proposition of erecting in the Southwest a sanitarium for consumptives in the service of the merchant marine. It seems that the greatest

difficulty so far manifested is to select a region which may be easily reached by all lines of travel.

THE SAME plan has been adopted by the University of Pennsylvania in the appointment of the successor of Dr. Charles B. Penrose, professor of gynecology, as was done in the appointment of the successor to Dr. John B. Deaver, in that announcement is publicly made that all candidates should make a formal application to the dean of the medical department prior to September 18, 1899.

SEVERAL weeks ago a peculiar bug made its presence known in Washington, D. C., where it caused considerable anxiety from the fact that its bite gave rise to serious symptoms manifested by intense pain and rapid swelling, mostly confined to the lips. Under appropriate treatment the inflammation subsided in about forty-eight hours. Cases have since occurred in Philadelphia and New York City.

IN PORTUGAL the government informs the chief physicians in a town that a certain sum is required of the local profession for the internal revenue. The local physicians assemble and partition the assessment among themselves, according to the supposed income of each. There is a similar arrangement for each profession and a court of appeals for those dissatisfied with their assessment.—*Echo Medical*, June 11.

PROFESSOR E. A. SCHAEFER has been elected professor of physiology in the University of Edinburgh. Professor Schaefer has been actively engaged in teaching for many years as Jodrell professor of physiology in University College, London. He has made many valuable contributions on various physiologic subjects, is the author of a text-book on histology, and is the chief editor of the new edition of Quain's Anatomy.

THE CABLE announces, from Santiago de Cuba, that Surgeon Clendennin died there July 4, of yellow fever. Captain Clendennin was a native of Illinois and entered the army as an assistant surgeon in November, 1886. He reached the grade of captain in November, 1891. In June, 1898, he entered the volunteer establishment as a brigade surgeon with the rank of major, and was in charge of the army hospital at Santiago.

THE UNIVERSITY of Kiel has arranged for post-graduate medical courses this summer, and the peculiar attractions of this northern port and its neighborhood to popular resorts, will no doubt attract many students.

THE EXPENSES of the Russian Pharmaceutic Congress, to meet at Moscow in December, are to be defrayed by a rouble paid to the treasury by the pharmacists for each thousand prescriptions filled at their establishments during 1898.

A COMMITTEE made up of Drs. Philip Marvel of Woodbury, Wm. Pearson of Orange, B. A. Waddington of Salem, E. Hollingshead of Mt. Holly, and Alexander McAllister of Camden, has been appointed by the New Jersey State Medical Society to arrange for the entertainment of the AMERICAN MEDICAL ASSOCIATION at Atlantic City next year. It is thought the sum of \$2500 will be raised for the entertainment of the members of the ASSOCIATION.

FROM the outbreak of yellow fever at Santiago, Cuba, to June 25, there was reported a total of 33 cases and 5 deaths. One death occurred in the case of a member of the Fifth Infantry while the others were civilians. On June 28, 14 new cases were reported, bringing the total number of cases up to 50. So far 12 deaths have occurred. During the present year 13 cases have occurred in Havana, of which 5 proved fatal. At present there

are no cases of this disease in either Havana or Porto Rico.

THE BUREAU of Health of Philadelphia has come to the conclusion that the milk of this city is not as pure as was supposed a short time ago. It has been learned that formaldehyde has been added to keep it from turning sour. In order to do this a strength of 1-100 of 1 per cent. is all that is required. It is believed that the preservative is being sold in the form of a 40 per cent. solution. Wood alcohol has also been present in some samples.

MR. LAWSON TAIT's death was quite sudden, according to the *Lancet*. On June 13 he was seized with pain and serious symptoms connected with the kidneys, and died at 3 o'clock in the afternoon. The renal disease was of some duration, for two years ago a calculus became impacted in his urethra. This was removed by a surgical colleague, but his health had been indifferent since, and no doubt the disease which ultimately caused his death was progressing in the interval. According to his wishes his body was cremated.

SEVERAL physicians of Lille, France, have applied their scientific knowledge in perfecting industrial processes and have made large fortunes as more or less silent partners in manufacturing establishments. Professor Calmette recently presented the institute of which he is a director with a large sum given him by the proprietor of a certain industry as a share of the amount saved by certain improvements suggested by the scientist. The physicians in France take a prominent part in legislation, and the proprietor of a certain model candy factory is a practicing physician, formerly an army surgeon.

THE DREYFUS matter, according to the *British Medical Journal* has been the occasion of serious disturbances in the medical school of Lyons. Professor Agagneur had taken an active part in manifestations in favor of Captain Dreyfus and President Loubet, and the students attending his lectures had expressed their sympathy with him in this line of conduct. The next day the professor's lecture-room was invaded by a mob of persons, for the most part not belonging to the school, who made such an uproar that it was impossible for him to lecture. The Dean has posted up a notice, dated June 10, to the effect that the course of surgical pathology will be suspended till further orders.

CONSOLIDATION of the *Louisville Medical Monthly* and the *Louisville Journal of Surgery and Medicine* is announced, the two being issued after July 1, as the *Louisville Monthly Journal of Surgery and Medicine*. The *Louisville Medical Monthly* was purchased by Dr. Henry E. Tuley, early in June, he having edited one issue, that of July, and the *Louisville Journal of Surgery*, which continues the *Quarterly Journal of Rectal and Gastro-Intestinal Diseases*, was owned and edited by Drs. J. M. Mathews and H. Horace Grant. The following will be the editorial staff of the new monthly: Drs. J. M. Mathews, H. Horace Grant, A. M. Cartledge, and Henry E. Tuley. Dr. Grant will be business editor and Dr. Tuley managing editor.

A MEMBER of the Stille School of Osteopathy has opened an office for the summer in St. Joseph, Mo., and by his sign announces to practice medicine and surgery as well as osteopathy. The efforts of the AMERICAN MEDICAL ASSOCIATION, and the Association of American Medical Colleges to elevate the status of the medical profession are seriously handicapped in Missouri. Owing to the restricted power of the State Board of Health, and the indifference of the present governor and legislature the

state is overrun with osteopaths, magnetic healers, vitapaths, Christian Scientists, Divine Healers and frauds of every kind. A school of magnetic healing has recently been opened in the state, turning out healers in thirty days. The necessity of the doctor being a politician is evident in this state.

ACCORDING to the *Peoria Transcript*, Francisque Crotte, who gained such notoriety a little while ago when he alleged endorsement of the AMERICAN MEDICAL ASSOCIATION, left Peoria quite suddenly recently without leaving his address. According to the above paper, his associate and all the belongings of the pair have disappeared and the whole affair is enveloped in darkness and mystery. The paper goes on to say that Crotte's plan to start a sanitarium at Pekin, where he claims to have found mineral water with the necessary constituents for a successful treatment of consumption, has failed. The general denial of the endorsement of the ASSOCIATION of this man Crotte, made in the *JOURNAL* of June 17, and which was sent over the country by the associated press, evidently had its effect in thwarting the plans of this latest schemer.

A STATUE of Baron Larrey was recently unveiled at the military school of Val-de-Grace, near Paris, with appropriate ceremonies in honor of this surgeon and military hygienist who most worthily carried on the traditions of the great name of his father, the Baron Larrey of Napoleon's day. Of both it has been said that they were men and surgeons of "impeccable honor;" both were present in all the campaigns of their day; the father in sixty battles and four hundred engagements; the son, "Antwerp, 1832, Italy, 1859, and Army of the Rhine and Siege of Paris, 1870-71," although he never equaled his father's record of two hundred amputations in one day. In a notice of the father (*JOURNAL*, xxx, 1003) it is said that his name stands only below that of Ambrose Paré, and the name of the son has been connected with nearly every improvement in the French military health department during the century.

THE NEW City Hospital commission for St. Louis has introduced ordinances into the City Council for the immediate commencement of new buildings. By amendment to the charter, 1 per cent. of all city revenue is applicable to the above purpose; \$200,000 is now available, and within a few years buildings to the value of several millions will be erected. The old grounds, left after the destruction of the old city hospital by the cyclone a few years ago, will be utilized. The pavilion plan will be followed in the construction. Dr. Max C. Starkloff, St. Louis' excellent health officer, recently appointed to his second term, will aggressively push the work. It is gratifying to know that the clinical teaching staff of the medical colleges will, in the new hospital, have absolute control of all patients, internes, etc. The medical educational interests of St. Louis will surely be the gainers.

ON ACCOUNT of the recent death in Philadelphia of a patient under treatment by "Christian Scientists," much interest has been aroused in this subject by the daily papers. One paper especially is deserving of much credit in the manner in which it has investigated the claims of this sect. A correspondent of the *Philadelphia Press* is said to have recently gone to New York, passed the required examination and received the degree of "C. S.," which degree is said to confer upon the recipient the power to heal all manner of ailments, as well as to displace all medical attendants of whatever nature. So far Dr. Henry Beates, president of the State Board of

Medical Examiners, seems to be the one most interested in bringing the matter prominently before the district attorney. In order to determine the legal status of the case, Dr. Beates has addressed a personal communication to the district attorney, asking for a strict construction of the law governing the matter. Dr. Beates has also communicated with the attorneys-general of many states on this question, and from many has received replies indicating that urgent steps could be taken in case of death while under this method of treatment. Many defects in the laws are supposed to exist, and in order to bring them into harmony it has been suggested that the matter be referred to the Attorney-General of the United States. Regarding the case in Philadelphia, it is believed action will commence as soon as Attorney-General Elkin is heard from.

PRACTICAL TRAINING IN SANITARY SCIENCE AND PUBLIC HYGIENE.—Dr. Arthur R. Reynolds, health commissioner of Chicago, has hit upon a novel method of supplementing the inadequate force of his department. This is not meant invidiously, since, as will be seen by the following, the Doctor offers a full *quid pro quo*. He has, during the past two years or more, tentatively admitted recent graduates in medicine and senior undergraduates, intending to enter the field of preventive medicine, to the department laboratory for practical work and instruction in chemie and bacteriologic analyses and examinations of water, milk and foods, in general bacteriology and in the special bacterial diagnosis of disease. Observation of the results of this experiment has, he says in a circular letter, dated July 1, led him to believe that the opportunities and facilities thus afforded may be of great value to the future sanitary executive and health officer, and he is now desirous of systematizing the effort and making it use more widely available. He points out that "the growing popular interest in sanitary science and public hygiene is creating a demand for trained sanitarians and medical officers of health which opens up a wide field of usefulness and employment for those members of the profession who shall especially equip themselves for the work. For this equipment a practical training in the varied labors of a metropolitan health department, in which the more or less theoretic education of the college may be supplemented by the test of practical application, should be of much use." Some idea of the extent and variety of the laboratory work of the department may be formed from the following figures: During the last year 2623 bacterial examinations of suspected disease were made, chiefly of diphtheria, typhoid fever and tuberculosis; and 2635 bacterial examinations of water, ice, milk, vaccin lymph, butter and other foods. During the same period nearly 30,000 chemical analyses were made of milk and cream, water, ice, etc. During the first five months of this year, in addition to an increased proportion of examinations for diphtheria, typhoid and tuberculosis, 1030 examinations for the Canon-Pfeiffer bacillus were made and a flood of light thus thrown on the etiology of influenza. Since the identification of the scarlet fever organism by medical inspector Class, more than 500 examinations of scarlet fever have been made in the laboratory and the bacterial cause of this disease has been demonstrated biologically. The chemical work of the laboratory, the labors of the Bureau of Sanitary Inspection, of the Division of Contagious diseases, the Bureau of Vital Statistics, the antitoxin and disinfection services are equally comprehensive and furnish a practical sanitary training school.

Therapeutics.

FOR THE ESTABLISHMENT OF FREE SECRETION

of all the organs Vandoren recommends the following prescription:

- R. Tinctura aconiti gtt x. | 5
- Tinctura bryoniae aa..... ʒi | 3 90
- Tinctura digitalis ʒi | 3 90
- Potassii nitratii ʒss | 1 95
- Extracti ipecac fluidi gtt x. | 5
- Syrupi pruni Virginianæ q. s. ad. . . ʒiv | 120

Misc. Sig. For adults, teaspoonful diluted every hour until patient is better; then only as seems to be required, say every three hours while fever lasts.

Foster says, "Digitalis given in physiologic doses and along with strychnin, is administered until the pulse comes down to 90 a minute. If it can be kept there, recovery will ensue in a shorter time, as a rule, than by the use of other methods of treatment," in all of which we heartily concur. In addition to the action of digitalis upon the heart, the drug unquestionably exerts some specific action upon the disease. In order, however, to get the antitoxin effect of digitalis, the remedy should be given in the form of an infusion in doses of from 4 to 6 fluidrachms (16-24 gm.) every three or four hours, and commenced the first or second day of the disease.

HEART TONIC.

E. G. Tufts recommends as a heart tonic, especially in asthenic cases:

- R. Strychnina sulphatis gr i-iii | 02
- Pulveris camphoræ ʒi | 3 90
- Sacchari lactis gr xx. | 1 30

Misc. Fiat Capsul. No. xii. Sig. One every four or six hours. Leonard Weber, however, suggests a better method of combating heart failure; he says, "I have seen excellent results from hypodermics of one-half drachm (1.95 gm.) of a 20-per cent. solution of camphor in oil, administered every half hour as indicated, and of strychnin, gr. 1-20 (1.29 gm.) two or three times in twenty-four hours, to support the heart."

IN HEPATIZATION TO PROMOTE ABSORPTION.

- R. Ammonii carbonatis ʒii | 7 80
- Potassii iodidi ʒss | 5 85
- Syrupi aurantii corticis ʒii | 62 20
- Aque ʒii | 62 20

Sig. Teaspoonful every two hours.

L. B. Young.

TREATMENT OF TETANUS.

What appears to be one of the most distinct advances in modern therapeutics is Bacelli's method of treating tetanus, as summarized by H. C. Wood, Jr. in *Mercer's Archives* for May. This consists in thoroughly disinfecting the wound, if any exists, placing the patient on light diet in a perfectly quiet room, and administering subcutaneously a 2-per cent. solution of carbolic acid. To begin with, 3 grains of the drug may be given in twenty-four hours but this may be rapidly doubled, or even trebled, with safety, as there is a remarkable tolerance to carbolic acid manifested by men and animals suffering with tetanus. Ascoli (*Bull. d. Reale. Accad. di Roma*, Feb., 1899) has made a careful study of the results of this treatment and compared them with those obtained from the use of the antitoxic serums. Dr. Wood's table, the results of this comparison, is so graphic as to be worthy of reproduction, as follows:

Method.	Cases.	Deaths.	Treatment.	Mortality.
Bacelli	34	1	25	3.2
Tizzoni	42	7	23	17.8
Behring	28	10	33	35.7

It will be seen that the advantage which these statistics give to the Bacelli method over the serums of Tizzoni and Behring is enormous, so much so as to give rise to a considerable degree of incredulity, which, however, must give way before the repu-

tation of Ascoli. Most writers rate the mortality of tetanus at from 80 per cent. to 95 per cent. As a rational basis for this treatment it is noted that Kitasato found that a 1.5 per cent. solution of carbolic acid annulled the toxic power of the tetanus bacillus. Of course, his laboratory conditions cannot be secured in the body, but in the latter case, as Wood well points out, the blood-serum is already engaged in combating the toxins of the disease. It has long been known also that carbolic acid has specific relations with the nervous system. Certainly in view of the facts that carbolic acid has no such unpleasant sequelæ as have been noted after the use of the tetanus antitoxins, and that the remedy is always at hand, coupled with the favorable results noted, the physician caring for a case of this dreaded disease should consider this method very seriously. The ordinary symptomatic treatment should be continued along with the carbolic acid.

ICHTHYOL IN SCIATICA.

J. Crocq, in *Semaine Med.*, announces that ichthyl is the most effective substance known for sciatica, although by no means a specific. Fourteen were entirely cured and four very much improved, so that they could resume their occupations, out of twenty patients with rebellious sciatica thus treated. Six to eight capsules, each containing ten centigrams of ichthyl, are taken during the day, and the painful region is anointed with the following mixture: ichthyl, 20 grams; chloroform and balsamum tranquillans, aa 30 grams.

FUNCTIONAL ALBUMINURIA.

Diet is the most important element in treatment. Strict attention, however, should be given to hygiene while the kidneys should be well flushed with plain or alkaline waters and hot water before meals. Aitken recommends the following prescription:

- R. Acidi gallici ʒi-ʒii | 3.9-7 80
- Acidi sulphurici diluti ʒss | 1 95
- Tinctura lupulini ʒi | 3 90
- Infusi lupulini, q. s. ad. . . ʒvi | 186 60

Misc. Sig. Tablespoonful three times daily.

Butler has successfully employed the following method of treatment. Correct gastric and intestinal indigestion, by regulating the diet and, if necessary, to temporarily aid digestion, pepsin, taka diastase or diluted hydrochloric acid being administered according to indications. The bowels should be kept freely open, and occasionally a blue pill given. In addition, as a routine treatment, the patient should take from 5 to 10 minims (.24-.6 gm.) of Fowler's solution, and 5 to 8 grains (.3-.5 gm.) of benzolol after each meal.

ACUTE NEPHRITIS.

For a child of six or eight years.

- R. Tinctura digitalis ʒss | 1 95
- Liquoris ammon. acetatis ʒss | 46 60
- Spiritus atheris nitrosi ʒii | 7 80
- Syrupi toluantii ʒss | 17 30
- Aque cari q. s. ad. . . ʒiii | 93 30

Misc. Sig. Teaspoonful every two hours.

Goodhart and Starr.

Brouovski says strontium lactate 60-90 grains (3.8-5.7 gm.) daily, is a pure diuretic, and is more valuable than any other remedy in the treatment of acute inflammatory conditions of the kidney.

ACUTE LOBAR PNEUMONIA.

During the first few days of the disease, C. J. MacGuire advises perfect rest in bed so far as possible, and calomel, gr. 1-15-1-5, according to effect, every three to six hours, and

- R. Liq. ammonii acetatis ʒi | 31 10
- Tinct. opii camphorata ʒvi | 23 40
- Spiritus atheris nitrosi ʒiv | 15 60
- Aque laurocerasi ʒss | 15 50
- Syrupi toluantii ʒss | 15 50
- Aque camphoræ q. s. ad. . . ʒiv | 124 40

Misc. Sig. Dessertspoonful every two hours in water.

During the early stage accompanied by much inflammatory pain, Foxwell recommends the following:

R. Tincture aconiti m. i (.06 gm.) every half hour for twelve doses, then every hour, or antimonii et potassii tartras gr. ¼ (.008 gm.) every hour for twelve doses, then less frequently. We think it much wiser to administer m. ½ (.03 gm.) every half hour, in a teaspoonful rather than a larger dose.]

In exhaustion, strychnin, hypodermically, in full doses, from 1-20—1-12 grain (.003-.005 gm.) every two or three hours, while in collapse, or when it is threatened, or at a time of crisis, Wood and Fitz recommend atropin. Its checking excessive sweating often gives it further advantage; caffeine in small dose as an adjuvant or, in special cases, to overcome stupor. We quote further, from Wood and Fitz, "When, in the first twenty-four hours of a pneumonia, there is violent constitutional reaction, with flushed face, rapid and noisy breathing, bloody sputa, intense headache and drowsiness, a hard, bounding, or a tense, corded pulse, venesection may markedly lessen all symptoms, and, if combined with dry cupping over the whole chest, may, we believe, lessen the amount of engorgement of the lung and the final area of consolidation."

CHRONIC NEPHRITIS.

An invaluable diuretic in this disease is Trousseau's diuretic wine.

R. Junip. contus	.....5x	39 00
Pulveris digitalis	.....3ii	7 80
Pulveris scillæ	.....3i	3 90
Vini Xerici	.....Oj	497 60

After macerating for four days, add

Potassi acetatis3iii	1170
------------------	-----------	------

Express and filter. Sig. For an adult, a tablespoonful three times daily.

W. H. Thompson recommends the following as a simple diuretic mixture:

R. Spiritus atheris nitrosi	.....3iss	5 85
Tinct. ferri chloridi	.....
Tinct. nucis vomice aa	.....3i	3 90
Syrupi	.....3iii	93 30

Misce. Sig. Two teaspoonfuls, three times daily.

Diuretin in 15-grain (.92 gm.) doses every three or four hours will stimulate the kidneys in certain cases better than almost any other remedy. It should be administered in solution in some aromatic water, but should never be dispensed in powders. The drug being incompatible with acids, the remedy should not be given immediately after eating, lest unpleasant symptoms arise from the action of the gastric juice upon the drug.

For the purpose of stimulating the kidneys, Dr. J. M. Patton advises the following:

R. Hydrargyri chloridi mitis gr. xviii	.....	1 17
Sacchari lactis	.....q. s.	

Misce. Fiat cht. No. vi. Sig. One powder three times daily while the bowels are kept closed by opium.

Eberle recommends for ascites:

R. Potassii bitartratis	.....3i	31 10
Potassii sulphatis	.....3ss	15 50
Pulveris scillæ	.....3ii	7 80
Antimonii et potassii tartratis	..... gr. i	06

Misce. Sig. One teaspoonful in a glass of water every four hours until active purgation and diuresis follow.

Miscellany.

Pollution of Rivers.—A large committee has been studying the river water in various parts of Germany, and has come to the conclusion that the refuse from factories, etc., is a much more important source of pollution than human dejecta, which, when previously duly filtered, need cause no concern. This report has been sent to each town interested in the question.

Medical Tribunals of Honor.—Those recently established in Prussia (see JOURNAL, XXXII, p. 507) are not exclusively medical, as the court is composed of four physicians and one

judge, and they are flagrantly unjust in one particular at least: they only include in their jurisdiction diplomaed members of the profession. Individuals practicing medicine irregularly are exempt from molestation by them as long as they abstain from assuming the title of physician or doctor, and physicians serving the state, and thus already under official discipline, are also exempt. Virchow, Langerhans and many others fought the measure in the Landtag, and thousands of protests were received, but as the *Semaine Medicale* observes, the Confederated States of Germany display a marked tendency to make the professions all feel the weight of authority.

Government Restrictions on Exportation of Plague Microbes.—The Indian Government has done very wisely in placing certain restrictions on persons wishing to carry or send cultures of the plague bacillus out of the country. To our mind the only remarkable thing is that steps were not taken in this direction before; for it is well known that many medical men who came to India for plague duty took with them specimens of the plague bacillus when they left the country. . . . The present action of the Indian Government is based on a representation from the health officer of the Port of Bombay, to the effect that a certain doctor took cultures of the plague bacillus on board the P. and O. ship *Carthage*, and continued to make experiments with them during the voyage. No cases of plague occurred on board; but it was noticed that two dead rats were found on the return trip to Bombay. Considering the close association between dead rats and plague, this fact, if known, must have caused general alarm, and we have no doubt that very considerable expense was incurred in the thorough disinfection of the vessel.

Professor Hafkine, the sanitary commissioner with the Government of Bombay, and the surgeon-general with the Government are agreed that the practice is most dangerous and should be stopped, and on their recommendation the Government of India, in exercise of the powers conferred by Section 2 of the Epidemic Disease Act of 1897, has issued the following regulations:

1. No person without the written or printed permission in this behalf of the Local Government in whose territories the port is situated, under the signature of a secretary to Government first obtained, shall take, either on his own person or in any baggage or parcel, or as cargo or otherwise howsoever, or shall send or permit to be taken or sent, on his account, either on the person of another or in any baggage or parcel, or as cargo or otherwise howsoever, any plague microbes or cultures on board any vessel in any port in British India.

2. No person, whether he has or has not obtained permission as herein required, shall take, send, or permit to be taken or sent as aforesaid, any such microbes or cultures, on any such vessel at any such port unless and until he has

a. Given fourteen clear days' notice in writing of his intention so to do to the health officer of such port, and

b. By a certificate signed by such person, and in such other manner as may be required by such officer, satisfied such officer that all such microbes or cultures are addressed to and intended for scientific purposes at some recognized constituted laboratory or laboratories specified by such person in his own handwriting, and are secured in a tin or tins, of adequate strength, hermetically sealed, and labeled with such distinguishing inscription as will suffice to make immediately manifest the nature of the contents thereof.—*Indian Medical Record*, May 31.

Provision for Physical Examinations Valid.—The New Jersey act of May 12, 1896, entitled "A supplement to an act entitled 'An act concerning evidence,'" and providing that on or before the trial of any personal injury case the court may, on application of any party therein, order and direct an examination of the person injured as to the injury complained of by a competent physician or physicians, surgeon or surgeons, in order to qualify the latter to testify as to the nature, extent and probable duration of the injury complained of, the supreme court of New Jersey holds, is constitutional. It considers that the proceeding authorized by the statute is a proceeding to obtain evidence analogous to proceedings that authorize an in-

spection of property and the taking of depositions, and that a statutory enactment such as this properly comes under the title of an act concerning evidence. Nor does it think that this act can be regarded as an infringement of the constitutional right of a party in a civil suit to be confronted by the witnesses. And it declares that neither will the consideration of any unfairness in resort to these proceedings be of any avail. The subject being deemed within the cognizance of the legislature, the legislative policy must prevail. In many of its sister states, the supreme court of New Jersey continues, case of *McGovern vs. Hope*, orders of this sort have been made; in others refused. In the main, the orders have been made under a power inherent in the court, and in some of the courts denied solely on the ground of lack of competent legislative authority. In the trial of causes, it goes on to say, orders have been made requiring a party alleged to have sustained an injury which is the subject matter of the suit to exhibit the injured limb to the jury, where such exhibition would not be accompanied by indecent exposure; and orders have been made in the courts of New Jersey without objection for the examination of the injured party in an adjoining room by reputable physicians, and such examinations have been had. In proceedings for divorce and nullity of marriage, orders for inspection of the body which are indelicate and distressing to the parties are made whenever necessary, and it is settled that the courts are not at liberty to decline to order such an inspection on the ground of indecency alone. This leads the court to go on to declare that where a suit is brought in which there is involved the consideration of injuries of a delicate nature, and which are, nevertheless, made the basis of damages to be awarded by a jury, there is no reason why such orders should not be made as would be appropriate to the administration of justice. The plaintiff, having brought suit and made claim for damages on account of personal injuries of that nature, cannot complain that the defendant resorts to legal methods to ascertain the existence and extent of such injuries. In executing the powers conferred upon the court under this statute in question, the supreme court says, the proceedings will be so controlled in the designation of physicians and surgeons, and with respect to the mode in which the examination shall be conducted, as to give both parties an equal opportunity of having witnesses present at the examination; and will also require, as far as practicable, the examination to be conducted in such a matter as not to subject the plaintiff to any unnecessary annoyance or exposure of her person.

Louisville.

VACATIONS.—Drs. J. M. Mathews and H. Horace Grant will leave on the 12th for Europe, where they will attend the meeting of the British Medical Association. Dr. I. N. Bloom, appointed chairman of the delegation to the dermatological section of the International Congress, will leave early in July for that meeting. Dr. J. B. Marvin will spend the summer in California. Dr. Henry E. Tuley will spend the month of August at Star Island, Mich. Dr. J. W. Guest, one of the city physicians, will be resident physician at Rockcastle Springs, Ky., for the summer.

COMMENCEMENTS.—The annual commencements of the spring and summer medical colleges were held last week. The Kentucky School of Medicine awarded twenty-four diplomas. The medical department of Kentucky University graduated nine, and the Hospital College of Medicine seventeen.

Philadelphia.

MORTALITY STATISTICS.—The total number of deaths which have occurred in this city during the week just passed was 420, an increase of 41 over last week, and a decrease of 135 over the corresponding period of last year. The principal causes of death were as follows: Apoplexy, 16; nephritis, 28; cancer, 14; cholera infantum, 36; tuberculosis, 45; diabetes, 2; heart disease, 36; pneumonia, 15; appendicitis, 2; suicide, 5.

RESIDENT PHYSICIANS TO GERMAN HOSPITAL.—As a result of the competitive examination for positions on the resident staff of this Philadelphia hospital, the following named have been appointed: Drs. Frank H. Dye and A. E. Wilcox of the University of Pennsylvania, and Dr. Ferguson of Jefferson Medical College.

STATE HEALTH OFFICER AND MAYOR CROSS SWORDS.—Differences between these officials have arisen over the prevention of pollution of the Schuylkill River and the necessary remedy for its betterment. The mayor is reported as saying that he has no jurisdiction in the matter, and that the State Board of Health should therefore apply the remedy. Twice he has called the attention of the state health officer to his duty, while the latter says he is doing his duty, and refuses to answer the letter of the mayor, while to others in the health department he replies cordially.

REQUEST TO CHARITY.—By the will of the late William Gallagher the sum of \$200 has been devised to St. Joseph's and an equal sum to St. Agnes Hospital. The residuary estate of the deceased will be divided equally between the above-named institutions and several other charitable organizations.

CHANGE IN HOSPITAL STAFF.—Owing to the resignation of Dr. J. G. O'Hara, Dr. H. F. Harbridge has been appointed one of the physicians to St. Mary's Hospital.

WILL SAIL FOR AMSTERDAM.—Dr. J. Montgomery Baldy and Dr. G. Hudson Makuen, delegates from this country to the medical congress which convenes in Amsterdam at an early date will sail on July 28 for the above-named city.

ENTERTAINMENT.—June 24 the Philadelphia Medical Club tendered a reception in honor of Dr. G. W. Guthrie of Wilkesbarre, president of the Medical Society of Pennsylvania.

WARNING TO MEDICAL STUDENTS.—A case which will doubtless elicit considerable interest on the part of the different medical colleges of this city occurred a few days ago. It seems that A. W., a colored woman 37 years of age, suffered from septicemia following a premature birth of a child. The patient had been visited by a senior medical student in one of the medical colleges and he had made an examination although no regular graduate in medicine was present at the time. After seeing the case the student advised that the district physician be called in attendance. The patient, however, was taken to the Philadelphia Hospital where she subsequently died. At the inquest Coroner Dugan took pains to warn the medical student against attending such cases, stating that if it had been in evidence that the woman had died of neglect the attendant would have found himself involved in serious trouble.

Queries and Minor Notes.

MEDICAL PRACTICE.

To the Editor:—Will you please to inform me as to whether a physician is required to pass an examination to practice his profession in California, Oregon or Washington? How would the west coast of Oregon be for one who for the last year or two has had slight pulmonary hemorrhage? Practice laws of the several states were published some time ago, but I am unable to find the JOURNAL in which published. Respectfully, C. E. B.

ANSWER.—1. In California the presentation and verification of a satisfactory diploma is required for license. In Oregon and Washington an examination is required in all cases, the laws being nearly identical in the two states.

2. The principal advantage of western Oregon or Washington to one who has pulmonary trouble would probably be in a milder climate than in the northern Atlantic states. The rainy season makes it not so favorable for out-door life as Southern California, which is the resort of consumptives who require a mild seaside climate. Eastern Washington and Oregon have less rain and sunshine and therefore may be naturally considered more favorable in these respects.

3. The medical practice requirements of the different states, as published by the Illinois State Board of Health in its last report, will be found in the JOURNAL for Nov. 12, 1898.

WORKS ON TUMORS.

To the Editor:—Will you kindly write me what you believe to be the best book available on tumors; one with the best cuts and descriptive text? I want it for microscopic work. Very truly, J. L. C.

ANSWER.—For a general work on tumors, that of Bland Sutton, though

small, is one of the best. It makes no speciality of the microscopic character, in fact the text is rather brief, but it is scientific and modern and what it states is reliable. The cuts also are good. The work of Senn is fuller in the histologic descriptions and might be preferred. Both of these works are, we are informed, now out of print and not easily obtained. Probably the needs would be pretty fully met by some of the recent works on pathology, general and special, that of Zeigler, published in 1888 by William Wood & Co., being as good as any, if not the best.

ROBERTS' LYMPH.

To the Editor:—In your last edition of the JOURNAL you state that Dr. Joseph R. Hawley made mistakes in his article on Dr. B. F. Roberts' lymph. The facts are I had Dr. Hawley's article copied by our local printer and the errors were made by him; as I refer to Dr. Hawley's article I find the mistakes you spoke of absent, but I did not find the errors in my copy until I had sent out over fifty. I write this statement in justification of Dr. Hawley, who ought not to be censured for some other person's mistakes. Dr. B. F. Roberts is my cousin. Very truly,
I. M. ROBERTS.

WHO KNOWS?

To the Editor:—A physician of my acquaintance told me recently that he had noticed in some of the medical journals an account of a wonderful spring in Wisconsin, for the cure of diabetes, but he was unable to remember where he had seen the article. Can you give me any information on the subject? Yours very truly,
C. W. W.

ANSWER:—We know of no such spring. Possibly some of our readers can furnish the information.

The Public Service.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., to and including June 29, 1899:

Daniel M. Appel, major and surgeon, U. S. A., leave of absence granted, to take effect on the closing of the general hospital at Savannah, Ga.
Henry A. Barnhardt, acting asst.-surgeon, from Camp Meade, Middletown, Pa., to accompany 10th U. S. Infantry to Manila, P. I.

Allen J. Black, acting asst.-surgeon, revocation of orders directing him to accompany Co. B, Batt. of Engineers, to San Francisco, Cal.

Charles C. Byrne, colonel and asst. surgeon-general, U. S. A., member of a retiring board to meet at Governor's Island, N. Y.

Hymen M. Cohen, acting asst.-surgeon, now at Willet's Point, N. Y., to accompany Co. B, Batt. of Engineers, to San Francisco, Cal., and there to report for duty in the Dept. of California.

W. H. Forwood, colonel and asst. surgeon-general, U. S. A., member of a retiring board convened in San Francisco, Cal.

Robert J. Gibson, major and surgeon, U. S. A., member of a retiring board convened in San Francisco, Cal.

James M. Kennedy, captain and asst.-surgeon, U. S. A., former orders amended so as to require him to report to the commanding general, Department of California, for duty.

James P. Kimball, major and surgeon, U. S. A., member of a retiring board to meet at Governor's Island, N. Y.

Timothy Leary, acting asst.-surgeon, from the Department of Porto Rico to the Department of Santiago.

George W. Pattison, acting asst.-surgeon, from Camp Meade, Middletown, Pa., to Buffalo, N. Y., for annulment of contract.

Paul Shillock, captain and asst.-surgeon, U. S. A., relieved from duty at Fort Grant, Ariz., at once to report for temporary duty in the Department of California.

Dwight B. Taylor, acting asst.-surgeon, sick leave granted from the Division of Cuba is extended.

Roy A. Wilson, acting asst.-surgeon, from Camp Meade, Middletown, Pa., to post duty at Willet's Point, N. Y.

Movements of Navy Medical Officers.—Changes in the medical corps of the U. S. Navy for the week ending July 1, 1899:

Asst.-Surgeon W. L. Bell, detached from the naval hospital, Mare Island, Cal., and ordered to the "Philadelphia."

Asst.-Surgeon H. E. Odell, detached from the "Philadelphia" and ordered to the naval hospital, Mare Island, Cal.

Asst.-Surgeon F. M. Bogan, ordered to additional duty at the Boston navy yard.

P. A. Surgeon R. G. Brodick, ordered to Washington, D. C., July 6, for examination for retirement, and then home and to wait orders.

P. A. Surgeon J. C. Rosenbluth, detached from the "Buffalo," when put out of commission, and ordered to the "Vermont" immediately.

Marine-Hospital Changes.—Official List of Changes of Station, and Duties of Commissioned and Non-Commissioned Officers of the U. S. Marine-Hospital Service, for the seven days ended June 29, 1899.

Surgeon A. W. Swetelle, detailed as inspector of relief stations of the third and fourth class.

P. A. Surgeon R. M. Woodward, upon being relieved by P. A. Surgeon A. R. Thomas, to proceed to Washington, D. C., for assignment to duty.

P. A. Surgeon A. R. Thomas, upon being relieved by P. A. Surgeon G. T. Vaughan, to proceed to Reedy Island Quarantine Station and assume command of the service.

Acting Asst.-Surgeon E. B. Hallet, granted leave of absence for two days from July 4, 1899.

Acting Asst.-Surgeon W. S. Walkley, granted leave of absence for three days from June 28, 1899.

Sanitary Inspector W. F. Brunner, granted leave of absence for three days from June 28, 1899.

Sanitary Inspector J. C. Rodman, granted leave of absence for seven days from June 27, 1899.

Hospital Steward E. J. Thurston, to proceed to New York City for special temporary duty.

PROMOTION.

P. A. Surgeon W. J. Pettus, commissioned as surgeon.

APPOINTMENT.

Frederick Townsend, of Michigan, to be acting asst.-surgeon, U. S. Marine-Hospital Service, for duty at Sault Ste. Marie, Mich.

Health Reports.—The following cases of smallpox, yellow fever, cholera, plague and leprosy, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended July 1, 1899:

SMALLPOX.

Indiana: Evansville, June 10 to 17, 1 case.

Kansas: Kansas City, June 16 to 23, 2 cases.

Louisiana: New Orleans, June 10 to 17, 1 case.

Massachusetts: Boston, June 24, 2 cases; Fall River, June 21, total to date, 34 cases.

Minnesota: Appleton, June 16, to date 12 cases; Worthington, June 16, 5 cases.

Missouri: Farmington, June 19, reported; St. Joseph, Oct. 26 to Apr. 19, 56 cases, 1 death; St. Louis, June 19, 9 cases.

Nebraska: Omaha, June 10 to 17, 2 cases.

New York: New York, June 17 to 24, 2 cases.

Pennsylvania: Philadelphia, June 24, 2 cases; Pittsburg, June 10 to 17, 1 case.

Porto Rico: Ponce, June 10, 1 case.

Ohio: Cleveland, June 3 to 17, 13 cases, 1 death; Columbus, June 16 to 23, 1 case; Massillon, June 17, 1 case.

South Carolina: Greenville, June 10 to 17, 1 case.

Virginia: Newport News, to June 24, 583 cases, 14 deaths; Norfolk, to June 22, 822 cases, 14 deaths; Portsmouth, to June 22, 344 cases, 5 deaths.

Washington: Spokane, June 17, 4 cases, 3 deaths.

SMALLPOX—FOREIGN.

Belgium: Antwerp, June 3 to 10, 3 cases, 1 death.

Brazil: Rio de Janeiro, May 5 to 19, 60 cases, 20 deaths.

Cuba: Nuevitas, June 16, 1 case.

Egypt: Cairo, May 22 to June 3, 4 deaths.

England: London, June 3 to 10, 1 case, 1 death.

Greece: Athens, June 3 to 10, 18 cases, 7 deaths.

India: Bombay, May 23 to 30, 9 deaths; Madras, May 13 to 26, 3 deaths.

Russia: Moscow, May 27 to June 3, 34 cases, 7 deaths; Odessa, June 3 to 10, 6 cases, 3 deaths; St. Petersburg, May 27 to June 3, 25 cases, 5 deaths.

Warsaw, May 27 to June 3, 1 death.

Scotland: Glasgow, June 3 to 10, 1 case.

Turkey: Smyrna, June 3 to 10, 1 death.

YELLOW FEVER.

Brazil: Rio de Janeiro, May 6 to 19, 34 cases, 17 deaths.

Cuba: Havana, June 8 to 15, 1 death.

Matanzas: Matanzas, June 2, 1 case; Santiago, from outbreak to June 30, 35 cases, 11 deaths. All but 4 were among troops.

Mexico: Tampico, June 3 to 9, 2 cases; Vera Cruz, June 8 to 22, 79 deaths.

CHOLERA.

India: Bombay, May 23 to 30, 2 deaths; Madras, May 20 to 27, 5 deaths.

PLAGUE.

India: Bombay, May 23 to 30, 124 deaths; Madras, May 20 to 26, 1 death.

Persia: Bushir, June 3, 1 case.

LEPROSY.

Texas: Eagle Pass, June 30, 1 case.

CHANGE OF ADDRESS.

Case, G. B., from 114 Euclid Ave. to Colonial Arcade, Cleveland, Ohio.

Clark, C. G., from Ann Arbor, Mich., to Pittsfield, Mass.

Carlson, E. P., from Chicago to 1019 University Av., Madison, Wis.

Case, C. L., from Louisville, Ky., to Middleburg, Ind.

Campbell, P. F., from Bensalem to Elwood, Neb.

Foerster, O. H., from Milwaukee, Wis., to 3604 Walnut, Philadelphia, Pa.

Fanning, G. J., from New Orleans to Phillipsburg, Mont.

Hadley, E., from 236 N. Penn. to Willoughby Bldg., Indianapolis, Ind.

Horton, R. W., from Greenview to Waxhatch, Texas.

Harris, J. G., from 911 Washington, Chicago, to 918 S. 12th St., Philadelphia.

Hartley, R. A., from Chicago to Redlands, Cal.

Hartshorn, W. E., from Minneapolis, Minn., to Box 1087, New Haven, Conn.

Kurtz, T. J., from Chicago, to 313 West Court, Flint, Mich.

Kuhn, B. F., from Chicago to North Webster, Ind.

Layne, E. R., from Hualdsburg to Danville, Ga.

Lawrence, A., from Millville to Malden, Mass.

Mogk, W. A., from Ann Arbor to 546 Second Av., Detroit, Mich.

McSwain, D. L., from De Funiat Springs to Nocatee, Fla.

Notage, H. P., Providence, R. I., to Goshen, Mass.

Nauman, B. J., from Mendota to Peru, Ill.

Purdue, F., from Swinton, Mo., to Alto Pass, Ill.

Piper, E. D., from Chicago to Waukegan, Ill.

Fittner, J. H., from Nashville, Tenn., to High Springs, Fla.

Richmond, C. B., from 711 17th St. to 1737 Melton St., Denver, Colo.

Roop, J. W., from Montrose to Snyder, Ark.

Sherman, C. F., from 1936 to 1556 N. Halsted St., Chicago.

Smith, J. P., from 280 State to 69 Washington, Chicago.

Samuel, J. R., from 2501 Oxford to 1617 N. Broad, Philadelphia, Pa.

Strout, A. B., from 319 W. Indiana to 533 W. Monroe, Chicago.

Soule, C. E., from Morris to Sheridan, Ill.

Tenney, L. P., from Crockett to Archer City, Texas.

Woods, J. G., from Louisville, Ky., to Meersburg, La.

Weld, W. H., from Deadwood, S. D., to Fort Atkinson, Wis.

The Journal of the American Medical Association

VOL. XXXIII

CHICAGO, ILLINOIS, JULY 15, 1899.

No. 3

Original Articles.

BEST METHODS IN THE TREATMENT OF APPENDICITIS.*

THEIR SOCIOLOGIC BEARING.
BY ROBERT T. MORRIS, M.D.
NEW YORK CITY.

It seems strange when accurate knowledge is so easily accessible on the subject of appendicitis, that bad methods in the management of the disease still persist. I will briefly review some of these, and approximately in the order of their importance.

The worst method is that which treats the patients by various medical means. Many of these recover without further attacks, many die and a larger number have recurrent attacks and suffer more or less invalidism for months or for years. It is impossible to determine in advance which course will be followed by any one case. That is always determined afterward. Consequently the cases that are going to recover without further attacks, recover; the ones that are going to get into dangerous complications, get into dangerous complications; the ones that are going to have recurrent attacks, have recurrent attacks, under medical treatment. There is no way for determining in advance what the eventual outcome of any case will be. The death-rate under proper surgical treatment in the first stages of an attack is a fraction of 1 per cent. The death-rate under medical treatment of any sort has not been shown to be less than 25 per cent., consequently the rational deduction is that the conservative treatment of these cases is the one which avoids speculation and arrives at a definite and satisfactory conclusion early in the history of the case.

Next after medical treatment comes various bad methods of surgical treatment which have a special death-rate of their own. Methods of surgical treatment which have a death-rate of their own are here briefly enumerated:

Iodoform Gauze Packing.—This is harmful in two ways. The peritoneum absorbs iodoform with such rapidity that toxic effects are produced in some patients from a very small quantity of the drug. If we examine the urine of patients who are thought to be dying from septicemia or exhaustion, and who have iodoform gauze in the peritoneal cavity, the result will surprise those of us who have not made such examinations. A little urine stirred up with a pinch of calomel in a saucer will show the brownish reaction, as iodid of mercury is formed in cases in which the urine contains iodine. A marked peculiarity of these cases of death from iodoform poisoning is the good appearance of the wound itself.

Gauze Packing.—Gauze packing without iodoform stands close to iodoform gauze packing in the order of injurious resources which have a special death-rate of their own. Strong and well men cannot bear in the abdominal cavity the presence of a half yard of gauze, and I do not know why a weak and exhausted patient should

be asked to bear what cannot be borne by a strong man. Aside from the shock caused by gauze packing, the gauze causes excessive lymph exudation. This causes a rich culture-medium for bacteria, and further, it forms strong and troublesome adhesions of viscera. When gauze packing is removed, it causes so much distress that surgeons sometimes anesthetize the patient when the dressing is changed. Gauze packing often causes post-operative obstruction and ileus by its direct mechanical effect, as does also the drain in the form of strips of gauze which are carried to various points among viscera for drainage, when peristalsis of the bowel causes the drainage strips to encircle bowel loops. It is impossible to guard well against post-operative ventral hernia in any case in which gauze packing or multiple gauze strips have been employed. Gauze packing or gauze strips are not only harmful but they are unnecessary and may be entirely replaced by a narrow drainage wick covered with gutta-percha tissue, which avoids adhesion formation to the mesh of the wick. The narrow wick allows the wound to be closed and accurately sutured. It must be managed with a knowledge of the mechanical principles involved in dealing with capillarity.

Extensive and Multiple Incisions.—The necessity for making an incision four inches in length should rarely ever occur in any case of appendicitis. Multiple incisions are unnecessary. The short incision of $\frac{1}{2}$ inches in length for interval cases or primary infection cases before abscess has developed, is all-sufficient for surgeons who have given themselves opportunities for training in adhesion work, in most of the cases. In cases with abscess and wide-spread infection, an incision three inches in length is usually sufficient. The idea that all parts of the peritoneal cavity should be reached by the surgeon in cases of wide-spread infection, is erroneous and based on ordinary ideas of cleanliness, and not on a knowledge of what the peritoneum is able to accomplish. In chief toxin-bearing collections of fluid are quickly evacuated, and the appendix removed; if the patient is not kept under an anesthetic for a long time; if the bowels are properly managed afterward, we need give little attention to the remainder of the septic fluid which is distributed about in the peritoneal cavity. There is a hyperleucocytosis already well established in almost every case with wide-spread infection, and the polynuclear leucocytes make easy work of removing the infected material left in the peritoneal cavity.

Protracted Operation.—Almost any operation for appendicitis, no matter how extensive the complications, should be completed in less than thirty minutes from the time of beginning operation. Operations which drag along to an hour or more, perhaps with much unnecessary handling of viscera, long exposure of the open wound and long-continued anesthesia, leave the patient in an unfavorable condition for rallying quickly from the operation.

Leaving Adherent Appendices.—A method which must have a special death-rate of its own consists in leaving infected appendices among adhesions. Such appendices are frequently gangrenous in part and they often

*Presented to the Section on Surgery and Anatomy at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

contain concretions and mucous inclusions. It is rarely ever necessary to leave such adherent appendices after one has become trained in adhesion work.

Protecting the Peritoneum.—"Guarding the peritoneum" is a method which may not have a large death-rate of its own, but which certainly causes delay in operative work. It consists in carefully walling off an abscess with gauze, especially arranged to protect the peritoneum. This requires a larger incision than is necessary and also the expenditure of time. It is based on conventional ideas of cleanliness rather than on present knowledge. It is much better to work rapidly through a small incision, let pus flow as fast and as freely as it will anywhere over the peritoneum and blow it out with hydrogen dioxide from time to time as the work proceeds. In the *N. Y. Medical Journal*, for April 29, 1899, I published a list of seventy-six consecutive cases of the most dangerous class of appendicitis, that had gone on to the stage of general suppurative peritonitis, septic peritonitis with liquefied lymph instead of abscess formation, multiple acute, single acute, and old abscesses, and managed by the principles briefly outlined above, with only eight deaths. I have operated on a very much larger number of cases in the interval, with various adhesion complications, and primary infection cases before abscess formation, and have not as yet had a death in this class of cases. Most of them were operated on through the inch and a half incision.

Bad methods in the treatment of the subject of appendicitis are quite as important as bad methods in the treatment of appendicitis. It is difficult for one to cut a clear path through the tangle of ignorance on the subject, and those of us who are doing it for the rest of the profession get little credit and have to content ourselves with the *mens conscia recti*. I believe that personally this work costs me thousands of dollars annually, and it makes enemies of men whom I would wish to call my friends. I would gladly drop the subject out of my field of discussion in surgical society meetings, but there is yet a moral demand for all of the voices that can be raised for the right, while thousands of patients are unnecessarily dying every year from appendicitis, and still more thousands are suffering the wreck of health and ambition and are disabled in the race of life for which they have equipped themselves. The greatest wrong is done to society by writers and speakers on the subject who have not taken the opportunities that are easily available for becoming properly informed, and who have little hesitation about expressing crude and dangerous opinions. I shall take this occasion for quoting some examples of such harmful and injurious influence. It seems necessary in order to do this to make direct criticism of the men who furnish such examples of bad influence. It is my custom, based on principle, to avoid criticism of my colleagues excepting at medical society meetings where there is fair opportunity for defense. All of the men who have been selected for this group of criticism and who are living in this country have been notified by letter of my intentions, and all have been asked to be present or to have some representative at this meeting, to make such answer as may seem proper.

Example A.—In the December, 1898, number of *Health Culture*, Dr. S. R. Beckwith has an article opposing the operative treatment of appendicitis. On reference to "Polk's Medical Directory," I find that Dr. Beckwith was formerly surgeon to all the railroads entering Cleveland, Ohio; that he is a member of the Ohio State Homeopathic Medical Society, American Institute of

Homeopathy and New Jersey State Homeopathic Society. In this article in question Dr. Beckwith says the reader may ask why he exposes the error of operation for appendicitis in a lay journal instead of choosing a medical journal for the purpose, and his answer is, that in medicine and in surgery improvements have come mostly from the people. Blood-letting he quotes as an instance of a method that was wiped out of existence by the people, and he proposes to direct his writings against operation in appendicitis to health journals.

Here are some quotations from the article in *Health Culture*: "The appendix is a hollow tube from four to six inches in length. The lower end of the tube is attached to the small intestine, passes through the internal and middle coats of the small intestine, and is attached to the inner fibers of a valve that guards the entrance between the small and large intestines." The function of the appendix he says is to work this valve, so that unprepared matters shall not escape too soon into the large intestine. Here appears a cut furnished by Dr. Beckwith in illustration of his anatomic position of the appendix.

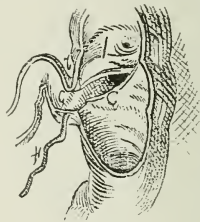


FIGURE 2.

Just below this valve the small intestine enters into the large one as shown at No. 5 in Figure 2. The valvular movement so accommodates itself that foreign substances, as where a child swallows a penny, readily pass into the large intestine. Number 4 in Figure 2 represents the vermiform appendix. It is a hollow tube from four to six inches in length; the lower end of the tube is attached to the small intestine, passes through the internal and middle coat of this, and is attached to the inner fibers of the valve.

Dr. Beckwith says that the appendix occurs in all mammalia, and is remarkably well developed in the hog. Any one who questions his anatomy can easily verify it by dissecting a hog, and he will make humble apology to any one who finds on such dissection that he is wrong, provided that a photograph of the dissection be sent him for examination. Dr. Beckwith says that appendicitis is extremely rare. "In more than fifty years of surgical practice" (graduated in 1853, according to "Polk's Directory") he has seen but two cases of the disease. Surgeons of larger experience have never seen a case. This author says that in the operation the entire appendix cannot be removed without producing death, the valve motion would cease at once if this were done, and death would as certainly follow as in an unrelieved case of strangulated hernia. All that modern surgeons do, and here is where they practice deception, is to snip off a portion of the tail of the appendix; the portion which remains becomes modified, so that it can still operate the valve. Dr. Beckwith's article is made up of columns of this sort of statement and his conclusions from time to time are against the modern idea of operation.

Articles of this sort, when read by medical men are harmless, because it is apparent that the author is not mentally responsible for what he says. But we must con-

sider that this article was published in a lay journal where it was presumably read by thousands of the laity, and its conclusions might have readily been the means of bringing misery into more than one household, because of the average lay reader's trust in an article which gives anatomic details, and which is signed by a physician. The editors of *Health Culture* are culpable in the matter of publishing such an article, but there is no means provided whereby they can be punished for this imposition on the people. They do the harm and innocent people are made to suffer.

Example B.—In the *JOURNAL* for April 8, 1899, Dr. Wilbur F. Sterman has an article on the "Medical and Surgical Treatment of Appendicitis." The author refers to a previous communication of his that was published in the *JOURNAL* for Dec. 18, 1897, advocating medical treatment, and he states that it was very favorably commented on by Dr. Haughton and others. Dr. Haughton's article, which many of us remember, consisted of conclusions based on cases treated medically, in which typically bad results were obtained, and no better warning against medical treatment could well have been published than this prop which Dr. Sterman quotes for supporting his side of the case. To show Dr. Sterman's honesty of intention, however, I quote from his article: "The constant aim of every member of the medical profession should be the welfare of humanity at large, and the greatest good to the greatest number." That certainly shows a sufficiently broad type of mind and it is too bad that Dr. Sterman has not learned that medical treatment is not the sort which carries out his intention toward the public. He is probably situated in an environment in which it is difficult to make a proper selection of authorities and to know the real difference between proper surgical treatment and medical treatment of any sort in appendicitis. Like many others in his position he fails to take into account the known pathology of appendicitis, and instead of being guided by the principles based on pathology, he depends chiefly on limited personal experience, and bad authority. He quotes from Ewald: "It is also shown by statistics that from 90 per cent. to 91 per cent. of all diseases of the appendix taken in their broadest sense recover without operation." Men like Ewald are responsible for leading physicians like Dr. Sterman astray. I have forgotten which Dr. Ewald it was who made this statement, as there are several surgeons of that name in Germany, but he has no such statistics as Dr. Sterman quotes. The reason why he has no such statistics is because patients with concretions in the appendix, with mucus inclusions, with tuberculosis of the appendix, with chronic abscess, and with adhesion complications, are not cured after the subsidence of acute attacks, and when these patients drop out at intervals in various subsequent attacks and complications they are not recorded for percentage statistics. The statement that such statistics are available is false and this Ewald disgraces German medicine. I would respectfully request German authorities to look after such careless unscientific writers, if they wish to preserve the fair name of Germany in the interests of pure science.

Dr. Sterman quotes again from an article by Treves, as he says, but I suspect that he is quoting from memory and consequently will not hold Treves responsible for the following quotation: "Concerning appendicitis obliterans and chronic recurrent appendicitis, even these cases do not invariably require operation. In some examples of the relapsing form much can be done by medical treatment. In the recurrent type, if operation is to be con-

sidered at all, it might be well to take the risk of waiting for another attack which may never come. In the chronic relapsing cases, however, if the surgeon deciding upon operation limits himself to the following indications he had better take advantage of the interval. (The words in italics interpolated in the text are mine.) Operation is indicated when: 1. The attacks have been very numerous. *Patients die in the first or second or any attack without furnishing symptoms for prognosis.* 2. The attacks are increasing in severity and frequency. *What they are doing is decided after death or recovery and not before death or recovery.* 3. The last attack has been so severe as to place the patient's life in considerable danger. *We know how to avoid such unnecessary risk and suffering on the part of the patient.* 4. The constant relapses have reduced the patient to a condition of chronic invalidism, and rendered him unfit to follow any occupation." *Horrible!* Would Dr. Sterman have us believe that English surgeons allow their bankers and their barristers, their sons and daughters and mothers and brothers to get into such predicament as is here depicted? If it were true, I would say shame on any member of our profession to-day, no matter who he is or where he lives, who allows an appendicitis patient to become a chronic invalid provided he is in a position to enjoy enlightened resources. Concerning the matter of waiting for the interval in order to have a safe operation, I would like to ask if that represents courage on the surgeon's part, or does not the word "safe" refer chiefly to the surgeon's reputation? If all patients would get to the safe interval, we would never need to operate to save life in appendicitis.

Dr. Sterman further says: "Thus from all other true and eminent sources of authority such as these, comes the warning note of conservatism in behalf of judgment and good sense." He apparently has not learned that appendicitis is not the disease to give opportunities for exercise of judgment and common sense. He evidently is not familiar with the statistics of the operation, or he would not speak of conservative treatment as that which has the largest death-rate.

Dr. Sterman then reports on two patients of his own who were subjected to medical treatment, both of whom recovered from acute attacks, but with much more suffering and delay than would have occurred under proper surgical treatment, and further than that, both of his patients must be expected to go through the same ordeal again at no distant day, we hope safely. This prognosis of their having to go through the same ordeal again is based on our common knowledge of the nature of the disease, and its familiar pathology. Dr. Sterman thinks that the patients will not have further trouble. Why does he think so? It is only a physician's hope. All of us who are sympathetic know what that is. We are prone to deceive ourselves in hoping good things for our patients, and patients die because we hope instead of applying principles.

Example C.—The *Medical Record*, Dec. 17, 1898, contains an article by Dr. T. J. Hutton of Chicago, entitled "A Cheap Cure for Appendicitis." Under the title are published statements of the doctor's standing: "Formerly Resident Physician Long Island College Hospital, Brooklyn, Brigham Hall Private Hospital, Canandaigua, N. Y., Burn Brac Private Hospital, Philadelphia, Professor of Diseases of the Mind and Nervous System in the College of Physicians and Surgeons in Chicago." Dr. Hutton's treatment consisted chiefly in the free use of calomel and soda purgation, supplemented by hot applications, these to be followed by salines if the

action of the calomel was too slow. He stated that enormous quantities of calomel could be given with impunity in cases of appendicitis with obstruction of the bowels. He stated that he could recall 100 cases with the symptoms of typhlitis, and perityphlitis, that he had treated, but never yet had he seen one that did not recover under that treatment. I immediately wrote the Doctor at his Chicago address, asking him for detailed history of any ten consecutive cases of the list, if he could furnish them. The letter was returned to me in New York, postmarked on the envelope "moved, left no address." The following number of the *Medical Record* contained a statement from the secretary of the College of Physicians and Surgeons of Chicago, stating that Dr. T. J. Hutton was not a professor in that college nor was he in any way connected with it. It was apparently a case of fraud throughout. And yet from the fact that the article was published in a medical journal of the standing of the *Medical Record*, and because the author subscribed himself as a professor in the College of Physicians and Surgeons of Chicago, the article must have done great harm, because it was in line with the ideas of a very large number of men who have not yet acquired principles that are to be applied in the management of appendicitis.

Example D.—Early last year, Dr. M. O. Terry of Utica published a statement to the effect that he had cured forty-nine out of fifty-one cases of appendicitis, by medical means with a so-called oil treatment, that he had previously advocated with much confidence. If these cases were in reality appendicitis cases, there must have been among them the usual proportion of concretions, of mucus inclusions, of tuberculosis, of chronic abscess and adhesion complications. The proportion of cases in which these things occur has been carefully worked out and published in a series of tables in the third edition of my book on the subject, and the data taken from actual observation of specimens must be taken into account whenever a physician speaks of medical cure of appendicitis. Knowing that Dr. Terry's number of patients could not be cured after the subsidence of acute symptoms when they still carried concretions, mucus inclusions, tuberculosis, chronic abscess, and peritoneal adhesions, I asked for a more detailed report on the cases, but it has been impossible to obtain such a report. Dr. Terry's excuse was that it was difficult to find out what became of the cases, and my argument is that he should not have published a report on cases that he could not find out about. I offered to pay all expenses of men employed by Dr. Terry or by myself, as he wished, in order to trace the history of his forty-nine cases, but I have not been enabled to obtain information about that. Our correspondence on the subject will be found in the files of the *N. Y. Medical Times* for 1898. It is of considerable interest and worthy of perusal by all who are at work on the subject of appendicitis. Finding that I could not get a report on the forty-nine cases said to have been cured, I asked Dr. Terry to report on ten consecutive cases. He finally gave, in the *Medical Times*, a report on ten cases, but these appeared not to be consecutive cases, and there was nothing to show that the methods for making a correct diagnosis had been employed, and no statement of interval palpation finding and nothing excepting a statement that most of the patients considered themselves cured. Consequently we are left without any foothold for guidance in placing a calculation on the data that Dr. Terry furnished. I have had occasion to operate on several patients who had undergone Dr. Terry's oil

treatment. By hearsay I have learned of the expected proportion of deaths and exacerbations in patients who had undergone this form of treatment at the hands of Dr. Terry, and of others who stated that they had followed his methods, and it is much to be regretted that Dr. Terry cannot be persuaded to apply scientific methods in making a report for us. I do not wish to infer that it is his intention to be dishonest in the matter; his reports simply indicate a lack of scientific training and an unwillingness to learn the real facts about his cases because of his confidence in a method of treatment that he is advocating. Much suffering results in consequence of his writings because others who are too busy to acquire a knowledge of the real pathology and the real statistics of appendicitis, depend on such reports for guidance.

Example E.—Apropos of the publication of one series of 100 consecutive unselected appendicitis operations of my own with a death-rate of 2 per cent., Dr. E. C. Savidge of New York wrote, in the *Medical Record* of Dec. 12, 1896, commenting on this paper, in connection with the statistics of certain European operators who had furnished creditable statistics in other fields of work. I quote from Dr. Savidge's letter in the *Record*, as follows: "The statistics of Morris when compared with surgeons who have a 10 per cent. or 20 per cent. mortality prove logically that he is five or ten times more skillful than they. The figures of Pean and Jacobs logically prove that they have five or ten times more individual art than the principal surgeons at the New York hospitals. But does anybody who knows the whole ground believe these logical deductions? Suppose that surgeons with fancy statistics meet a dozen desperate cases in their respective lines, each with one bare operative chance in a hundred, would these gentlemen have regard for their statistics and refuse the patient the one poor chance by operation, or would they rule out from their statistics these practically moribund cases? In such event, where the operators may be soberness and truth itself, their figures are vainglorious cheats as tests of comparative skill." This is an example of one of the most harmful types of writers who would bar progress, because it represents the communistic spirit carried into a liberal profession. Intolerance of merit is common enough, but this usually works itself out in petty revenge in private, and there are few who are bold enough to publicly write as Dr. Savidge did, and divert the attention of the profession from the real point at stake, the data of progress. Dr. Savidge turns my utilitarian intention into a crime, for I consider that publication of misleading surgical statistics is a crime if the surgeon's position is such that others depend on him for guidance in choosing methods of procedure. My statistics were not published for the purpose of showing any superior skill on my part, in fact I had not anticipated any such strange reading of the report. They were published for the benefit of surgeons, to show what could be accomplished by following certain surgical principles that had been elaborated in the texts accompanying these statistics. I had not "refused help to any moribund patient," but had operated in every acute appendicitis case that I had seen, with the exception of two patients who were dead when I arrived, and 20 per cent. death-rate in these 100 cases would have been quite legitimate. There were thirty-eight cases with abscess or worse complications, and most of the 100 had adhesion complications. The object of the report was to show why the death-rate was 2 per cent. instead of 20 per cent. and to show it in such a way that the report would be of

value to surgeons. Dr. Savidge diverted my effort and placed me in a contemptible position on the basis of the report, because to a high-minded, conscientious physician nothing seems more contemptible than refusing help to a suffering patient in order to advance any selfish interests of one's own.

Example F.—At the Denver meeting of the AMERICAN MEDICAL ASSOCIATION, Dr. W. W. Keen of Philadelphia was reported to have said in one of the discussions, "I protest against the statement that we can obtain a surgical death-rate of only 2 per cent. in appendicitis. I challenge any operator in this room to take 100 well persons and operate upon them without losing more than 2 per cent." On reading the report, my natural impression was that Dr. Keen had been misquoted, but on inquiry it was learned that the report was correct. This is an example of the most harmful type of obstruction to progress, because of the importance of its author. Concerning a death-rate of 2 per cent. in operations on well people, Drs. Bull and Coley have published in the *Annals of Surgery* a report on over 8000 hernia operations at the hands of several operators with a death-rate of a fraction of 1 per cent. Dr. Coley informs me that he has operated on over six hundred hernia cases with the loss of only one patient. Concerning the death-rate of 2 per cent. in appendicitis operations, Dr. M. M. Johnson and I have each recently published a list of 100 consecutive unselected appendicitis operations with a death-rate of only 2 per cent., and if we wished to make a report on selected cases, omitting abscess and septic peritonitis cases, we could show a death-rate of nil up to date.

Dr. Keen then was wrong, but let us consider for a moment how much more important a matter it is for Dr. Keen to be wrong than for Dr. S. R. Beckwith, for example, to be wrong. Most patriotic members of the profession like to believe that there are as truly great men in our profession as in any other profession to-day. We like to believe that there are no greater surgeons than American surgeons. According to human experience, greatness implies the possession of constructive motives, nobility of purpose, catholicity of view, erudition. It means caution in assertion that is not based on knowledge. When a man has arrived at Dr. Keen's position in the profession, it is our natural tendency to group him among our great men, and so much weight is given to his expressions of opinion that he quickly adds a strong bar to progress in any direction when he discredits advance work without having given attention to the subject. If the argument is made that he was not discrediting advance work, but was simply dissuading members of the audience from expecting such statistics at their own hands, then he was in the position of a teacher of law who argues that legal principles are not to be taught the class because so many members will fail to carry them out in practice. The reports on 2 per cent. death-rate statistics in appendicitis surgery had been made for the purpose of sustaining the principles of treatment that gave such statistics.

In closing, it is no more than right to express a feeling of pride in the results that have been accomplished in appendicitis work by many American surgeons. Let us take for comparison, a showing from France, a report on appendicitis in the French army, by Chauvel, in the *Bulletin de l'Académie de Médecine* for January, 1899. A study of cases of appendicitis in the French army during the last three years, 171 in number, shows that 83 were treated medically and 88 operated on. Medical treatment had a mortality of 4 per cent among those treated before the fourth day, 37.8 per cent. among those

treated from the fourth to the eleventh day and over 50 per cent. of those whose affection was not diagnosed and treated until after the eleventh day. Surgical treatment had a mortality rate of 42 per cent. among those operated on in the first five days, 30 per cent. among those operated on from the fifth to the tenth day. There were two deaths among those who were operated on in the interval. Another point that will amaze American surgeons in these statistics is the fact that the mortality among cases in which the surgeon removed the appendix amounts to 7 out of 18 cases, while in 56 cases in which the operation was restricted to opening abscesses and draining, there were 16 deaths. I make no comments in this grewsome and horrible display, except to say that the way is known for making the death-rate in appendicitis in the French army less than 2 per cent. as soon as the French surgeons choose to adopt methods which give a trifling death-rate. From English reports I am unable to obtain statistics that would not reflect on individual surgeons and this I do not choose to do. Suffice it to say that England is to-day very far in the rear of enlightened management of appendicitis. Germany, which has led the world in medicine and in surgery for many years, shows that in the peculiar field of appendicitis work, methods commonly employed are not representative of German science.

The discussion following this and other papers on appendicitis, read at the same time, will be published at the completion of the series, which will be in about two weeks.

EMPYEMA OF ANTRUM.*

BY HENRY G. OHLS, M.D.

CHICAGO.

From a time at least as early as the meeting of Eneas and Dido, caverns—antra—have been the abiding places of mystery and romance. From a perusal of the literature one might even suspect that the same terms would apply to much that has been written about the antrum. The increased attention given diseases of the nares and the accessory cavities has greatly increased the number of cases recognized within the last two decades. Lennox Browne¹ states that no cases were diagnosed during his association with Sir Morrell Mackenzie, 1866-73. Post-mortem investigation² now brings to light numerous cases not recognized during life.

Anatomy.—Let us refer briefly to the anatomy of the antrum, merely noting its vulnerable points and those peculiarities that give to inflammation of this cavity its peculiar characteristics. It is a closed cavity, except for the ostium maxillare, which is located about 2 to 2.5 cm. above the floor, and opens into the lower part of the hiatus semilunaris, which is often a continuation of the infundibulum in the form of a half tube, according to Fillebrown³. The relations between the frontal sinus, the infundibulum, hiatus and ostium maxillare are well shown in the excellent plates by Howard A. Lathrop⁴ in the Warren Triennial Prize Essay for 1898. The outer border of the floor is often marked by prominences corresponding to the projecting palatal roots of the first and second molars, and less often of the second bicuspid and third molar. The bone covering the roots is often very thin, as is also the inner wall just posterior to and a little below the hiatus. Indeed, the bone is often lacking in the latter location. The infraorbital nerve and the anterior and posterior dental nerves run through canals in the walls of the antrum; 16 per cent. of antra are divided more or less completely by bone septa in

* Read before the Chicago Laryngological and Climatological Society, May 20, 1899.

various directions, according to Eugene S. Talbot⁵. M. Boulay⁶ points out, in addition to these divisions, the diverticula that often extend toward the canines, inward, or into the zygoma. The mucous membrane is somewhat thicker than in the other sinuses, and is provided with more glands. The early development of the antrum, about the fourth fetal month, is also a matter of interest. The size, shape and relations between the antra and the nasal cavities and the palatal arch vary exceedingly. (Zuckerland⁷).

Age and Sex of Subjects.—Gottlieb Kicer⁸, from a study of 200 post-mortems made without regard to the cause of death, including 89 males and 106 females, found a total of 88 empyemas, of which 39 affected the antrum. Of the latter, 1 occurred between the ages of 10 and 20 years; 13 between 20 and 40; 16 between 40 and 60; 9 between 60 and 80. D'Arcy Power⁹ reports an empyema in a child, and Alex Douglas¹⁰ saw a case in a 3-weeks-old infant. M. Rudaux¹¹ reports a case in a 3-months-old child, due to the eruption of a tooth into the floor of the antrum. St. Clair Thompson¹² attributes these cases to acute osteomyelitis of the maxilla, while George Avellis¹³ attributes them to tubercular disease. Lennox Browne¹⁴ thinks the possibility of empyema occurring at a very early age is evident on account of the early development of this sinus as compared with the other sinuses.

Etiology.—Diseases of Teeth: It is a matter of historic interest at least that the only clearly discerned cause of empyema was until a comparatively recent period, caries of the teeth, and the teeth will certainly always demand attention in diagnosis and treatment. But that this is even the principal cause of empyema is more than questionable, though it will require more statistics to gain an exact idea of the relative importance of different pathologic processes. Kicer⁸, in a study of 68 cases found the empyema was dental disease in 65 per cent. F. Berger¹⁵, Ingals¹⁶, Wm. Carr¹⁷, and Geo. W. Major¹⁸ attribute a majority of these cases to a dental origin.

R. C. Myles¹⁹ and C. W. Richardson²⁰ found the teeth and the nose equally responsible. Lennox Browne²¹ found dental caries seldom the cause of acute sinusitis and less often the cause of chronic empyema than was formerly believed. Bosworth²² inclines to a similar view, while at the same time taking exception to Zuckerland's²³ theory that most empyemas were due to an extension of the inflammatory process from the nares. As learning on the relation between diseased teeth and empyemas, the observations of E. S. Talbot⁵ are interesting but not conclusive as to the proportion of empyemas caused by dental disease. In 6,000 antra he found 1,274 abscessed molars, of which 76, or 6 per cent., extended into and discharged into the antrum. Of 384 pulpless teeth, 4 were accompanied by empyema.

The Ostium Maxillare.—The antrum is no less vulnerable from the direction of the ostium maxillare. From the relation between the ostium and the infundibulum above described it is evident that in many cases the antrum receives the drainage from the frontal sinus and the anterior ethmoidal cells. When that secretion happens to be purulent or loaded with pathogenic bacteria, autoinfection ensues. The antrum is subject in short to all the pathologic processes affecting the nasal mucous membrane, though Bosworth²⁰ is undoubtedly correct in the statement that there is rarely direct extension of diseased conditions from the nares into the antrum. Possibly atrophic rhinitis might be considered an exception.

Necrosis in the middle meatus may cause empyema either by direct infection or by obstruction to the ostium.

The principal nasal factor in empyema is doubtless obstruction of the ostium whether that be due to acute rhinitis, hypertrophic rhinitis, influenza, septal or turbinal deformity, polypi or other tumors, foreign bodies, including tampons or traumatism, including cauterization and other operations. Of constitutional causes may be mentioned the exanthems, erysipelas, mineral poisons, syphilis and tuberculosis. Major¹⁸, Watson²⁴, Ingals²⁵ recognized that polypi often caused empyema, but did not consider them the principal cause, as did Bosworth²⁶. H. I. Jones²⁷ found that epidemic influenza was followed by a large increase in the number of empyemas. Saint Hilaire²⁸ saw two cases of empyema induced by plugging the nares to control epistaxis. H. V. Würdemann described an empyema of the maxillary, ethmoid and sphenoidal sinuses with general septicemia following an attempted removal of the inferior turbinate. Henry L. Wagner²⁹ treated a case of seropurulent sinusitis of three years' duration due to lead poisoning.

Pathology.—Without attempting to consider all the pathologic conditions that may be encountered in the antrum it will be sufficient for the present to divide the subject as follows: 1. Acute catarrhal sinusitis, *a*, with patent ostium, *b*, with closed ostium. 2. Subacute sinusitis (*do*). 3. Chronic sinusitis (*do*). The chronic form has been further classified by Lennox Browne³⁰ as 1, catarrhal or mucous; 2, serous or dropsical; 3, purulent; 4, cystic.

Dundas Grant³¹ and Lennox Browne³² adopted, from Lermoyez, the following classification of the signs of latent empyema that certainly leaves little to be desired:

Presumptive: Unilateral discharge, intermittent discharge, infraorbital pain, subjective fetor, upper molar caries, pus in middle meatus, mucous polypi, lateral swelling of cheek.

Probable: Return of discharge on bending forward or to opposite side, opacity on transillumination.

Certain: Puncture and transfusion, puncture and irrigation, puncture and aspiration—1, inferior meatus; 2, alveolus; 3, canine fossa; 4, middle meatus—catheterization, inflation, irrigation.

ACUTE CATARRHAL SINUSITIS WITH PATENT OSTIUM.

Symptoms.—This condition usually develops during the course of an acute rhinitis or more especially in connection with an acute exacerbation of a chronic or hypertrophic rhinitis. The subjective symptoms are discharge, mucous at first, which changes rapidly into a thin canary-colored purulent fluid, often excessive in amount, that runs freely from the nostril or passes into the nasopharynx. The patient often experiences an unpleasant odor that is not apparent to others. The discharge in many cases continues free for a week or more, then diminishes and ceases in from two to three weeks. Pain is not marked but there is usually a sensation of slight pressure over the region of the antrum and some tenderness on pressure over the cheek and brow. There is malaise, slight fever and loss of appetite, sometimes constipation and insomnia—from the annoyance due to the excessive discharge. On inspection the discharge can be seen in the middle meatus or dripping from the middle of the outer border of the middle turbinate. There is usually some hypertrophy or more often an intumescent condition of the turbinates. The diagnosis is easily made and the prognosis favorable as indicated above. It is rarely continued as a chronic disease.

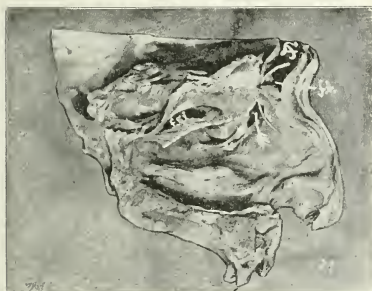
Treatment.—The patency of the ostium should be carefully maintained by applications of cocaine made by the physician, or a small amount of powdered sugar of milk containing 4 per cent. of cocaine may be intrusted to

the patient with directions to insufflate a few grains of the powder three times a day if the nose is stopped. Ingals³⁵ formula, as follows, is an excellent preparation for this purpose:

Sodii bicarb.	gr. i	065
Sodii biborate.	gr. i	065
Mag. carb. levis.	gr. iii	20
Sacch. lact. q. s. ad.	gr. c	50
Cocain mur.	gr. iv	26
M. ft. pulv.		

Mild antiseptic douches followed by oily sprays will add much to the patient's comfort. In some cases the swelling of the tissues is reduced for several hours by the application of a solution of adrenals. In other cases I have used it without effect. To reduce the engorgement of the membranes I would recommend a trial of the injection of hot air into the nares, as used by E. L. Vansant³⁴ for the relief of frontal headache, as he had previously³⁵ applied it to the ear in the dry treatment of otorrhea. Internally tonic doses of nux and quinin are indicated, and usually the discharge is favorably affected by the administration of belladonna and camphor.

Plate 37.—Reproduced from "Annals of Surgery," by courtesy of Dr. H. A. Lothrop, Boston.



Left nasal fossa, external wall, turbinate bone removed. Probe from turbinate fossa to frontal sinus. Arrow is lost in infundibulum under septum between bulla ethmoidalis and uncinate process. Lower portion of hiatus semilunaris obstructed by a small polyp (p) which hangs from the ethmoid bulla (B).
f.a. Fissura ethmoidalis inferior. P, Frontal sinus. f.b. Frontal bulla.

ACUTE CATARRHAL SINUSITIS WITH OSTIUM CLOSED.

When the catarrhal inflammation of the antral mucous membrane is excessive and swelling of the soft tissues about the orifice impedes the free exit of secretions, there is an immediate change in the symptoms. With closure of the orifice there is absorption of air and usually rapid increase and decomposition of the secretions. Halasz³⁰ describes a mild serous form with occasional closure of the ostium. Frohann³⁷ also described a similar condition characterized by pain on pressure over the antrum and toothache occurring in sound teeth early in the morning without constitutional disturbance. The typical case presents a rapid aggravation of symptoms. Pressure on the walls of the antrum increases. Pain becomes the prominent symptom. Usually there is supraorbital pain, and intense neuralgia of any or all the branches of the trigeminus may follow. The tenderness on pressure over the antrum becomes more pronounced, and the sharp neuralgic pain may be varied by the sensation of a red-hot wire along the course of the nerve. The pain varies

in intensity, but there is an almost constant throbbing with frightful paroxysms. There is tenderness of the molars on percussion, even when sound. Redness and swelling of the cheek are rarely if ever present when the inflammation is confined to the interior of the antrum. On inspection the nares may be free from excessive discharge, but the soft tissues will be found swollen and there may usually be found some further cause of obstruction, as deflection or enchondroma of the septum or polypi. Howard A. Lothrop's³⁸ plate number 37 shows a very small polyp blocking the lower part of the hiatus.

Diagnosis.—As pain is such a prominent symptom and often involving the dental nerves, with no discharge to draw attention to the sinus, the condition of the teeth at once demands our attention. Tapping the upper teeth with a steel instrument will determine the probability of the antrum being filled by the lack of resonance³⁹. If pulpless molars or bicuspidis are present, the root canals should be opened. If a palatal root abscess is found, the canal should be enlarged for drainage and treated antiseptically. If drainage is insufficient, or the symptoms too urgent to permit an attempt to save the tooth, it should be extracted and a free opening made into the antrum, the thin plate of bone being probably carious but not allowing sufficient drainage. If, on the other hand, the teeth are sound, we may resort to transillumination of the antrum, for, whatever may be said as to the fallibility of this measure, it is a diagnostic resource of the highest value in this condition. It must be remembered, however, that abnormal thickness of the bone walls of the antrum will make a shadow and that the inflammatory thickening of the lining membrane will maintain opacity for some time after the fluid products of inflammation are removed.

Scheppegrell⁴⁰ has epitomized the indications obtained by different authors as follow: 1. Opacity of cheek, Voltolini—Heryng. 2. Opacity of pupil, Davidson. 3. Absence of luminous sensation, Garel. 4. Lamp under maxillary sinus, not nasal fossa, Ruault. 5. Opacity of nasal wall observed by rhinoscopy, Robertson.

In a case of acute sinusitis, at least in which the disease of the teeth has been eliminated and transillumination gives positive evidence of opacity as shown in Myles' excellent plate⁴¹, I should feel that the diagnosis was quite certain. To confirm the diagnosis and at the same time to relieve the condition an effort should now be made by application of cocain solution to so contract and anesthetize the membrane about the hiatus that probing the ostium may be practiced. To facilitate this procedure it may be necessary to remove polypi about the hiatus. Continental operators⁴² often resect the anterior part of the middle turbinate to gain additional space for passing the probe. Our patients do not often consent to such an operation for our convenience. If probing is practicable, the antrum may be irrigated through the opening or hydrogen peroxid may be injected, a method attributed by Lennox Browne⁴² to his namesake, our distinguished confrere. Keeping the ostium open and irrigating with mild antiseptic solutions ought within a few weeks to produce a cure in the case of simple catarrhal inflammation described. I do not describe the subacute form as being merely a transitional stage. If the symptoms continue over six weeks, we may consider the case has assumed the characteristics of chronic empyema. Probably a large majority of cases never pass through the acute stage above described, but are so mild from the beginning that they are never di-

agnosed unless an acute exacerbation intervenes, especially when occurring with polypi or other conditions that maintain discharge. As we found acute catarrhal sinusitis due usually to acute infection or the result of acute rhinitis, the chronic form is usually associated with some of the more chronic nasal diseases mentioned under etiology. The symptoms of chronic empyema are marked by variability rather than by intensity, being often quiescent for long periods. The periods of increased discharge have often been diagnosed as recurring influenza—Lennox Browne.⁴³ An offensive odor may be the only symptom, as in Bronner's case. Long-continued suppuration with pus passing into the stomach is frequently the cause of serious impairment of the health either through dyspepsia and anemia or through sepsis from absorption; if, then, a few weeks' treatment by irrigating the antrum through the ostium fails to bring about a cessation of discharge, the question of surgical interference must be decided. There are many who puncture the antrum as a routine means of diagnosis. Charles Lucius⁴⁵ says puncture only is pathognomonic. C. H. Knight⁴⁶ warns against exploratory puncture and relates a case in which puncture on three days in succession only revealed pus on the third day, the inference being that if pus was present at first the puncture was inefficient, while if it was not present the puncture probably infected the antrum. Puncture may be performed either in the middle or lower meatus. The middle meatus below and posterior to the hiatus offers the least resistance as the bony wall is very thin or often lacking at that point, but it is much less accessible in the average case. Geo. E. Shambaugh⁴⁷ describes the method of puncturing with a curved needle directed downward and outward to avoid wounding the orbit. For drainage and after-treatment by irrigation the lower meatus offers obvious advantages. Lichtwitz⁴⁸ or Krause's trocar or drills of various kinds may be used, a moderate opening being sufficient for the diagnosis of the presence of fluid. Cohen's drill with canula is one of the best devices. Zeim⁴⁹ prefers Cooper's opening through the palatal border of the alveolus followed by irrigation by a powerful force-pump.

When at last the diagnosis of empyema is definitely established, either by opening the sinus wall or through the alveolus as above described, the route chosen should be enlarged to an average diameter of about one-quarter inch. In the alveolus an Ingals'⁵⁰ double-flanged soft-rubber tube of suitable length may be introduced; or a tube of hard rubber or gold may be fitted and retained if necessary, by attachment to the adjacent teeth. Various devices have been resorted to to prevent food entering the antrum, an occurrence that I have found occurs very infrequently with a tube of moderate size. Mulhall⁵¹ and Meyes⁵² devised tubes with lids or hinges. The danger of improperly constructed tubes slipping completely into the antrum is by no means theoretic, as Cheate, Dundas Grant and Wm. Hill⁵³ have recently reported cases. Wat-on Williams (*ibid*) reported a peg lost in a similar manner but was fortunate enough to recover it via the ostium maxillare without operation. When opening is made in the inferior meatus, a soft-rubber tube may be introduced to prevent too rapid contraction and to facilitate irrigation. Certain cases will recover under irrigation with antiseptics and stimulating applications. Dr. Chas. J. Whalen personally reports peculiarly good results from injections of a solution of 1 to 4 per cent. formaldehyde in water. Few patients like irrigation well enough to continue its use after all discharge ceases, but Law⁵⁴ reports a case in which unnecessary irrigation was practiced daily for three years.

There remains for our consideration a class of cases still large, that experience only temporary relief from the measures advocated; and they will try our patience to the utmost unless we clearly recognize the fact that such degenerative changes in the lining membrane of the antrum or such new growths have developed that a radical operation is necessary. I dismiss without consideration the use of the curette through the small opening hitherto described. Myles⁵⁵ prefers opening the lower anterior border of the malar ridge, sacrificing a tooth. DeRoaldes and King⁵⁴ advocate the Luc operation, cutting away the anterior bone wall of the antrum, perforating the nasal wall and introducing a funnel-shaped soft-rubber tube from the antrum into the lower meatus, curetting all diseased tissues and closing the soft tissues over the defect in the anterior wall. N. Senn⁵⁵ makes a temporary osteoplastic resection of the anterior wall, removes the cause of the suppuration, passes a fenestrated drainage-tube into the naris either through the ostium or an opening made into the middle inferior meatus and projecting into the mouth through a defect cut in the bone flap. Howard A. Lothrop⁵⁶, in a case of combined suppuration of all the accessory cavities of one side, for which all the teeth had been removed and the canine and alveolar operation had been performed, cut away all the naso-antral wall beneath the lower turbinate.

I will describe only two cases of antrum disease, one a personal experience of mild acute catarrhal sinusitis, the other a typical severe inflammation due to a root abscess and followed by recurring frontal headaches. The personal experience occurred in the spring of 1891. As to the etiology, I had been the subject of hypertrophic rhinitis for several years and rarely passed through a winter without one or more severe coryzas with much swelling of the turbinates. On this occasion, at the beginning of the attack I had no reason to anticipate more than the usual coryza. After a few days, however, the discharge became much freer from the left nostril and was accompanied by a heavy feeling in the left antrum, with some tenderness on pressure. For about a week the discharge was thin, canary-colored and excessive in amount; so excessive in fact that the only way I could sleep was lying on the right side with my head on the edge of the bed with a receptacle beneath to catch the constant drip from the nostril. I noticed a peculiar musty or mousy odor which my companions said they could not detect. From the beginning of the coryza to the cessation of discharge was a period of nearly three weeks. Treatment was limited to mild antiseptic douches and, I think, a mild oily spray. Later I had linear cauterization performed on the hypertrophied turbinate on four occasions, and have been almost entirely free from acute rhinitis, though in wet, cold weather I experience an increase of secretion and dropping into the throat.

The other patient was a young married woman who began having severe pain in the upper teeth April 14, 1895. Her general health was poor, due principally to being five months pregnant. Her teeth, never good, showed a tendency to rapid decay. The dentist removed an old filling from the right upper first molar and made the usual applications to kill the root nerve, without mitigating the pain, which grew more intense. She finally consulted another dentist, who advised extraction, which was performed by Dr. Slonaker under gas anesthesia on April 25. The ache in the side of the face continued, with severe neuralgic pains shooting through the branches of the trigeminal and the facial. May 5, Dr. C. L. Wright removed a filling from the second molar and

found pus in the pulp cavity. May 7 I examined the antrum, at Hinsdale. Finding that my chemical battery would not heat Dr. Ingals' electric lamp, I substituted an ordinary electrode of coiled No. 20 platinum wire protected by a two-dram vial. The right antrum was opaque. The turbinates were moderately swollen but no unusual discharge was detected in the nose. Dr. Slonaker thereupon extracted the second molar under gas, and enlarged the opening into the antrum. Three or four drams of thick pus escaped. The antrum was irrigated through the maxillary opening, the irrigating fluid passing into the naris without the slightest difficulty. Diluted peroxid of hydrogen and a saturated solution of boric acid were used through a bent Eustachian catheter twice a day for two weeks. The opening then becoming contracted, I advised enlarging the opening and introducing a tube. As further operative interference was absolutely refused I devised a tube from an ordinary hard-rubber connector to fit the opening in the bone. It was 3 mm. in diameter and 25 mm. long, with a round collar at the lower end. This allowed free drainage without permitting food to pass into the antrum except on rare occasions. For a few weeks longer the antrum was irrigated daily until the discharge ceased. At no time was there any redness or swelling of the cheek.

The patient has worn the tube to the present time, fearing a repetition of her experience with a closed antrum. She has been subject to occasional severe frontal headaches lasting from one to three days usually following an exposure to cold air. Sleeping in a cold room is sure to be followed by a frontal headache. The lower and middle turbinates of both sides, and submucous swellings on the septum, have been repeatedly cauterized without materially modifying the character or frequency of the headaches. And in spite of the cauterization the turbinates remained puffy. On looking about for an apparatus to apply hot air, as recommended by Vansant²⁴ I saw a machinist's oil-can with a long nozzle which can be heated without injury over a Bunsen burner or spirit lamp. The hard-rubber tube and nasal tip enables the patient to inhale air as hot as can be borne. The entry of cold air is regulated by inserting a perforated cork in the inlet. The heat can be retained longer by placing pieces of electric light carbon in the can. The patient has only recently used this apparatus but found the hot air very grateful. The pain was relieved in a short time instead of persisting two or three days as formerly.

BIBLIOGRAPHY.

1. LENNOX BROWNE: The Throat and Nose and their Diseases, 5th ed., 1869, p. 849.
2. *Ibid.*, p. 856.
3. FLEETCHER: International Dental Journal, 1907.
4. Annals of Surgery, Nov., 1898; Feb., 1899, plates 34-41.
5. Journal Am. Med. Ass'n, Nov. 24, 1894.
6. Journal of Laryngology, Rhinology and Otolaryngology, Dec. 1898.
7. Zuckerkandl: Normal und Pathologische Anatomie der Nasenhöhle, 1894.
8. The Laryngoscope, Feb., 1899.
9. British Medical Journal, Sept. 25, 1894.
10. Australian Medical Recorder, Dec. 20, 1897.
11. Annales des maladies de l'Oreille, Sept., 1893.
12. The Practitioner, Aug., 1898.
13. Manchester Med. Woch., No. 45, 1898.
14. Lennox Browne: *Loc. cit.*, p. 859.
15. Revue hebdomadaire de Laryngologie, May 14, 1898.
16. E. Fletcher Ingals: Diseases of the Chest, Throat and Nose, 1894, p. 579.
17. Journal Am. Med. Ass'n, Dec. 21, 1880.
18. Transactions Am. Laryngological Ass'n, 1893.
19. American Text-Book of Diseases of the Eye, Ear, Nose and Throat, 1889, p. 970.
20. Virginia Medical Semi-Monthly, Dec. 24, 1894.
21. Lennox Browne: *Loc. cit.*, p. 860.
22. Bosworth: Diseases of the Nose and Throat, 1889, Vol. 1, p. 467.
23. Zuckerkandl: Normal und Pathologische Anatomie der Nasenhöhle, 1882, p. 137.
24. Watson: Diseases of the Nose, 1875, p. 156.
25. E. Fletcher Ingals: Diseases of the Chest, Throat and Nose, p. 580.

26. Bosworth: Diseases of the Nose and Throat, 1889, Vol. 1, p. 468.
27. Pacific Medical-Dental Gazette, July, 1898.
28. Journal of Laryngology, Rhinology and Otolaryngology, Aug., 1898.
29. New York Medical Journal, Aug. 15, 1896.
30. Lennox Browne: *loc. cit.*, p. 865.
31. Journal of Laryngology, Rhinology and Otolaryngology, Feb., 1899.
32. Lennox Browne: *loc. cit.*, p. 865.
33. E. Fletcher Ingals: *loc. cit.*, p. 657.
34. Philadelphia Medical Journal, May 7, 1898.
35. Journal Amer. Med. Ass'n, Oct. 2, 1897.
36. Wiener Klin. Rundschau, No. 46, 1898.
37. Therapeutische Monatschrift, May, 1898.
38. Annals of Surgery, Nov. 1898, Feb., 1899, plate 37.
39. The Laryngoscope, March, 1898.
40. Annals of Ophthalmology, Rhinology and Otolaryngology, May, 1897.
41. American Text-Book of Dis. of Eye, Ear, Nose and Throat, p. 970.
42. Lennox Browne: *loc. cit.*, p. 872.
43. *Ibid.*, p. 861.
44. The Lancet, July 17, 1897.
45. Lucius: Thèse de Paris, 1898.
46. The Laryngoscope, July, 1898.
47. Chicago Medical Recorder, vol. xiv—reprint.
48. Journal of Laryngology, Rhinology and Otolaryngology, Oct.-Dec., 1895.
49. E. Fletcher Ingals: *loc. cit.*, p. 583.
50. The Laryngoscope, Nov., 1898.
51. Monatschrift für Ohrenheilkunde, Jan., 1898.
52. Semaine Médicale, April 26, 1895.
53. American Text-Book of Dis. of Eye, Ear, Nose and Throat, p. 974.
54. New Orleans Med. and Surg. Journal, Dec., 1898.
55. Pacific Medical Journal, Dec., 1897.
56. Annals of Surgery, Nov. 1898, p. 206.

DISCUSSION.

DR. W. L. BALLENGER.—There are two points in Dr. Ohls' paper to which I wish to refer: the use of a cautery electrode protected by a two-dram vial as a transillumination lamp; and the liability of improperly selected or applied drainage-tubes to enter the antral cavity. For about four years it has been my custom to use an electrode in the manner described by the essayist for transillumination purposes. I read somewhere of the method and adopted it, with very satisfactory results. I have also used the Heryng lamp and find it adapted to a much greater variety of uses than the electrode lamp.

About two years ago Mrs. B., wife of Dr. B., of a suburban city, consulted me concerning a chronic empyema of the antrum of Highmore. She had been previously treated by her husband and a local rhinologist, who opened the antrum between the first molar and bicuspid. Not having a suitable antral tube a piece of black soft-rubber tubing was used instead. A few weeks later the tube disappeared and it became a question of some importance as to whether the tube had entered the antrum or had been discharged externally. At this stage I was consulted. I attempted to explore the antrum by means of probes and solutions, but did not arrive at a definite result. A few weeks later she consulted me again, and as the discharge had abated considerably, we decided not to enlarge the antral opening as planned, but to continue the treatment by frequent irrigations. Three months later I received a letter from her stating that during a violent attack of sneezing the long lost drainage-tube was expelled through her nose. It had been carried in the antrum for nearly a year. I subsequently did a radical operation, removing the anterior wall of the antrum, and found the cavity filled with edematous granulation tissue. This was removed with a curette and the cavity packed with gauze moistened with the compound tincture of benzoin. I may say, briefly, that the case went on to complete recovery. As I expect to report the case more fully at another time I will not give further details now.

DR. GEO. E. SHAMBAUGH.—I wish to say a word about the use of the term "infundibulum," which we find used in a variety of senses. Sometimes it is applied to the anterior extremity of the hiatus semilunaris, sometimes to the nasal extremity of the nasofrontal duct, which may or may not open into the hiatus semilunaris. Zuckerkandl, who is a good authority on the anatomy of the nose, uses the term "hiatus semilunaris" as applying to the mouth of a depression several millimeters deep which runs its entire length and which he calls the infundibulum. It is in the depth of the infundibulum, therefore, near its posterior end, that the ostium maxillare is found, while the anterior extremity of the infundibulum as a rule opens into the ostium frontalis, which leads into the frontal sinus. The Anatomical Nomenclature Commission, in 1895, gave the term "infundibulum ethmoidalis" to the entire space between the uniform process of the ethmoid and the bulla ethmoidalis.

DR. J. HOLINGER.—Empyema of Highmore's antrum was

considered of rather infrequent occurrence about ten or fifteen years ago. The oftener we look for it, the oftener we find it. At first only the typical forms with large accumulations of pus were diagnosed; catarrhal forms have been recognized only lately. I am thankful to Dr. Ohls, because I learned things that were new to me. I would like to ask whether the etiologic factor, caries of the teeth, is not pushed too much in the foreground? This is the reason why I put this question: Last summer I treated a boy of 15 years whose empyema recurred several times. At each recurrence one or several teeth were extracted, so that he had not one tooth in his upper jaw. Even at the side where he had no empyema not a tooth was left. He was cured after Dr. Oswald and I chiseled away bone plates at the lower and anterior angle. I saw him repeatedly last winter and spring; no recurrence can be found.

Dr. O. T. FREER.—In cases where the antrum is divided by septa, into separate compartments, the drill or trocar entering the antrum through the alveolar process or beneath the inferior turbinate body, may penetrate a compartment containing air, while the one filled with pus may not be entered at all. The great pain felt by patients when the alveolar process is being drilled through amounts to acute agony. Dr. Ohls states that Continental operators remove the anterior half of the middle turbinate body in order to gain access to the natural opening of the antrum for the purpose of exploration. From my memory of the literature on the subject of empyema of the accessory sinuses, the middle turbinate is resected chiefly in order to gain access to the frontal sinus, as when the hiatus semilunaris is thus exposed we get an easier approach to the natural opening of the frontal sinus where it enters the infundibulum.

A. M. CORWIN.—My personal experience with empyema of the antrum includes eight or ten cases. In only one of these were polypi present, and I could not decide whether these were the result or the cause of purulent process. Whatever the relation between these conditions, in some cases nasal polypi do not seem to be a frequent cause. In the large number of cases of polypi that occur, how seldom do we find antral disease. One of my cases of some months' duration, in a medical student, was of interest because I succeeded in curing it entirely by making an opening with a small trephine, above the alveolar process in the canine fossa, through which the cavity was washed by mild antiseptics, an ordinary Eustachian catheter being passed. In another case, a dentist had removed a tooth and put in a gold tube and treated the patient for months without recognizing the specific process which was evidently present, as manifested by a gumma of the hard palate and nasal ulceration on the corresponding side. There was profuse purulent discharge from the antrum through the normal opening. The removal of the tube and the granulation which partially filled it and surrounded its upper end, and the simple washing out of the cavity and the exhibition of iodid brought about prompt recovery.

Dr. JOHN A. ROMSON.—I did not notice that Dr. Ohls, gave as one of the causes of empyema of the antrum, malignant disease. I think it should be included, as empyema is often one of the forerunners of carcinoma of the antrum, as was well illustrated in a subject who came under my observation in February. Mr. S., aged 70, consulted me for the purpose of having a diagnosis. He said he had noticed, two months previously, pain in his eyes, more severe in the right eye, which increased in severity day by day. He had been subject to nasal catarrh for some time before, the amount of secretion being great, and the nasal passages closing toward night, the right being worse than the left. For five weeks previous to consulting me the right eye had been congested, the right maxillary bone tender, and the soft tissue of the right cheek swollen. He had been under the constant treatment of a homeopathic physician for ophthalmia, but obtaining no relief, had decided to make a change. An examination revealed the presence of empyema of the antrum, and the signs also pointed quite conclusively to malignant disease being the primary cause. Dr. Senn operated by opening and draining the antrum on February 28. There was great relief from the painful symptoms, but notwithstanding a thorough euretteage of the cavity, a second operation was necessary on March 11, when a portion of the maxillary bone and the carcinomatous mass were removed. The patient was discharged from the hospital on April 10. Some years ago I saw a case of empyema the result of carcinoma of the antrum, in which the cancer extended to the eye, and there was secondary carcinoma of the liver with ascites. The eye was enucleated and the antrum drained, but the patient later succumbed to systemic infection.

INTESTINAL ANASTOMOSIS.*

BY J. HENRY BARBAT, M.D.

SAN FRANCISCO, CAL.

The question as to which method of intestinal anastomosis is the best is still unsettled; each deviser of a new method claiming his method or device to be superior to all others. Not having any method or device of my own I have endeavored to find out which was the most feasible for the use of the average surgeon; and also to determine which gave the best results. A method which requires extraordinary skill and a large amount of practice to perfect is not a feasible one for the average operator. With regard to results the case is different; we can demonstrate the difference between the results attained by the various methods by removing the specimens and subjecting them to microscopic examination. The ideal result would be the accurate apposition of the respective layers of the intestine without the interposition of any scar tissue; therefore the nearer we approach this ideal the better will be our result.

I have conducted a series of experiments on dogs; confining myself to circular enterorrhaphy of the small intestine; I adopted this variety of anastomosis because the results better demonstrate the value of the method used, and it is conceded that it is the most difficult to do properly, besides it is the only method which restores the bowel to its natural condition; and is the operation which should always be selected when no contraindications exist.

Before detailing my work allow me to recall to your mind the minute anatomy of the intestine. The intestinal wall consists of four coats, starting on the outside we first have the peritoneum; next to the peritoneum is the layer of longitudinal muscular fiber; on top of this and closely adherent to it we find the circular muscular layer, which is in the small intestine about three times as thick as the previous one. The next coat is the submucosa or fibrous layer and on top of this the mucosa.

These various layers each have a special significance in surgery; the peritoneum is simply a protecting coat and does not stand much strain, especially when inflamed, but is of especial value after injuries by pouring out lymph which prevents leakage and covers over the exposed surfaces. The muscular coats are of no consequence from a surgical standpoint as their function is simply to move the intestinal contents along, and a failure to get union would only cause a break in the peristaltic wave, which would not impair the integrity of the bowel. Muscle tissue after being cut will never repair in such a manner that the muscle cells will cross over the point of division; there will always be a layer of scar tissue between the muscle cells at the point of union. The submucosa is the tough membrane which gives the bowel its strength; it is impervious to gas or liquid and it has been clearly demonstrated by Halsted that it is the only coat which possesses the strength necessary to support the strain of sutures in an enterorrhaphy. The mucosa is a purely functional layer and is of no importance as far as the strength of the gut is concerned.

It will thus be seen that in order to have a secure anastomosis the peritoneum and submucosa are the only coats which are essential, therefore the method which approximates these coats the earliest must of necessity be the best. Now let us see the result of the various methods immediately after the question and see which one gives the best approximation.

* Based on Experimental Research done in the Medical Department of the University of California.

A careful examination of *all* specimens obtained from suture operations showed the peritoneal coats in apposition—except at the mesenteric attachment—and the other layers in their natural relation, except at the points where the sutures had been passed. At these places the muscularis and mucosa were cut through, allowing the submucosa to come together with the intervention of the peritoneum only.

tion of the parts varies but little in any of the suture operations; we have at the point of union a double layer of intestine, with the two peritoneal surfaces in contact and the cut ends of gut projecting into the lumen of the bowel; naturally at the point of mesenteric attachment there are no peritoneal surfaces, and we find here the most accurate apposition of layers that is obtained in suture methods.



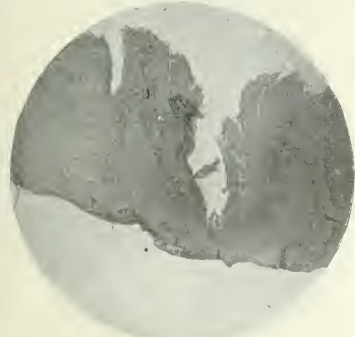
Suture—42 days.



Murphy button—65 days.

In the Murphy button specimens the muscularis and mucosa were pressed out of the way completely so that the peritoneum and submucosa were the only coats left between the jaws of the button around the whole circumference of the gut; even at the point of attachment of the mesentery the peritoneum was infolded so that there was no uncovered surface at any point. With the

This is due to the fact that the intestine is not invaginated at this point to the same extent that it is where the bowel is covered by peritoneum, and therefore there is a better chance to bring the corresponding layers in apposition at this point. After a period varying from four to six weeks we find that the mucosa begins to grow over the cut ends and thereby becomes continuous, but the



Suture—36 days.



Frank coupler—20 days.

Frank coupler the mucosa was pressed out but the muscularis was still intact. These results prove that the Murphy button places the parts in the best relative position for proper union, at the start.

By examining the specimens removed at given intervals we can watch the process of repair and determine the value of the result obtained. We find that the rela-

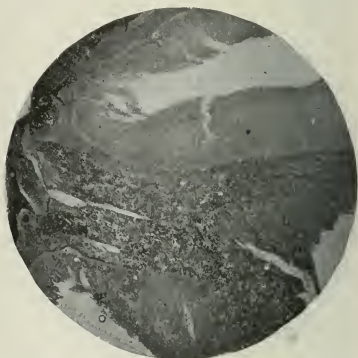
other layers maintain their normal relation except where the sutures have cut through the mucosa and muscularis; at these points we find the peritoneum continuous on the outer surface of the bowel and the submucous layers in contact. But this approximation is only found at the circumference of the intestine where the sutures have

been placed, and there therefore remains a double layer of gut projecting into the bowel with only the peritoneal surfaces in contact. If we follow these cases we will find that the connective tissue which is formed between the approximated surfaces begins to contract and, as the amount of contraction depends on the amount of scar tissue it necessarily follows that with the two comparatively wide surfaces which we get in

nothing but the peritoneum and submucosa; the mucosa is lacking over the line of approximation for a variable distance, usually not more than one-twentieth of an inch, and as I stated, a regeneration begins from four to six weeks after. We find the connective tissue gradually absorbing, except at the submucous layer, allowing the closer approximation of the muscular layers, but never



Murphy button—36 days.



Suture—90 days. Showing result usually obtained by suture.

all suture anastomoses we will have considerable contraction. Moreover, the diaphragm, which is formed by the double layer of intestine, contains circular muscular fibers and we will have a continuous contraction of these fibers within the ring of the bowel. In the Murphy button cases we have a different condition of affairs; immediately after the comple-

disappearing completely or allowing the muscle cells to cross the line of union.

We therefore have in a specimen which has ceased to change, the following arrangement: the peritoneum is continuous and the blood-vessels and lymphatics are seen to cross over from one side to the other; the two muscular layers are in line and in close contact, a layer of con-



Murphy button—57 days.



Murphy button—36 days.

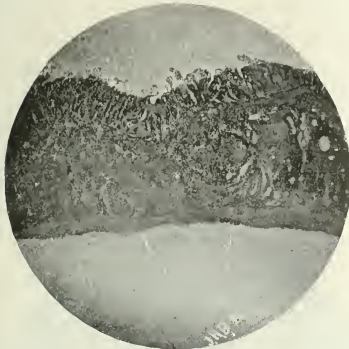
tion of the operation we have the peritoneum and submucosa only at the point of union, i. e., in the bite of the button.

The ends of the intestine, which are within the interior of the button, are held by these layers until the pressure necrosis which takes place liberates the button. After the button has passed, we still have at the point of union

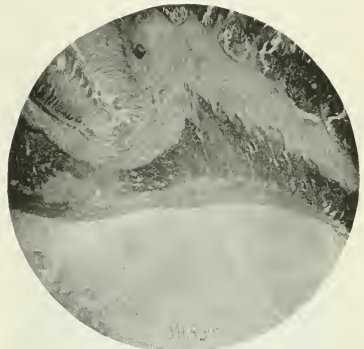
nective tissue preventing the cells from passing across; the submucosa forms a continuous layer, the direction of the fibers being parallel with those on each side; there is usually a slight thickening at the point of union. The mucosa is completely regenerated, except its muscularis which, like the other, comes in close contact without being continuous. The results obtained with the Frank

coupler are similar to those with the Murphy button. I was unable to obtain any of Chaput's buttons and can not therefore judge of its comparative value. The perfection of the result depends to a considerable extent on the accuracy of the technic, and the character of the intestine that is being operated on, a thin gut giving a very different result from one that is thick or slightly inflamed; this holds good no matter which method of anastomosis is used.

of the gut till it met the end of the first stitch. The ends are tied, being careful that all knots are within the lumen of the bowel; this accurately approximates the cut edges layer to layer. A superficial stitch is then placed, keeping as close to the line of union as feasible, so as to produce as little invagination as possible; it is essential that the sutures be very accurately placed or we will have leaking.



Murphy button—65 days.



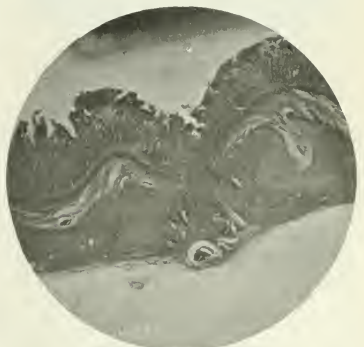
Murphy button—36 days.

With regard to technic, I have been able by suture approximation to obtain results which equalled those obtained by any other method; but this requires considerable practice and there are few men who have the time or opportunity to perfect themselves in this line of work. The method which yielded the best result was as follows: a very fine catgut suture was inserted, beginning at the

This method is not as safe as those which turn in a wider portion of bowel, but anatomically it gives the best result of any of the suture methods and equals in some instances that obtained by the use of the Murphy button. The various methods which necessitate the use of cylinders of various substances from potato to rubber, or forceps to hold the cut ends in position during the opera-



Murphy button—47 days.



point of attachment of the mesentery, and passing through all the coats of the bowel, keeping as close to the cut edge as possible. The suture was passed across from one cut edge to the other until it reached a point opposite the beginning; a second suture was begun at the same point as the first and continued around on the other side

tion, do not yield any better results, in fact the results are not as good as may be obtained without mechanical assistance. All these devices entail the invagination of too much intestine and therefore there will be more contraction than if we use some other method which does away with this feature.

The technic to be observed in introducing the Murphy button is as follows: a puckering over-stitch is introduced, beginning at a point opposite the attachment of the mesentery and continued around the cut end of the bowel and the beginning, taking a special stitch through the mesentery. This special stitch is of great importance as it draws the mesentery into the bite of the button and insures against having the uncovered space at this point. The two halves of the button, held in forceps, are introduced and the sutures tied. It is well to place the half which has the spring in last as it is more difficult to hold it in position after its introduction than the other portion. All that now remains to do is to push the two halves together, being careful that the mesentery is in line. Care must be observed in placing the suture to have it close to the cut edge of the intestine, especially if the mucosa is thickened, or it will be found impossible to pull the whole thickness of the bowel into the bite of the button.

With regard to the dangers which have been claimed by the opponents of the Murphy button, I have analyzed them all and find that there are very few real ones. The

I was explaining to the gentlemen who were assisting me the necessity of always providing sufficient arterial supply to the cut ends, even if it should be necessary to remove an inch or two more of the bowel, and at the same time committed the error I was warning them against, showing how watchful we should be in this respect.

One thing which has caused many accidents is a defective button, and unfortunately we find the market flooded with poorly constructed buttons. Not all operators are capable of judging whether the button they are about to use is mechanically perfect or not. There are very few buttons in the market which conform in every particular to the requirements we expect to find in a perfectly constructed article. The closed button should be perfectly smooth all over and the drainage holes should not have sharp edges; the largest diameter should be where the two halves came together; the spring must be sufficiently strong to completely cut off the circulation of the ends of the bowel, which are within the button, or else necrosis can not occur and the button will not be passed; this has occurred in many cases. The pressure



Suture—57 days.



Murphy button—3 days. Showing mucosa and muscularis pressed away at point of union.

majority are due to faulty technic, or faulty buttons. In some cases the two halves are not pushed together sufficiently tight to cut off the circulation or to cut through the mucous and muscular coats; in these cases the button may remain as a permanent fixture, with more or less serious effect according to its locality. In two cases which I saw, the silk ligature that was used to draw the bowel over the button was cut so long that it projected out beyond the jaws and prevented its escape; in both cases the buttons were removed and the reason of the failure clearly demonstrated; this disaster may be averted by using catgut instead of silk.

With regard to sloughing and necrosis, I have yet to see a case that was directly due to the presence of the button: in the majority of cases in which this accident has happened we will find that the operator has neglected to provide for the nutrition to the cut end of the gut by cutting on the wrong side of one of the mesenteric vessels, or by including the vessel—which is oftentimes found on the very edge—in the suture which approximates the divided mesentery. This accident happened to me in one of my cases of circular enterorrhaphy.

edges must not be too wide or necrosis will not take place as soon as it should, and a wider ring of scar tissue will be left than if the edges are narrow.

The only real danger which I can conceive is the possibility of a button getting caught at the ileocecal valve, and I believe that this is more theoretical than real, because in my experiments on dogs I was obliged, in some cases where the intestines were smaller than the button, to stretch the gut with forceps before it could be introduced. Notwithstanding this all the buttons were passed without any trouble. In a few cases it has happened that the button has fallen into the stomach after gastro-enterostomy has been performed; this can easily be obviated by having the half of the button which goes in the stomach of a little smaller diameter than the other, when it will be impossible to have the button go the wrong way. I have utilized this method by taking two buttons of different sizes and using the male half of one and the female half of the other; and in two cases of gastro-enterostomy in which I used these altered buttons, I found them to work perfectly.

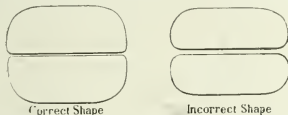
The Frank coupler gives a result which approaches

closely to that of the Murphy button, and the idea of having absorbable ends is a good one; but we have to place our entire dependence on a piece of rubber tubing, the strength and elasticity of which we are not capable of judging, and which varies with age. The decalcified bone ends are sometimes found warped out of shape and cannot then approximate as accurately as they should. In one of my cases in which I used the coupler there was slight leakage at the point of mesenteric junction, which caused a localized abscess to form; fortunately, however, it did not cause death.

The cause of the leakage was insufficient pressure on the folded-in mesentery, just after the completion of the operation; the exudation of lymph, which occurred shortly after, evidently closed the interstices between the mesenteric layers, because the line of union was found to be perfect except at that point, and the infectious material was found completely encapsulated. It will be remembered that the special stitch which is taken through the mesentery draws in an extra fold of peritoneum, increasing the thickness of the gut at that point, and in the case of the coupler making it a source of danger at that spot, as the rubber may not be sufficiently strong to press the layers tight enough to prevent leakage.

With regard to the apposition of the coats of the bowel, the Frank coupler gives as good results as any other method, but the device as made at present is not as safe as the Murphy button.

One point that was noted in my work was that fewer adhesions were found at the line of union in the button, than in the suture cases; this is due to the fact that in



all suture operations the stitches pass through the outer coats of the intestine and there is always some slight oozing of blood at the stitch holes, which increases the tendency to adhesion. On the contrary, in the button cases there is never any bleeding at the line of union and no exposure of sutures to tend toward the production of adhesions.

One thing to be observed in using mechanical devices is to use the largest size which can be easily introduced into the bowel, as it must necessarily follow that the diameter of the opening left by the button will be slightly smaller than the button itself, and if we use any device whose diameter is considerably less than that of the intestine we are sure to have contraction follow.

The conclusions which I have deduced from my experiments are as follows:

1. It is possible to make a safe and satisfactory end-to-end anastomosis.
2. With practice, a surgeon can, with nothing but a needle and thread, sew a divided bowel together and obtain a result which will almost equal that obtained by the use of the Murphy button.
3. The result obtained by the Murphy button is superior to that of any suture method yet devised.
4. The Murphy button and Frank coupler give the same anatomic result.
5. Contraction following end-to-end anastomosis is usually due to faulty technic.
6. The Murphy button is much safer and more reliable than the Frank coupler.

7. A perfect Murphy button, properly introduced, is the quickest, safest, and most reliable means of obtaining an anastomosis between any two viscera.

8. All devices which are used to support the gut in suture operations are unnecessary, and as good, if not better results, may be obtained without them.

My thanks are due to Drs. F. B. Carpenter, George H. Evans and Wm. Barbat for their able assistance in the work on which the paper is based.

MONSTROSITY OR DOUBLE FETUS.

BY J. E. BENTON, M.D.

CENTRAL CITY, MEB.

Myself and father, Dr. E. A. Benton, were called in consultation by Dr. W. N. Hunt of this city at 1 p.m., June 15, 1899, in the case of Mrs. D., a multipara in her fourth confinement. She had been in labor for about twelve hours with a vertex presentation in the first position, and strong labor pains for several hours after complete dilation of the os had failed to advance the head beyond the lower third of the pelvis. From



external examination and the history of the case, twin pregnancy was diagnosed, and under chloroform, forceps were applied and the head brought down with considerable difficulty through the external parts; but no more progress could be made toward delivery. We then concluded we had to deal with some kind of monstrosity. We amputated the head and tried to turn or bring it in position to deliver, but failed. We then brought down arms and shoulder and amputated all, but failed to deliver. We commenced hasty preparations for a



Cesarean section, but patient began sinking rapidly and died in less than an hour, although every effort was made to sustain the heart action. There was no hemorrhage or assignable cause for death other than shock. Post-mortem was made two hours after death and the monstrosity removed; amputated parts were stitched on. The accompanying photographs show the peculiar formation as much as possible, and it explains nearly all. The sex could not be determined. The caudal appendage so plainly seen in back view is undoubtedly a rudimentary development of a leg, it contained a bone and joint, evidently a knee-joint. The weight of the monstrosity was twelve pounds.

ANASTOMOSIS OF BLADDER TO RECTUM.

EXPERIMENTAL RESEARCH THEREON: A PRELIMINARY REPORT.

BY JACOB FRANK, M. D.

Surgeon to the St. Elizabeth and German Hospitals; Consulting Surgeon to the Jewish Orphan Home and Home for Aged Jews, Chicago; Corresponding Member of the Sociedad Médica "Pedro Escobedo"; Member of the Pan-American Congress, International Medical Congress, American Medical Association, etc. CHICAGO.

In the spring of 1898 a series of experiments on the unilateral and bilateral implantation of the severed ureters into the rectum was conducted after a special method of my own, with the object of relieving many of the grave pathologic conditions arising in the bladder, that are aggravated by the presence of urine, or in congenital malformations, as exstrophy, as well as the avoidance of a nephrectomy for neoplasms involving the ureters, or injuries to the ureters in laparotomies. The ultimate results of these were discouraging, although the operative technic was all that could have been wished for. From the knowledge and experience gained, and keeping in mind the numerous pathologic conditions to which the bladder is heir, the plan of anastomosing the bladder to the rectum seemed feasible and was carried out on fifteen dogs, with good results. After looking over all the available literature upon the subject of exstrophy of the bladder, etc., I find no one attempting this method, and therefore I think I may claim originality for the same.

The operation consists of anastomosing the bladder to the rectum with my decalcified bone coupler, a description of which can be found in the *Medical Record*, Oct. 3, 1896, the *JOURNAL*, June 19, 1897, and in *Medicine*, January, 1897. The technic is as follows: in a male dog the incision is made in the groin, and in a bitch in the median line. Generally the bladder is found distended, and is emptied by squeezing it gently with the hand, when the urine escapes through the natural channel. The rectum is next picked up and freed of its contents, as in any intestinal operation. The bladder and the rectum are then brought forward and placed in position for anastomosis. Two or three interrupted Lembert sutures are now taken about half an inch below the lower ends of the incisions determined upon in the bladder and rectum, care being exercised in selecting them that the coupler, when it is inserted, will not encroach upon the ureteral openings in the bladder. A longitudinal incision is then made in the bladder large enough for the coupler selected, and a puckering string applied over and over the cut margin. The rectum is next opened in its long axis and a puckering string similarly applied. The suture should be taken so that the free ends lie uppermost, thus facilitating easy tying. The operator now slips the coupler into the bladder opening, at the same time gently spreading the collars apart, while an assistant makes one knot and draws down on the puckering string until the rubber tubing is felt; another knot is made and the ligature cut off short. The other half of the coupler is then slipped into the rectal opening and likewise tied and cut off. Several interrupted Lembert sutures are taken around the borders to make the work more secure. The operation is very simple and can be accomplished in ten or fifteen minutes.

Of the fifteen dogs operated upon, ten recovered and five died. Post-mortems showed no septic conditions of ureters or kidneys. In the first two experiments the technic was not thoroughly understood, and a large amount of unnecessary work was done. Several of the

dogs that recovered were killed for pathologic and bacteriologic examination. Three are still living—the longest three months—and it is my intention to keep these somewhat longer and then kill them for the further study of the effects of the operation upon the ureters, kidneys and site of anastomosis. The dogs pass three or four watery stools a day through the rectum, and the male dogs hoist their legs in the act of micturition but without accomplishing it through the penis. The animals are playful and lively after recovery, and one not knowing an operation has been performed would have no suspicion aroused.

In the first six experiments a $\frac{3}{8}$ inch coupler was used, but later in large dogs a $\frac{7}{8}$ inch, and in smaller dogs a $\frac{3}{4}$ inch coupler was inserted. The small piece of rubber tubing has never failed to pass away. Silk was used in all experiments. The following pathologic and bacteriologic reports of experiments 4 and 13 were made for me by Dr. Maximilian Herzog:

EXPERIMENT 4.—Male dog, weight 22 pounds; operated on May 6, 1899, killed May 21, 1899. At the post-mortem examination the following technic and inoculations were made: The ureters of both kidneys were ligated a short distance below their origin from the pelvis, and the kidney removed. A platinum loop previously heated was introduced through an opening—made under the usual aseptic conditions—into the pelvis of each kidney, and a blood-serum and glycerin-agar tube inoculated from each side. Of these four culture-media three remained permanently sterile. One blood-serum tube on the third day showed a moist, shiny, whitish growth which liquefied the culture soil. The growth consisted of very small bacilli, the character of which was not studied any further. They were not colon bacilli, and their appearance was probably due to contamination. At the site where the anastomosis was made the tissue appeared perfectly smooth and normal. No redness or swelling was noticeable to the naked eye. Microscopic sections made from this part, including both the bladder and rectum, were stained by various methods.

In the rectum the following conditions were noted: The intestinal and bladder walls have completely united, and blend in such a manner that the two tissues form an acute angle of about 80 degrees, which projects into the bladder. The intestinal surface is lined by mucous membrane, the bladder surface by stratified epithelium. Both these tissues present a normal appearance. They do not come completely together. On one side the intestinal mucous membrane becomes thinned out, on the other layers of epithelial cells lining the bladder become gradually reduced to a single layer. It appears as if from here the epithelial cells were in the act of growing over to reach the mucous membrane, although a small strip of tissue has not yet been covered by epithelial cells. Here connective tissue lies free to the surface. This connective tissue consists of cells of an embryonal type and of fibroblasts. The union between the bladder and rectal walls is complete throughout their whole thickness. One generally cannot distinguish—at the line of the union—what was originally bladder and what was intestinal tissue. The mucous membrane of the rectum, and the epithelial lining of the bladder have entirely disappeared at the line of union. Still one can see the lymphoid tissue of the rectum at the site of the union, although the lymph follicles vary from the normal in that they show a diffuse infiltration of polymorphonuclear leucocytes. So numerous are the latter that they predominate over the cells of a lymphoid character.

Gram's stain shows, in the tissues of the anastomosis around the line of union, short bacilli with rounded ends, which have poorly kept the stain. These micro-organisms are probably colon bacilli. The examination of the kidney tissues—cortex, medulla and pelvis—show normal conditions, with no evidence of inflammation or degeneration.

EXPERIMENT 13.—Bitch; weight 40 pounds; operated on June 1, 1899, killed June 28, 1899. The animal is well nourished, in perfect health, very playful and lively; killed by chloroform narcosis. Externally the abdomen presents in the median line, beginning about an inch above the symphysis pubis and extending upward for a distance of about $2\frac{1}{2}$ inches, a healed, smooth, linear cicatrix. Upon opening the abdomen by a long median incision, the large omentum is found very slightly adherent to the internal surface of the abdominal parietes at the site of the cicatrix. The extent of these adhesions is very small. The omentum shows no signs of inflammation.

The abdominal and pelvic cavities do not contain any fluid. The peritoneum is smooth and shining, and shows no redness or evidence of inflammation. The bladder is well contracted, firmly united to the rectum, and the place of union is everywhere covered by an uninterrupted coat of smooth peritoneum. An inspection of the intestines shows them to be normal.

The kidneys are now freed from the surrounding connective tissue, and a heated platinum loop introduced into the pelvis, and cultures made under the usual aseptic precautions. The ureters are then dissected free and the kidneys, ureters, bladder and part of the rectum removed.

The kidneys are of normal size and appearance, but, like all the internal organs, are congested in consequence of the death by chloroform. Cortex and medulla show normal relation and appearance. The pelvis do not contain any appreciable amount of fluid. The mucous membrane of the pelvis is smooth and pale, and presents no signs of inflammation. The ureters are not enlarged. The internal surface of the bladder, which contained some fecal matter, is thrown into rugae. In color it is pale pink, and microscopically shows no inflammatory changes. The anastomosis is firm, and admits the tip of the index finger. The anterior aspect of the ring is lined by bladder tissue, the posterior by rectal mucous membrane, which appears perfectly normal. Where the tissues from the bladder and the rectum meet, there is a slight depression which runs along the whole opening. The rectal mucous membrane in the neighborhood of the anastomosis appears normal. All internal organs, such as spleen, liver, lungs, heart, etc., are in a normal condition.

MICROSCOPIC EXAMINATION.—Pieces of tissue were fixed in Zenker's fluid, imbedded in paraffin, and stained by various methods.

ANASTOMOSIS.—The union between the wall of the rectum and that of the bladder is perfect. There is no doubling up of either intestinal or vesical tissue, and the line of union contains very little newly-formed connective (ciatricial) tissue. No evidence of inflammation is found in the line of union. The rectum presents a normal histologic appearance. The internal surface of the bladder, however, shows some marked changes. The lining epithelium at and near the point of union is missing, and the tissue forming the surface has the character of granulation tissue. It consists of a vascular tissue formed of round cells imbedded in a matrix of fusiform cells and connective-tissue fibers. It appears, therefore, that the presence of the fecal matter with its numerous bacteria has set up an inflammatory reaction on the internal surface of the bladder. Bacteria, however, were not found in the granulation tissue, nor in the tissue forming the line of union between the bladder and rectum. The following very interesting observation was made at the line of union: In some places the columnar epithelium of the rectal mucous membrane has grown from the rectal tissue over to the bladder surface. This covering of the bladder surface by intestinal epithelium is not yet very extensive, but there undoubtedly exists a marked tendency of the intestinal epithelium to grow by extension over the bladder surface and cover it, which, in consequence of irritation, has lost its own epithelium. In both kidneys the pelvis, medulla and cortex present no appreciable histologic changes, and no signs of inflammation or degeneration. There are found, however, a few micro-organisms in both organs as follows:

Right kidney, in tissue near the surface of the pelvis, bacilli, a few diplococci and some deeply staining round bodies which look like either torula saccharomyces or protozoic bodies; in the cortex a few bacilli in the convoluted tubules and in Bowman's capsules.

Left kidney, in tissue near surface of the pelvis, a few bacilli; in the cortex likewise a few bacilli.

These micro-organisms are nowhere found in large numbers but only seen sparingly here and there.

BACTERIOLOGIC EXAMINATION.—Two glycerin-agar tubes were inoculated from the pelvis of each kidney. Of each of the two groups one developed a growth, consisting in each instance of a mixture of bacilli—colon as it appears—and diplococci.

Epiërisis: It must be conceded that both kidneys in this case had become infected. But it appears moreover that the infection must have only recently occurred. The number of micro-organisms found in the kidney was not large, and there were not yet present any appreciable histologic changes. The mucous membrane of the bladder, it appears, in consequence of the irritation from the fecal matter, had lost, in part at least, its epithelium and had developed signs of a reactionary inflammation. It is not unreasonable to suppose that the infection which had occurred might have been prevented

by regularly washing out the bladder, which, in the case of a dog, cannot be well done, but which could be done with a human patient.

The above is only preliminary to a complete paper which will be published in a short time, containing a detailed account of all the experimental work, together with microphotographs, photographs of the gross specimens and drawings illustrating the technic.

SEEING CAPILLARY CIRCULATION IN ONE'S OWN RETINA.*

BY C. E. NORTON, M.D.
LEWISTON, ME.

This paper is presented to the ASSOCIATION for three reasons: 1, the subject has a scientific interest; 2, it has a practical bearing; and 3, I have presented it for a personal reason. I have written a short note on this subject before. On reading this note some oculists and other scientific men have expressed the opinion that the phenomena seen are not due to the capillary circulation, but are due to *muscæ volitantes*. Believing, as I do, that it is possible to see the corpuscles of the blood moving in the capillaries of the retina and that these corpuscles are not the same as *muscæ volitantes*, nor should they receive the same name if we wish to preserve scientific accuracy in our nomenclature, I have written this paper, in which I endeavor to demonstrate the accuracy of my belief.

Over twenty years ago I discovered that while looking at a clear sky through a piece of dark blue glass I was able to see small, bright objects moving in all directions with a peculiar jerky motion. Later experiments showed me that these bright objects could be seen more plainly if several thicknesses of glass were used. I have never failed in endeavoring to demonstrate this phenomena to others. I have found that the same thing can be seen by the use of glass of other colors, but it is plainer with the blue than with any other glass that I have used. I can explain the action of colored glass only on the theory that the high color obscures the vision of external objects and allows the attention to be concentrated on entoptic phenomena and the bright color furnishes a homogeneous background which affords a proper contrast when the entoptic vision is projected on it.

I will endeavor to answer the question: "Why is this phenomenon not due to *muscæ volitantes*?" In the first place it will be well to define the terms used. *Muscæ volitantes* are due to particles, strands, or masses floating more or less freely in the vitreous humor, or in a chamber between the vitreous and the crystalline lens. Any motion of *muscæ* is due either to gravity or to movements of the eyes, and this movement may be in any direction. If we suddenly turn the eyes upward and immediately down again the *muscæ* will float upward and then gradually settle down into the lower field of vision and sometimes below the field of vision. They may follow the same path in falling down that they had in going up. Again, by a sudden turn of the eye downward and then holding it still we may be able to cause these muscæntic particles to rebound and rise higher in the field of vision. Again, it is possible while lying on the back to get one of the particles to float directly in the center of the field of vision, and we may be able by care to balance and hold the particle in this central position.

The particles that can be seen with the blue glass have

*Presented to the Section on Ophthalmology, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio June 6-9, 1899.

1 *Annales D' Oculistique* (English edition), May, 1896.

none of these properties of *muscæ*. The particles are not floating freely, but move only in definite lines. Gravity has no effect on them. Movement of the eyes in any direction carries all of the particles seen in the same direction, with the same angular velocity that the eye has. Suddenly stopping the motion of the eye does not allow the particles to fall in any way. It is an impossibility to make these particles rebound. They never move backward and forward in the same path. It is absolutely impossible to bring one of them to the center of the field of vision. The particles that produce *muscæ volitantes* are frequently globular in appearance, or sometimes ring-like, and these rings sometimes have a darker center. These rings or globes may be of sufficient size to subtend one or more minutes of the arc. In all of these respects *muscæ* differ from the spots seen with the blue glass. The latter are so small that it is impossible to perceive any structure whatever. Sometimes a number of globular or ring-like *muscæ* may be seen to be connected together by a band, forming an appearance resembling a string of beads. These strings may sometimes be straight and of some length. The particles seen with blue glass are never connected together by any visible band, neither are they ever arranged in a straight line of an appreciable length.

Having pointed out the dissimilarity between *muscæ* and the particles seen with the blue glass, we will consider these particles more particularly. They are very small and without visible structure. Their motion is a peculiar jerky one, each particle moving forward rapidly for a moment and then for a moment having a slower motion. During the rapid part of the motion the particles seem to be slightly elongated; without doubt this apparent elongation is due to the "persistence of vision." The motion of these particles exactly corresponds to that seen in the capillaries in the web of a frog's foot when it is examined under the microscope. The motion is never forward and back along a single path, but always in one direction. The jerks of this motion are synchronous with the pulse-beat. The number of jerks may be increased by anything that will increase the number of heart-beats, for example, physical exercise.

None of these particles can be seen in the field at the point of fixation corresponding on the retina to the macula lutea, but they are seen all around this point and their paths bear the same relation to the point of fixation that the retinal capillaries do to the macula lutea. Any movement of the eye gives the particles together in their paths the same movement both in speed and in distance as the angular movement of the eye. This fact would prove that the particles must be very near the percipient layer of the retina, as if they were situated any appreciable distance in front of the retina, their angular motion would be different from that of the eye.

The foregoing evidence seems to show that there is no similarity between these particles and *muscæ volitantes*, with the slightest exception that they are both entoptic appearances. There is everything to prove and nothing to disprove that the appearance is due to the image or shadow of the blood-corpuscles in the capillaries of the retina falling on its percipient layer. That these corpuscles have been seen and described by others there is no doubt. The only claim to originality that I make is that I have discovered an easy method of seeing them when the eyes are in health.

This subject has a practical bearing. This appearance is sometimes seen without the aid of blue glass. When this occurs frequently or constantly in the case of persons who are not trying to see it, it is valuable

evidence of ocular overwork. And when the appearance is continuous I have seen some evidence tending to show that it is a premonitory symptom of neurasthenia, but I have been unable to give this subject the attention which it doubtless deserves, as this class of patients seldom come to an oculist.

DISCUSSION.

DR. GEORGE M. GOULD.—I do not know that I can add anything of value to this discussion until I can make the experiments with the blue glass, and I can have no opinion on the matter at present further than that derived from a general consideration of the subject. I cannot see how there can be sufficient magnifying power added to the eye to make it possible to see the red blood-corpuscles. It takes a very high magnification to enable us to see them by the microscope. I have considered the phenomena spoken of as a matter of accommodation. Last year I spent some time in the mountains, and while there I noticed a great prevalence of *muscæ volitantes*, which were present all the time I remained there. I found that if I examined them without accommodation they were say a quarter of an inch in diameter, when looking at distant clouds, but with the use of the accommodation, and especially with the aid of ground glass, they narrowed down to the size of pin points. I have been supposing that these were the phenomena that the Doctor alluded to. I shall be very much interested in going through the experiments spoken of, and yet I cannot readily see theoretically how the retina can see its own red blood-corpuscles. This subject is indirectly related to a little instrument I meant to have shown at the meeting last year in Denver, but which was unfortunately broken in transit. It consisted in revolving a pinhole-perforated disc, 1/16 of an inch around the center of the pupil, so that it would throw shadows on either side of the capillaries.

DR. A. B. HALE.—If Dr. Norton will refer to Zeng's article in the *Monatsblätter* of April, 1897, he will find corroboration of his studies in perhaps more detail. It was enough to convince me that one could see his own blood-corpuscles and Zeng even thinks he can detect the red from the white corpuscles. The work was very thoroughly done and with enough detail to make one abandon the idea of *muscæ volitantes*.

DR. EDWARD JACKSON.—There can be no doubt as to what it is, for any one who has seen it will at once be struck by the resemblance to the capillary structure of the frog's foot. We must remember that the corpuscle is there in close relation to the retinal percipient elements so that the image is as large as the object. If you will take some object at a known distance and compare it with the size of these moving bodies, you can satisfy yourself that they are approximately the size of the blood-corpuscles; I think they are a little larger than the blood-corpuscles, probably from diffusion. I can see them even against this gray sky without any blue glass, and I can always see them against a blue sky. I think the blue brings them out because it approaches nearly to the complementary color of the corpuscle. There can be no question but that they correspond in size to the projected image of a blood-corpuscle situated in the retina and their motion is very characteristic.

DR. C. E. NORTON.—In my experiments with the colored glass I have found that the glasses having the colors that came near the violet end of the spectrum showed the corpuscles much more distinctly than those approaching the red, and I have not been able to see them very distinctly with any other glass, but I do not know that this has any special significance.

CHRONIC INTERSTITIAL NEPHRITIS.

TREATMENT OF THE HEART THEREIN.

BY ARTHUR R. ELLIOTT, M.D.

CHICAGO.

The sequence of events occurring in the cardiovascular apparatus during the progress of chronic interstitial nephritis is recognized as constituting an integral part of the pathologic incidence of this form of Bright's disease. The changes taking place may be briefly summed up as sclerosis of the arterial system and hypertrophy of the heart, conditions which in the fullness of their development invariably result in heart failure. The constancy of these circulatory accompaniments has been recognized since the days of Bright, who placed the per-

*Presented to the Section on Practice of Medicine, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-8, 1898.

centage of occurrence at 65. More recent estimates make a much higher showing, Goodhart's post-mortem average being 89.6 per cent., Ewald's 84 per cent., Kanthack and Holmes' 90 per cent., while Dickinson, Tiard, Balfour and others regard it as certain that thickening of the arteries and hypertrophy of the left ventricle are invariably associated with cirrhotic kidneys. It is not too much to say that hypertrophy of the heart and arterial fibrosis accompany, in some degree, every interstitial nephritis of any standing, and are dominant factors in the clinical history. In brief detail the cardiovascular sequence is as follows: As a result of the renal lesion and the consequent imperfect depuration of the blood or because of conditions which coexist, although not necessarily the outcome of the renal changes, an abnormally high vascular tension becomes established and may persist for years and progressively increase. This sooner or later brings about certain alterations in the walls of the arterioles, resulting in thickening, loss of elasticity and increasing resistance to the onward passage of the blood. This imposes an increased burden upon the left ventricle, which undergoes hypertrophy to cope successfully with the high peripheral resistance. Thus compensation is established. Up to a certain point this hypertrophy of the heart may be said to be a "compensatory" or at least an "accommodation" enlargement, and it is to that extent fortuitous and desirable, and so long as it compensates the renal lesion, its purposes are good. The evils of excessive hypertrophy may as a rule be successfully combated, but deficient or faulty compensation is fraught with serious consequences to the patient.

Samuel West¹, in the last Lettsomian lectures, remarks, "A persistently high tension under ordinary conditions is of itself mischievous, but not so with granular kidney, paradoxical as it may seem. The patient is best without granular kidney, but if the kidneys be granular, it is better that the tension be high than low; in other words, the patient is worse with low tension."

The changes in the arteries are progressive, and the increased blood-pressure permanent. The hypertrophied muscular tissue is prone to degenerative changes, and shows a greater tendency to subsequent exhaustion and weakness than the normal heart tissues, so that it is but a question of time until increasing impairment of the nutrition of the myocardium with constantly growing peripheral resistance results in failure of compensation and dilation of the hypertrophied ventricles. This nice adjustment to conditions that Nature brings about in the circulatory organs suffices by its compensation of the renal lesion to obviate the main danger of the nephritis, the retention of the uremic toxins. The debt which the kidneys owe the heart in this way is amply demonstrated when the cardiac compensation fails. Then the greatly diminished urine, increasing albuminuria, and rapidly developing uremia leave us in no doubt as to what organ has conserved the life of the patient. Moreover, because of the friendly offices of the heart we can obtain but little true idea of what the organic capacity of the kidneys really is, for what they are able to accomplish with the co-operation of a sustained blood-pressure and what they are capable of when deprived of such assistance are two widely different things. Kidneys which can well maintain their function under increased blood-pressure prove miserably inadequate when such support is removed. In a general way it may in consequence be stated that the condition of the heart is the best gauge of the disease. The clinical history of the vast majority of cases at their termination is that the excretion of urine was sufficiently good for the maintenance of life

and that the direct cause of death came elsewhere than from the kidneys—usually the heart.

Furbringer² is at some pains to point out that the heart does not simply compensate but overcompensates the kidney lesion. This may be a necessity imposed by the peculiar character of the renal changes but, however that may be, the cardiac condition is one of tense adjustment which becomes progressively more susceptible to influence, more sensitive, more resentful to any increase in the circulatory load. During the early stages of the disease the cardiac hypertrophy is not extreme enough to give rise to symptoms sufficiently pronounced to awaken even the notice of the patient. With the progress of the malady, evidences of embarrassment on the part of the heart become manifest, and giddiness, dyspnea on exertion, cardiac discomfort, headache and palpitation give to the clinical picture the "cardiac" aspect it seldom loses during subsequent progress. These symptoms are at first transitory, occurring at night time or following unusual exertion. With the onward march of the disease, these signs of impaired circulation become more permanent and distinct, and during the last few weeks the dyspnea is constant and dropsy and uremic symptoms supervene. At the same time the pulse loses somewhat in tension and the heart sounds become less distinct and accentuated. The pulse, save in rare instances, may be said never to lose the element of tension, although this may become modified through failure of the muscular power of the heart.

In the treatment of chronic interstitial nephritis, if we are to draw any inference from the clinical history, we have decidedly to deal with more than one set of organs—the kidneys. The damage wrought by degenerative process in the kidneys is irremediable, and in our endeavors to favorably influence the progress of the disease, we may with profit teach our art to follow Nature's lead and assist her in her heroic efforts at a conservative systemic compensation. Unaided the preservative adjustment in the circulatory organs—which is Nature's compromise with the erring kidneys—is sufficient of itself to extend the course of the disease over many years, and with such perfect accommodation that it may be only through some untoward circumstance that the real condition of affairs is discovered. By contrast, the futility of our own endeavors when the compensation has failed is apparent. The problem before us in the management of the disease will always include our utmost to conserve the damaged kidneys, and, if possible, stay the progress of the degenerative changes there, but it is no less incumbent upon us and important to maintain the *status quo* in the circulatory system. No greater mistake could be made than to approach the question of treatment solely from the standpoint of the kidneys and leave the overburdened heart and arteries to shift for themselves under the exigencies of an impaired organic life. With the greatest care we must avoid all conditions which threaten the hypertrophied and sensitive heart fibers. We must employ all means to support the tone of the cardiac muscle and promote the equanimity of its nervous mechanism, and when compensation fails, we must strive to restore, if possible, the damaged heart wall and re-establish previously existing conditions.

In my remarks upon treatment, I shall make no direct reference to the measures one should address toward the control of the renal condition, but will confine myself to the treatment of the heart and arteries. The conditions which confront us here are, as we have seen, thickened and inelastic arteries which are constantly

subjected to the strain of a heightened tension, and a hypertrophied and sensitive heart muscle. Thus the patient is exposed to the risk of rupture of the degenerated vessels on one hand, and to failure of the hypertrophied heart on the other. As has been pointed out, both the increased tension and cardiac enlargement are compensatory and preservative, and on this account any effort to qualify either, unless taken with full understanding of conditions, may prove meddlesome and mischievous. The question is: At what point is one's intervention warranted? It is impossible to lay down any rule, but it would seem best to abstain from any active intervention as long as there are no definite subjective symptoms present. As soon as compensation passes in either direction the point of exact adjustment there is not lack of evidence to publish it. An increase of tension in the arterial system beyond the bounds of safety becomes manifest in dizziness, ringing in the ears, headache, disturbed cardiac action, unusual fullness of vessels, occasionally epistaxis, or it may be temporary amblyopia. The first sign of a flagging heart is seen in the pulse, which loses some of its hardness and becomes irregular and frequent. Additional signs are dyspnea, post-sternal weight and discomfort, cough on exertion or recumbency, and some diminution in the volume of urine.

In the early stages of the nephritis, if it be our good fortune to assume charge of the case at that amenable period, we should begin while compensation is still well maintained to take measures to ensure permanence to the existing conditions. If the full co-operation of the patient can be secured, much may be done for his future health. With this end in view it may be well to set the matter plainly before him and definitely state the necessities of his case, for it is often difficult to secure the faithful and permanent co-operation of the patient in so chronic a disease. As an assurance that no important detail of the patient's life escape, it is well to have him set forth minutely and in full a sample day of his life, his hours of work and sleep, his manner of occupation, his diet and habits. In this way a more thorough regulation of the small details of life, which are often important, may be secured. It is well to bear in mind that the directions to the patient are for his permanent adoption. We should, therefore, not risk misunderstanding, by lack of explicitness of direction or by trusting important details to the faulty memory of the patient. It is far more satisfactory to furnish him with full written particulars of the course to be pursued.

The details of life which will need especial care in regulating are the diet, clothing, exercise and baths. Exercise is of more importance to the nephritic than perhaps to any other, because of the great need that exists to secure as good a nutritive condition as may be. Regular exercise in the open air should be recommended. This may consist of walks upon the level, perhaps golf upon a level course, or easy bicycle riding upon a smooth and level road. Strenuous forms of exercise, such as tennis and horseback riding, should be interdicted, and the patient must be counseled never to hurry, run, or climb long flights of stairs, walk in the face of a strong wind, or attempt to mount steep acclivities, lift heavy weights, or strain at stool, and to be careful not to exert upon a full stomach. He should be warned to carefully guard against exhaustion and desist from all activity at the earliest approach of a continuous fatigue.

The clothing is a matter of much importance. These patients very easily take cold, in which case the kidneys and heart bear the brunt of the disturbance, and often to their permanent detriment. Moreover, the con-

tact of a chill air upon the surface causes contraction of the cutaneous capillaries, thus raising arterial tension and increasing the work of the heart. The patient must be cased in woolen garments from head to foot, and sleep with flannel next to the skin. In this manner, as Dickinson facetiously remarks, he may carry the temperature of summer under his waistcoat while breathing the air of winter, and so provide himself without leaving home with one of the advantages of travel.

The diet best suited to the control of the renal lesion is also best adapted for the heart. The cardiovascular changes are Nature's responsive efforts to combat imperfect blood depuration. Consequently, the careful regulation of the diet, according to the principles in vogue must form, especially in the earlier stages of the disease, the corner-stone of our treatment of the heart. The flatulence and autointoxication of indigestion are of all things the most disturbing to both the heart and kidneys. This is a development to which these patients are especially prone. The most scrupulous regularity of habit in regard to meals must be imposed, and the preparation of the food should of preference be by simple method. The patient must be cautioned against heavy meals, and eating to satiety, and be instructed against fast eating and insufficient mastication of the food. The regularity of the bowels should be scrupulously maintained, and an occasional mild mercurial purge administered. Warning must be made against the immoderate use of tobacco, the use of alcoholics, sexual excess, and emotional disturbances, because of their disturbing effect upon the cardiac system.

At the earliest signs of cardiac embarrassment some restriction in activity should be insisted upon and when compensation seems threatened, or has already given way, absolute rest in bed must be enforced. It should be remembered, however, that, beneficial as rest may be to tide over a period of wavering compensation, prolonged bodily inaction is undesirable and may work positive harm by impairing the nutrition, and thus hastening the degenerative changes at work in the cardiac walls. During the period of rest, massage and passive movements may do much to obviate these undesirable results. The greatest importance attaches to sustaining the mental tone of the patient, and regular sleep, which is one of the best of heart tonics, should be secured. To this end paraldehyde, trional and sulphonal may all serve excellent purposes and when a simple reflex irritability seems to be the underlying cause, the bromids may suffice. Chloral is frequently a dangerous cardiac depressant and opium is bad for the kidneys.

The medicinal measures which we can bring to bear upon the heart during the existence of its compensation are limited to the vasodilators. The effect of these remedies is largely mechanical. They act by dilating the capillaries, lowering peripheral resistance and thus diminishing the work of the heart. Moreover, by allowing a freer passage of blood through the vessels, the nutrition of the various tissues is improved. They are useful to overcome excess of tension in the arterial system, and are valuable aids in securing relief to an overburdened heart. To meet alarming symptoms and produce at once a decided effect upon blood-pressure, no measure is so useful as a free catharsis. In selecting a cathartic for this purpose, it is not a matter of indifference which one is chosen. Some preparation of mercury should be employed, for from it more decided benefit can be derived than from larger doses of other purgatives. The beneficial effect upon the tension of such a measure is well demonstrated in sphygmographic pulse-tracings

taken before and after the action of an aperient. This effect may be continued and supplemented by repeated depletion from the bowels or better by means of vasodilators. The vasodilators most useful in controlling arterial tension are the nitrites and the iodids. To meet emergencies amyl nitrite may be employed by inhalation, but its action is too ephemeral to admit of its continued use. For this purpose nitroglycerin is usually the drug of choice. It is well to bear in mind when prescribing the nitrites that those who have supernormal tension manifest a peculiar tolerance toward their action. Given in conventional doses they may prove disappointing. Nitroglycerin is very diffusible and within a few (five) minutes its effects become apparent, while at the end of three hours the arterial tension resumes its usual degree. A longer period than three hours should, therefore, not be allowed to elapse between doses, if a continuous effect is to be secured. The action of the iodids upon the vascular tension has been a subject of much dispute; some observers denying to them all effect and even condemning their use, while others enthusiastically praise them. Vierordt² expresses himself unqualifiedly in their favor, and reports undoubted good effects in the control of tension. He regards the "modus operandi" of the iodids as entirely hypothetical, and, taking exception to Huchard and others who attribute to them direct action upon the heart and vasomotor nerves, he thinks it probable that the morbid process in the blood-vessels, which otherwise always shows a progressive character, is brought to a standstill, and that consequently the heightened blood-pressure is gradually lowered, which would provide for a decided amelioration of the circulatory function, although no retrogression of the vascular changes may be looked for. Judged from the effects upon the tension when administered for a considerable period, they may certainly be accounted a valuable means of relief to the overloaded circulation, and they may as well tend to restrain the hyperplasia in the kidneys. The most appropriate forms for administration are sodium and potassium iodids, in from five to ten grain doses given well diluted one hour after meals. Mercury protoiodid seems occasionally to render very happy service in cases marked by a bilious habit with coated tongue and sluggish liver. It is undesirable to give a prolonged course of mercury in nephritis, so that the protoiodid is best employed as an alternating substitute with one of the other iodids, and not continued for longer than two weeks at a time. One-sixth of a grain thrice daily is an appropriate quantity.

It is unnecessary to state that heart tonics of the digitalis group should never be used during the stage of cardiac hypertrophy. Digitalis and its congeners are only admissible when there is indication of failing compensation. In employing digitalis, its vasoconstrictor action must be borne in mind and provided against or the peripheral resistance may be dangerously augmented. This is best accomplished by the simultaneous administration of a vasodilator. A good practice is to give the vasodilator about one hour after the digitalis. The latter is slowly absorbed, while the vasodilators are without exception quickly diffusible, and by this arrangement of administration, the maximum effect of each falls together and control of tension is secured. It is a safe rule to follow, to always combine a nitrite or iodid with digitalis in interstitial nephritis, for some element of tension is never lacking. Strophanthus may be advantageously substituted for digitalis when the pulse tension is high. Its efficacy as a heart tonic is established and it lacks the arterial action of digitalis. It must, however, be used

with caution in advanced degeneration of the myocardium. If digitalis and strophanthus fail to elicit response from the failing heart, the outlook is grave indeed, and recourse to other measures holds out small prospect. Caffein and theobromin may prove of value on occasion, and nuxvomica and strychnin will always be of the utmost value as adjuvants to any plan of treatment.

In the employment of the measures referred to it may be stated that digitalis and the heart tonics should in all cases be reserved for a failing heart while the vasodilators may be employed throughout, first as conservators of the heart by modifying peripheral resistance, and afterward as guards to the action of the heart tonics.

Time will not permit of more than a cursory reference to the applicability of the Schott gymnastic methods to the failing heart of Bright's disease, nor is my own experience in their use sufficient to enable me to dogmatize. Schott gymnastic exercises comprise certain volitional muscular movements made against graduated resistance applied by the hand of the operator, and having for their object the stimulation of the circulation in the muscles brought into action whereby the heart is reflexly induced to stronger and more abundant contractions with a simultaneous relieving of the venous and acceleration of the arterial and lymphatic circulations. These movements are applied according to a definite plan and with such attention to detail as to secure in an increased degree all the good effects of passive movements with little or no fatigue. To quote the words of R. Douglas Powell³: "The effect of the Schott exercises may be said to be a stimulation of the heart's action with some steadying effect and increased completion of systole, an improved circulation through the coronary arteries, and an increased mobility of the blood by its readier passage in greater bulk through the muscles, especially on their venous side. Their effect on the general blood-pressure is that during the exercise itself the pressure first rises above the normal, but begins to fall even during the continuance of the exercise, so that at the end of the treatment it has usually reached the normal. After cessation the pressure continues to fall and may become subnormal for half an hour or longer, when it slowly rises again to its initial height."

These exercises have been found of most excellent service in the failing heart of valvular compensation. By analogy it would seem not unlikely that they might prove to be a valuable contribution toward our means of sustaining the degenerated heart of granular kidney. At the outset, however, we are confronted by the fact that these movements are absolutely contradicted in advanced arteriosclerosis characterized by hypertension and degenerated vessels, and that they offer but slight prospect of success in cases with even moderate arterial change. In arteriosclerosis, the increased energy of the heart's action caused by the muscular contractions is but inadequately offset by the coincident dilation of the arteries and hence a dangerous raising of the blood-pressure and strain upon the heart results. In place of an improvement of the cardiac insufficiency in such cases, the opposite effect is brought about. It is apparent at once that very few of the cases we are considering are eligible for this plan of treatment. Still just as there are certain cases of arteriosclerosis of moderate grade in which the Schott exercises may with certain modifications be employed to advantage, so there may be an occasional nephritic heart capable of deriving benefit from mechanico-gymnastics. In considering the question of the proper selection for mechanical treatment,

no general rule can be laid down. Each must be judged upon its own merits and with the utmost care, for great damage may be inflicted in unsuitable cases. When the sclerosis of the arteries is not general and advanced and the superficial vessels not rigid, an attempt with resistance exercises may be made, beginning in an insinuating way with the gentlest movements and desisting upon the first sign of fatigue. No progression should be made to the more trying movements until a beneficial reaction is apparent from the easier exercises. If these fail to elicit results, it is needless to persist. In cases where the heart is so feeble that the primary rise of blood-pressure caused by even gentle exercises interferes with its action, continuance of the treatment can but result harmfully. It may be laid down as an absolute rule to be followed in these cases, that when there is so advanced a degree of degeneration of the myocardium that digitalis and other heart stimulants are without effect, no attempt with resistance exercises should be made. In patients whose muscular powers are greatly enfeebled the treatment is also forbidden. Dropsy may be taken as a contraindication, as may also persistent dyspnea and engorgement of the rigid heart.

It is unnecessary to state that in using a measure which in these cases is so largely tentative, every precaution should be employed to secure safety and success. Not only should all the rules laid down by Schott and Besly Thorn be scrupulously obeyed, but the patient's condition must in all cases be looked to to furnish the individual indications so necessary to the success of any measure.

Although gymnastic exercises are but rarely permissible in the weak heart of interstitial nephritis, massage and passive movements are much more widely applicable. The experiments of Bruton and Tunncliffe⁵ go to show that the effect of massage and passive movements is to improve the circulation of lymph within the tissues and to determine to the muscles a larger supply of blood, thus at once stimulating nutrition and affording mechanical relief to an overloaded heart. The employment of these measures is accompanied primarily by a slight and transient rise in blood-pressure, which is soon followed by a fall in tension less extreme and not so long sustained as that following resistance exercises. The effect, therefore, of these measures is the same in quality as the Schott movements, differing only in degree and duration, while the dangerous increase of blood-pressure is eliminated. They furnish valuable means of obviating the circulatory stagnation and malnutrition of prolonged and enforced rest. In fact, it is this last conservative function that is the principal office of all these mechanical measures in the cases under consideration. Too much must not be expected of them. The very nature of the factors which bring about dilation of the hypertrophied heart of Bright's disease precludes the possibility of great or permanent results from any or every means we can bring to bear. Once dilation has taken place the outlook is indeed a dark one.

In concluding my remarks, I cannot do better than to repeat the words of Leonard G. Guthrie,⁶ who gives as a guarding principle in the treatment of chronic nephritis the motto: "Watch the heart and pulse." Herein I am convinced is the surest way to the successful management of this widespread disease. Sooner or later the morbid process must end in death. But this termination can be longest postponed, the patient's interests can best be served, and his condition most securely palliated by placing the heart upon a therapeutic parity with the kidneys.

BIBLIOGRAPHY.

1. Some Clinical Aspects of Granular Kidney. *British Med. Jour.*, Feb. 11 and 18, March 11, 1889.
2. Diseases of the Kidneys and Genito-Urinary Organs. vol. i. London: H. K. Lewis, 1885.
3. *Centralblatt für innere Med.*, June 26, 1897.
4. *British Medical Journal*, vol. 1, 1898.
5. *Journal of Physiology*, vol. xxvii, p. 364.
6. Chronic Interstitial Nephritis in Childhood. *The Lancet*, Feb. 27, 1897.

DISCUSSION.

DR. C. H. MILLS of Illinois.—I have had a great deal of experience in diseases of the heart, largely during my service of fourteen months in charge of the hospital. Under me came a great many cases of organic diseases of the heart. Aconite is a great remedy in Bright's disease of the kidneys and in the irritable heart. Besides there were given tonics—iron, gentian, cinchona, and when a sedative was needed, aconite.

DR. R. H. HENRY of Illinois.—I wish to say a word in regard to the use of mercury and iodid of potassium, for I was much impressed by the remarks made by Dr. Elliott. I believe the use of mercury and iodid of potassium will prolong the life in these cases; also, the use of the other tonics and vasomotor dilators. The long-continued use of iodid of potassium without disturbances of the stomach will prolong life in the most hopeless instances. The mercury has a specific effect in unloading the canal and in increasing the activity of the cells lining the canal, and so unloading a sluggish condition. I usually combine the nitrates with it, and I have had satisfactory results.

DR. NORMAN BRADEN of Los Angeles, Cal.—I am really satisfied that there is nothing left to be said regarding the management of these cases; the speaker has covered the ground in such a thoughtful, judicious and able manner. Patients, in the light of existing knowledge, who can be managed as Dr. Elliott has suggested, will have the best treatment extant. From what he has stated, however, one would almost come to think that we ought to expect a curative effect from the iodids—a curative effect upon the disease itself. I fear that this is not justified by the experience of the profession. And so the thought that occurs to my mind as the paramount one is the need of further study to discover some means that shall less the progress of the disease; i. e., to stop the interstitial nephritis and lessen thereby the coincident thickening of the heart muscle and vessel-walls. It is probably true that the heart must undergo hypertrophy in all cases of interstitial nephritis. It is probably true that hypertrophy is exactly in proportion to the amount of disease in the kidneys, although I doubt if that is always the case. I think these pathologic processes which are conservative do not always go on exactly to this conservatism. Sometimes the hypertrophy is greater or less than necessary; we see that in the fibrosis of pulmonary tuberculosis. There it is a conservative condition; it helps to cure the patient. We know that when there is no hypertrophy the disease runs on rapidly to destruction. This shows the conservative power of Nature. It is, therefore, not true that we always have hypertrophy of the heart coming on with the interstitial nephritis in due proportion. I do not know that we know that patients die of heart failure. So long as the heart remains hypertrophied, and not dilated, we believe that the patients are going to live. We observe a number of cases where there is no giving away of the heart or blood-vessels, but where injury to the nervous centers and brain particularly seems to be the predominating cause of death. The amount of urea did not justify the expectation of fatal issue. The great desideratum in the treatment of this disease is to get the means of lessening the interstitial nephritis.

DR. ALFRED STENDEL of Philadelphia.—The paper of Dr. Elliott's is of unusual interest, which lies in the fact that he has pointed out the general relations of interstitial nephritis, and particularly that the vascular system is the point of attack for medical men. In the early stages, with treatment we can do good. Reduce the blood-pressure, and if possible control the fibrific changes, particularly with the Schott or mechanical method, with which I have had experience. Physiologists have shown that the effect of exercise is to reduce the blood-pressure in the muscles. I believe that the reduction in the blood-pressure is greater than Dr. Elliott is inclined to state in his paper. There is an increase in the blood-pressure in the beginning of the Schott treatment, but this is only temporary; it is soon followed by a fall in the pressure. In treating a case of chronic interstitial nephritis from the beginning, the institution of the systematic mechanical treatment may prevent fibrific changes in the blood-vessels and in the organs. For this disease is a general disease which affects the kidneys, liver, heart muscle, brain and other organs, sometimes one more than another—and it is to be controlled by measures which control the blood in general. We do not know how the nature of the poison developed, but we do have the means by

which we can obviate its effects. The continued use of mercury in small doses, I believe, may influence the elimination of this poison. As for the iodids, I am convinced that those of sodium and potassium are the preferable salts; they are better borne and have a less disturbing influence upon the heart. The mechanical treatment, I am convinced, is the treatment of the future for this disease. It should be given when the disease is forming.

DR. EDWARD F. WELLS of Chicago.—I wish to speak briefly upon a single point, that is, the reduction of blood-pressure. In interstitial nephritis there is an increase in the blood-pressure and a hypertrophy of the heart. This increase in blood-pressure causes a thickening of the arteries, the cardiac hypertrophy increases more and more, and if the patient takes some amount of active labor it is necessary that his nutrition should be kept up. The first thing to do is to stop any excessive amount of exercise he may be taking, and limit the amount of nitrogenous food, and I believe that a careful regime, such as the avoidance of draughts, regulation of his diet, the giving of large amounts of fluids to reduce the amount of poison in his system, will do vastly more good toward reducing the blood-pressure and relieving the patient and prolonging his life than any drugs. I do not wish to be understood as deprecating the use of drugs; I believe that the iodids are the drugs to be used. We should not lose sight of the careful regulation of the diet.

DR. JENKINS of Iowa.—I am very much pleased with Dr. Elliott's paper, and I wish to emphasize one portion of it regarding the use of nitroglycerin in cases of chronic interstitial nephritis. I have frequently had patients come to me with this disease for treatment, coming from other physicians, who had failed to try this remedy. Placing them on the use of strychnin, regulating their diet, and giving nitroglycerin relieved their symptoms and gave them many months of comfortable living. For this reason I am glad Dr. Elliott emphasized that portion of his paper. The disease has not been well treated until recently. Now it is, with careful bathing and dressing, dieting, regulation of bowels, with the administration of such vasomotor dilators as glonoin, one drop every two, three or four hours, and up to five drops, that benefit is to be derived.

DR. ARTHUR R. ELLIOTT, closing the discussion.—I wish to express my pleasure at the amount of discussion my paper called forth. I think cases of interstitial nephritis cannot be classified as all belonging to the cardiac type, any more than they can be said to belong to the purely nephritic type. The fibrosis is a general one affecting different portions of the body in different degrees. I would like to state that in the preparation of my paper I was influenced in setting forth measures of direct treatment against the disease in the later stages, i. e., when cardiac hypertrophy was present or failure threatened. I did not enter into any discussion of the early stages of the disease. If we could get hold of the disease in the earliest stages I think that hygienic, dietetic and other measures would give better results than could be obtained through the use of drugs. The cardiovascular changes of nephritis are Nature's protest against the results of imperfect metabolism in the blood-stream.

SYSTOLIC MITRAL MURMURS.*

THEIR TRANSMISSION, WITH SPECIAL REFERENCE TO THE NATURE OF THE SO-CALLED ANEMIC MURMURS.

BY HORACE D. ARNOLD, M.D.

Physician to Out-patients, Boston City Hospital; Assistant Professor of Clinical Medicine, Tufts Medical College.
BOSTON.

What is familiar to us is not necessarily well understood and yet in medicine as much as in any branch of learning we are to accept this feeling of familiarity for knowledge. This thought must be my excuse, if one is necessary, for bringing to your attention a subject so familiar as the heart murmurs.

The question whether a systolic murmur is organic or functional is being constantly brought up for our decision, yet although it has been discussed many times there is still lacking that unanimity of opinion among the best authorities which would assure us that it has been definitely settled. The question is one of practical importance, and any addition to our knowledge, however small,

should be welcome in our efforts to find a solution.

A review of the literature shows that the discussion has turned chiefly on the points of maximum intensity of these murmurs. The second left intercostal space has been the battle-field of the champions. Whether the point of maximum intensity was just over the pulmonary artery or a little outside of it has been the burning question. So many theories have been advanced to explain the murmurs in this region that Balfour¹ has well called it the "region of romance" for cardiac murmurs. In all this discussion the area of transmission of these murmurs has received little attention, although it seems to the writer to be of considerable importance. In fact, the method of conduction of the sounds and murmurs of the heart to the surface of the chest, and the area over which they may be heard have only of late received much attention, and we have still much to learn of these important and fundamental matters.

Gibson² in his recent book says: "We are by no means thoroughly acquainted with the physical facts which regulate the extent to which the sounds are conducted." And again: "The direction of propagation and the extent of conduction constitute a subject of much difficulty in the study of murmurs."

When a murmur is heard at a given point on the chest, one fact at least is true, namely, that there exist at this point vibrations of the chest wall capable of transmission to the ear and of such a character and intensity that they produce the sensation of sound. How these vibrations originate, where they start, and how they reach the points at which they are heard, are questions less definitely determined—questions of probability rather than fact, which still come to some extent within the realm of opinion and theory. It is important to thus recognize when we cross the boundary separating fact from theory.

Clinically, we find that these vibrations reach the chest wall at certain areas; experimentally, we find that such vibrations may be caused by certain physical conditions; pathologically, we find these conditions existing at certain points in the heart and blood-vessels. In this way we can demonstrate the cause of certain murmurs. For example, we know that mitral regurgitation may cause vibrations which are heard as a systolic murmur near the apex of the heart. These vibrations are also heard in other areas, as will be considered later. It is worth while noting at this point, however, that the so-called anemic or functional murmurs frequently occur in trivial disturbances of health, are often transitory, and are rarely so associated with fatal disease as to give us the opportunity to definitely determine their cause by pathologic investigation. Our explanation of many of them is, therefore, based on inference, and carries a greater or less degree of probability rather than certainty.

It is generally accepted that mitral murmurs are heard best near the apex of the heart, and we commonly speak of this place as the "mitral area." The term is a good one, provided we do not assume that all murmurs heard in this area are generated at the mitral valve. It is not very uncommon to find a systolic murmur from the aortic valve transmitted to this point, and occasionally a presystolic murmur in this area finds its only explanation in aortic insufficiency. The vital point in all these cases is that the vibrations are carried here through the medium of the wall of the left ventricle and the blood within its cavity. This fact should be kept in mind when we speak of the "mitral area." In the same way it requires very little study of the distribution of murmurs to show that it is not safe to argue that because a murmur is heard at the aortic pulmonic, or tricuspid

* Presented to the Section on Practice of Medicine at the Fifth Annual Meeting of the American Medical Association, held at Columbus Ohio, June 6-9, 1899.

area, it necessarily originates at the valve with a corresponding name.

It is useful, in the ordinary examination of the heart, to keep these four valve "areas" in mind, but in a careful study of murmurs it is better to picture the anatomical relations of the normal heart and blood-vessels to the chest wall. If we will modify this picture to suit the given case, as shown by the evidence of inspection, palpation and percussion; if we further bear in mind the area and consistency of the lungs, the thickness of the chest wall, and the bony or muscular nature of the chest wall at a given place, then, and not fill them, we are prepared to interpret intelligently the conditions which determine the distribution of cardiac murmurs. In this way we shall find an explanation of many things which at first seem confusing and obscure.

Continuing our study of the mitral regurgitant murmur, it is generally stated that it is transmitted to the left from the "mitral area" into the axilla and may be heard at the angle of the scapula. Gibson's description is, in my opinion, more accurate. He says: "It is propagated from this region in every direction, but to a different extent it is conducted to a greater distance in the direction of the axilla and scapula." Again: "Very frequently the murmur is found to have a position of intensity almost as great as that over the apex-beat at a point between the left shoulder-blade and the vertebral column, and there can not be the shadow of a doubt that the conduction of the murmur to this point is due to the proximity of the left auricle."

This area in the back just described, which we may call the mitral area in the back, has received little consideration in most text-books. They seldom attempt to explain how the murmur reaches this point and apparently leave one to infer that it is transmitted around the chest-wall from the apex. This view is wrong, for it would not account for those cases referred to by Gibson in which the intensity at the mitral area in the back is "almost as great as at the apex," and greater than in the intervening space in the axilla. Still less will it account for those cases in which the murmur is transmitted as far as the axilla and is then lost, and yet reappears at the mitral area in the back. And, further, we sometimes have cases in which the murmur is actually louder in the back than at the apex. The explanation is undoubtedly found, as Gibson says, in the "proximity of the left auricle."

From our association of the mitral murmurs with the apex of the heart, which lies superficially, we are apt to forget how deep in the chest the murmur originates. The mitral valve is deeply situated, the left auricle more so. It is the blood passing through the mitral valve into the auricle which causes the murmur, and, except so far as the vibration of the valve curtains partake in the production of the murmur, it originates in the blood within the auricular cavity. It is a safe assumption then, that at the posterior surface of the auricle vibrations of considerable intensity exist. How do they reach the back?

Between the left auricle and the vertebral column lie the aorta, esophagus, vena azygos, and surrounding tissues of the posterior mediastinum. Although the distance to the spine is short, the vibrations do not traverse this path ordinarily, and we must conclude that these structures are not good conductors. Were the vibrations thus carried to the spine they would be heard with greatest intensity where the bony structures of the spine come nearest to the surface. This is not the case. The mitral area of the back, where the murmur is most constantly heard and with the greatest intensity, lies a short distance inside the inner border of the left scapula and a

short distance above its lower angle. This is the point where there is the thinnest layer of muscle in this part of the back. It lies just outside the deep longitudinal muscles along the spine, while it occupies a triangular interspace left by the trapezius, the latissimus dorsi, and the rhomboideus major muscles. Having ruled out the spine, the only medium of conduction from the left auricle to this thin part of the chest wall is the pulmonary tissue.

It is generally held that the pulmonary tissue offers an impediment to the transmission of vibrations from the heart, rather than a favorable avenue of conduction. This is certainly true in a relative sense, as compared with such avenues of conduction as the muscular walls of the heart or the column of blood within the heart or aorta, but it is true only in this relative sense. Furthermore, the extent to which it is true depends on the condition of the pulmonary tissue. If that is condensed or consolidated, it is recognized as a very good conductor of vibrations. On the other hand, if emphysema, the opposite condition to condensation—is present, we have a very poor conductor of vibrations, and it may be noted in passing that with an emphysematous condition of the lung a mitral murmur is inaudible or only very faintly heard in the back. Between these two extremes lies the condition of the normal pulmonary tissue, which, I think, from all the evidence, we must accept as a fairly good conductor of vibrations from the heart. This, at least, is an opinion into which I have been forced in trying to account for many of the peculiarities of the distribution of heart murmurs, and it seems the only rational way to account for the transmission of the mitral regurgitant murmur to the mitral area in the back.

Turning now to the front of the chest, let us consider how the conduction of vibrations by the normal lung tissue may affect the distribution of the murmur there. Does it not give us a more rational explanation of the characteristic distribution of the murmur in front? As Gibson says: "It is propagated in every direction, but to a greater extent in the direction of the axilla." Were it transmitted from the apex alone, and solely by the chest wall, we should expect it to be transmitted best and farthest in the direction in which there is the best chance for bone conduction, and this is to the right and not to the left of the apex. If, however, we accept the view that the vibrations may be carried a moderate distance by the lung tissue, we have an easy explanation of the transmission to the left of the apex, for the distance from the vibrating left border of the auricle and ventricle to the chest wall as it rounds back into the axilla is only a short one. It is not claimed that there is no lateral transmission of murmurs by the chest wall itself, for that certainly exists, but it is felt that too much stress has been laid on this factor, and that, taken alone, it does not fully explain the phenomena.

A consideration of the thickness of the chest wall in front will perhaps give us an explanation of the common view that the murmur is transmitted to the left from the *apex* instead of, as is the fact, from the whole left border of the heart. The pectoral muscles form a thick layer and offer more or less of an impediment to the transmission of vibrations to the surface over them. Outside the boundaries of the pectoral muscles the murmur is heard more distinctly because the chest wall is thinner, and this gives us an area which extends along the border of the pectoral muscle from the apex to the left and up into the axilla.

The removal of the obstruction of the pectoral muscles throws interesting light on the subject. It is easily accomplished. If the left arm is raised upward and is then laid across the face so that the forearm and elbow

lie across the eyes, the pectoral muscles are relaxed and may then be pushed inward toward the median line far enough to allow the bell of the stethoscope to be applied to the chest wall at or just outside the mammary line. We are now listening just outside the left border of the heart, with a chest wall as thin as it is farther down at the apex. This maneuver is best accomplished with the patient lying on the back, as better relaxation of the muscles is thus obtained. In females the breast may usually be carried out of the way in the same manner.

In this way we find not only that the murmur is audible all along the left border of the heart but that its intensity is greater at a given distance up from the apex than it is at the same distance to the left of the apex. Not infrequently the murmur is louder farther up the left border of the heart than at the apex itself. A very common place to hear the murmur loudest is in the third interspace. This is easily understood if we remember that we are now listening just opposite the mitral valve, the center of the left auricle, and the thickest part of the left ventricle—in other words, near the place where the vibrations should exist with greatest intensity. If we admit that the lung tissue is a fair conductor of vibrations, we readily explain why the murmur is heard so loud in the third interspace near the left border of the heart. Whether the murmur is heard loudest here or at the apex depends largely on the relative conducting power of the pulmonary tissue and the wall of the left ventricle in a given case.

We have followed the area of transmission of the mitral regurgitant murmur up the left border of the heart to the third interspace. In many cases it does not stop here, but we find the area extends still farther into the second interspace. Here we reach Naunyn's area and then the pulmonary area. I believe the medium of conduction here is the same as a little farther down, namely, from the upper part of the left auricle and the base of the left ventricle through the pulmonary tissue to the chest wall. It is quite possible that the left auricular appendix plays a part in the conduction of the murmur to this point, for it is the part of the left auricle which comes nearest to the surface of the chest. But by our explanation it is no longer necessary to assume that this appendix must touch the chest wall, or even that it must reach the anterior surface of the heart in order to have the murmur conducted to the second left interspace. The objection of Russell and his followers thus falls to the ground, while the conclusion of Naunyn and Balfour that this murmur may be of mitral origin stands, although their explanation that the left auricular appendix alone is the medium of conduction is, as Russell shows, "not proven."

Turning now from the conduction of the mitral systolic murmur beyond the area of the heart, we have still one area to consider over the heart itself. This may be called the "valvular area." It is about the junction of the third left costal cartilage and interspace with the sternum. Here we are directly over the anatomical position of the valves as they lie close together. It would seem almost superfluous to recall the fact that it is at or close to the valves beneath this area that all valvular murmurs originate, were it not that many very excellent text-books are careless about this matter, and say, for example, that the aortic systolic murmur originates at the aortic area. The chief medium of conduction from the valves to the front of the chest is the thick muscular walls at the base of the ventricles, in which the valves are imbedded. The path for conduction is direct, the distance is not great, and, as a result, any valvular murmur can as a rule be heard at this area and fre-

quently is louder and more distinct than at the more distant area corresponding to the valve at which it is generated.

We are not accustomed to pay so much attention to this "valvular area" because the fact that a murmur is heard here gives us little help in determining which valve is affected. Nevertheless, in studying the distribution of a given murmur this area should receive attention, for the murmur is sometimes heard here with marked intensity. This is true of mitral murmurs as well as others. Between this "valvular area" and the apex we find the mitral murmur transmitted with greater or less intensity according to the condition of the left ventricular wall beneath and the character of the lung and chest wall overlying the heart at a given point.

We are now prepared to consider the transmission of the mitral systolic murmur farther upward at the base of the heart and to the "aortic area" so-called. We have just seen that the vibrations are strong in the thick muscular base of the left ventricle. At this point the aortic begins and, remembering also the close connection of the aortic and mitral valves as well as the fact that during systole there is a continuous column of blood from the ventricle into the aorta, with the current flowing into the aorta, we should not be surprised to find the mitral systolic murmur carried into the aorta and audible at the aortic area. That it is thus carried to the aortic area may be frequently demonstrated, though I am not prepared to say how far it may be transmitted through the arteries beyond. The fact that mitral murmurs may be thus heard at the base and the mechanism by which this is brought about should be kept in mind when studying functional murmurs.

Mitral murmurs are frequently conducted over the chest far beyond the areas which we have considered, and the total area may include the whole chest. It is enough to say that the whole area of distribution depends on the intensity of the vibrations and the character of the conducting media. A further consideration of this topic is not necessary for the purposes of this paper.

We now come to the consideration of the so-called "anemic" murmurs. To say these murmurs are due to anemia to state a fact but to give no explanation of that fact. They are ordinarily included under the head of functional murmurs, indicating that they are not due to a pathologic condition of the valves or wall of the heart. This is not strictly true, for it is generally recognized that in some conditions of anemia the heart becomes dilated and the character of the murmur indicates valvular insufficiency as clearly as in organic disease. We shall consider only those murmurs which are heard in the second left intercostal space.

They are ordinarily ascribed to the pulmonary artery because they are heard in the "pulmonary" area. Since no lesions of the pulmonary artery are found, they are attributed to the condition of the blood itself. Is this interpretation correct? It certainly has not passed without challenge.

It is not my purpose to thoroughly review the discussion of this subject, but merely to mention a few explanations by well-known authorities to show that we need not feel bound to the view that the murmur originates in the pulmonary artery. Naunyn and Balfour contend that the murmur comes from the mitral valve. Russell asserts that it reaches the surface from the pulmonary artery. He does not, however, fall back on the state of the blood for an explanation, but thinks it might be caused by a dilated left auricle pressing upon and narrowing the lumen of the pulmonary artery, or that it might be a tricuspid regurgitant murmur transmitted

up the conus arteriosus. Gibson also attributes the murmur to tricuspid incompetence. Sansom thinks the murmur is due to fibrillary tremor of the muscle of the conus arteriosus below the pulmonary valves.

Let us turn to the testimony of the murmurs themselves. I hold with those writers who state that the most common site for anemic murmur is at the base of the heart, especially in the second left interspace. But although the point of maximum intensity is often here, a study of the area of distribution shows it to be comparatively rare to find the murmur limited to this area. By moving the pectoral muscle out of the way, as previously described, the murmur will very commonly be found to be transmitted around the left border of the heart from the second into the third and sometimes into the fourth interspace. In quite a large number of cases the murmur has as great or even a greater intensity in the third than in the second interspace. This at once recalls the conditions we found while studying the mitral murmur and it immediately raises a difficulty in accounting for our murmur, on the supposition that it originates in the pulmonary artery or at the tricuspid valve.

The similarity to a mitral murmur is increased when we find the murmur transmitted still farther to the apex of the heart. And when we find it also transmitted to the mitral area in the back, the conclusion becomes inevitable that we have to deal with a murmur of mitral insufficiency. That mitral regurgitation may occur in some conditions of anemia is recognized by all writers. The only new thing in this study is the demonstration of a continuous series of transition stages among the anemic murmurs from a location limited to the pulmonary area to that of a characteristic murmur of mitral regurgitation. May we not be dealing with the same murmur in all these stages? If not where shall we draw the line between the anemic murmur due to mitral regurgitation and one due to some other cause?

Of all locations in which the murmur is heard, that at the mitral area in the back is the one showing most conclusively that it is a mitral murmur, and this is also the area which throws the greatest difficulties in the way of accounting for the murmurs at any other orifice. Using this area in the back as a test, I was surprised to find that the murmur was audible here in many cases in which it did not reach the apex. In fact, I have repeatedly heard the murmur in the back when in front it was only to be heard in the second left interspace and faintly in the third interspace. In some of these cases it was fully as loud in the back as in the front, in others it was only faint and distant, but still distinct. These observations I have frequently had verified by others so as to eliminate the possible element of enthusiasm and expectancy which leads one to hear what he wishes to hear, whether it is present or not. The results of the observations on a large number of cases carried on for several months may be summarized by saying that careful observation will show a systolic murmur at the mitral area in the back in a surprisingly large proportion of the anemic murmurs, even when they are not heard at the apex. This is not a constant accompaniment of the anemic murmur, neither is it of the organic mitral murmur, for reasons before stated. It should be added that in many of the cases, including practically all cases in which the murmur failed to reach the apex, there was no demonstrable dilatation of the heart. If we accept these data as correct, we are inevitably forced to the conclusion that many of the so-called "anemic" murmurs are of mitral origin, whether they reach the mitral area at the apex or not.

It may be urged that I have simply reported a series of cases which apparently grade into one another, and that it is a mere assumption on my part that they have a common origin. What proof is there that we are dealing with the same underlying cause through these various gradations?

This proof is to be found by watching the same case pass through the gradations from one stage to another. In a number of cases which have started with an "anemic" murmur heard in the second left intercostal space, extending around the left border of the heart to the apex, and heard also in the back, the area of distribution has diminished as progress has been made toward recovery. There has been left only a typical "anemic" murmur in the second left interspace, and in favorable cases this also has disappeared. The order of disappearance has not always been the same. Sometimes it has disappeared first in the back, less often first at the apex. In front we sometimes find a gradual recession of the murmur from the apex toward the base, more often we find the area splitting into an area at the base and one at the apex and generally the area at the apex disappears before the one at the base.

It may still be urged that our murmur may be a composite one, that we have, to be sure, in some cases a mitral murmur but combined with it an anemic murmur at the pulmonary orifice, and that the two verge into one another. I should meet this objection first by citing those cases in which an apparently typical "anemic" murmur at the base is accompanied by a murmur in the back, but by no other evidence of mitral regurgitation. And then, as confirmatory evidence that murmurs in the second left interspace only may have the same origin as typical mitral murmurs, I will record some observations made upon long-distance runners.

On April 19 last I had the pleasure of assisting Dr. Harold Williams of Boston in an investigation of the effects of long-distance running carried out on the contestants in a Marathon race. This is a 25-mile road race, modeled after the course run by the ancient Greek who carried the news of victory from Marathon to Athens. The results of the observations were embodied in a paper read by Dr. Williams before the last meeting of the American Climatological Association.⁴ We need consider here only the effect upon the heart in causing murmurs.

The course of 25 miles was run by the winner in 2 hours, 54 minutes, 38 seconds—a little better than a mile in seven minutes. During the next hour twelve other contestants finished. These men were all healthy young adults. They were examined both before and after the race. The hearts of all were normal before the race, with the exception of a varying degree of physiologic hypertrophy due to exercise. No murmurs were heard before the race. The general effect upon the men may be described as one of extreme muscular exhaustion.

Here we had a number of human beings voluntarily submitting themselves to an experiment in which we could learn the result of pure muscular exhaustion of the cardiac muscle in healthy hearts. The exhaustion of the cardiac muscle was shown by a change from strong to weak action by lowered blood-pressure, as shown by sphygmographic tracings, by rapidity of action, and by a perceptible dilatation or distension of the heart.

Of the 13 men examined after the race, 11 had developed a cardiac murmur. The murmur was in all instances systolic. In every instance it was heard in the second left intercostal space. In two cases it was confined to this space. In three others it reached along the left border of the heart to the third or fourth interspace.

In the other six it was continued beyond this area to the apex, was transmitted a short distance to the left of the apex, and was audible at the mitral area in the back. In all cases the murmur was temporary and disappeared as soon as the heart had a little time to rest. It is also interesting to note that the two men who did not have murmurs were the winners, whose hearts were unusually strong, and better adapted to withstand the strain.

I think we are justified in assuming that the underlying cause of the murmur was the same in all these cases and was the weakness of the cardiac muscle from exhaustion. We may also assume that the mechanism of the production of the murmur was the same in all instances. Since, then, in the more characteristically marked cases it was a mitral regurgitant murmur we must assume that it was due to mitral regurgitation in all cases. Hence we have demonstrated by this experiment, first, that weakness of the cardiac muscle may cause mitral regurgitation, and second that a murmur thus due to cardiac weakness may exhibit all the gradations from what would ordinarily be accepted as a hemic murmur at the base to an undoubted mitral murmur at the apex.

It only remains now to show that weakness of the cardiac muscle exists in anemia, then our proof is complete that the anemic murmur is not due directly to the condition of the blood itself, but to a resultant mitral insufficiency. In the fatal cases of anemia the cardiac muscle is frequently found in a state of fatty degeneration, due to insufficient nourishment by the impoverished blood. Dilatation may or may not exist. It is inconceivable that the myocardium should remain perfectly normal through all the earlier stages of anemia and at a given point suddenly develop fatty degeneration. Various stages of impaired nutrition undoubtedly precede this. Impaired nutrition implies weakened muscular action. The mechanical results of a weakened myocardium will be the same whether the weakness is caused by poor nutrition or by tire from overexertion, as in the runners. In the runners we got mitral regurgitation, in the weak heart of anemia we should have the same condition.

It has been too often assumed that we cannot have mitral regurgitation unless we have actual dilatation of the cavity of the ventricle. Were this true, it would constitute a serious objection to our explanation of anemic murmurs, for such dilatation does not always exist. The studies of Ludwig and Hesse, however, together with the experiments of Roy and Adams, show that the complete closure of the mitral valve involves a much more complex mechanism than does the closure of the semilunar valves at the arterial orifices. The exact apposition of the mitral flaps is secured not alone by the force of the blood-pressure bringing the flaps toward each other, but by muscular contraction of the ventricular wall in narrowing the orifice and by the co-ordinated action of the papillary muscles in properly staying the flaps and preventing them from being forced too far. It is unnecessary to discuss here just what proportion of the proper adjustment is due to the muscle of the wall of the ventricle or to the papillary muscles. Probably a sufficient weakening of either force might allow regurgitation. In anemia both are probably affected, and the weakening of the muscle in anemia gives an adequate cause for mitral regurgitation, whether dilatation exists or not.

We may summarize our studies in this paper as follows:

Mitral systolic murmurs may not only be heard at the mitral area at the apex and extending toward the axilla,

but also at the mitral area in the back, along the left border of the heart, in the second left interspace, at the base, and at the "valvular" area.

Anemic murmurs are not confined alone to the pulmonary area and second left interspace. They extend by varying gradations around the left border of the heart, to the apex, and to the mitral area in the back, thus gradually assuming the characteristics of a true mitral regurgitant murmur. The transmission to the mitral area in the back may exist, whether the murmur is heard at the apex or not, and even in what appear in front to be typical anemic murmurs.

We find a dividing line between the so-called anemic murmurs and the mitral murmurs.

The presumption that these different gradations in the distribution of the murmur all have a common origin is strengthened by finding these different gradations successively in the different stages of the same case. It is practically proved by finding all these gradations in healthy hearts which have been subjected to the same severe exhausting strain, as in the runners mentioned.

Weakened muscular action of the heart exists in anemia as a result of poor nutrition. Weakened muscular action is an adequate cause for mitral insufficiency, whether dilatation exists or not.

The points which are new in this demonstration are the study of the area of distribution of these murmurs rather than the point of maximum intensity, the demonstration of the transition stages between the anemic murmurs and the mitral regurgitant murmurs, the demonstration of the frequency with which anemic murmurs are heard in the back, and the importance placed upon the transmission of murmurs by pulmonary tissue.

Other observers have noted that an anemic murmur is sometimes transmitted to the mitral area in the back, although they apparently have not appreciated the full significance of the fact. Barr reports that in 115 cases of simple chlorosis he found the murmur in the back as well as at the base and apex in 22 cases. He does not specify whether dilatation existed or not, and he mentions no cases where the murmur was heard in the back and at the base, but was absent at the apex.

Sansom says: "I have frequently noted a systolic murmur audible at the angle of the left scapula in uncomplicated anemia. In fact the murmur in anemia can answer to all the criteria of one due to regurgitation from organic causes. Such murmurs can be experimentally induced in animals by copious bleedings." He also quotes Macalister: "When an animal is bled till it is feeble, a murmur indicating regurgitation from the ventricle is heard with the heart sounds. You may inject proper saline solution to make up the normal quantity of circulating fluid, but still the regurgitation occurs. As the animal makes blood again, so that its muscles are again properly nourished, the murmur disappears."

Prince⁸ and McCollom⁹ have made interesting observations on the hearts of healthy men, examined for positions as firemen or policemen, where the murmurs were apparently due to excitement and were temporary. The murmurs were ascribed to mitral regurgitation due to imperfect action of the cardiac muscle. The murmur is similar to that found in the long-distance runners, already cited. The point in common in these cases of excited action, in the exhausted hearts of the runners, and in the anemic hearts is the failure of the muscle to do its part toward the closure of the mitral orifice. Prince found a systolic mitral murmur in 25 of 77 healthy men, and McCollom in 27 of 200 men. In 8 of the 25 cases noted by Prince, the murmur was heard also in the sec-

on the left intercostal space and sometimes can be traced upward to this point from the apex." In a number of cases in his table he notes that this area was not examined. "Sometimes the murmurs are heard in the back beneath the scapula—this was not always looked for." "They are sometimes heard equally loud at the junction of the fourth rib and sternum on the left side, i. e., over the mitral valve."

In reviewing the literature on this subject, it is not my purpose to give a complete bibliography—such a bibliography might well include all works which have been published on the heart. The following works have been of assistance in studying the subject:

DISCUSSION AS TO THE NATURE OF ANEMIC MURMURS AND REVIEWS OF THE VARIOUS THEORIES.

- Nannay: Berlin Klin. Woch., 1868, s. 189.
 Balfour: Clinical Lectures on Diseases of the Heart and Aorta, 3d ed. 1888. Lectures vi and viii. Lancet, London, 1871, vol. ii, p. 383. Edinburgh Med. Jour., vol. xxviii, pp. 183, 280.
 Russell: Edinburgh Med. Jour., 1882, vol. xxviii, pp. 130, 403. British Med. Jour., 1883, vol. i, p. 1053. Investigations into Some Morbid Cardiac Conditions. Edinburgh, 1886, pp. 45, 53, 66, 88.
 Bramwell: Diseases of the Heart and Thoracic Aorta, Edinburgh, 1884, pp. 187, 207. A Lecture on the Functional Cardiac Murmurs of Anemia. British Med. Jour., 1883, vol. i, p. 1213.
 Sansom: The Diagnosis of Diseases of the Heart and Thoracic Aorta, London, 1892, chapters xxxv, xxxvi, xliii, xlv.
 Gibson: Diseases of the Heart and Aorta, 1898. (Cardiac Weakness), pp. 627-634. (Mitral Regurgitant Murmurs), p. 546. (Conduction of Murmurs), pp. 166, 171, 172.
 Ball: Some Remarks on the Acoustic Phenomena Produced by the Flow of Fluids in Tubes, and also upon the Site and Mechanism of Cardiac Functional Murmurs. N. Y. Med. Record, 1884, vol. xxv, pp. 383-398.
 Garland: Theories Regarding the Mechanism of the Inorganic Cardiac Murmurs. Boston Med. and Surg. Jour., vol. cix, pp. 25-27.
 Shattuck, F. C.: The Diagnosis of the So-called "Functional Murmurs." Boston Med. and Surg. Jour., 1883, vol. cix, pp. 28-30.

ANATOMICAL RELATIONS.

- Savory: Observations on the Structure and Connections of the Valves of the Human Heart. Lancet, 1852, vol. ii, p. 420.
 Sibson: Reynold's System of Medicine.
 Bramwell: Diseases of the Heart and Thoracic Aorta.
 Key: Clinical Anatomy of the Human Heart. Am. Jour. Med. Sci., 1898, vol. cxv, pp. 428-438.

SINGLE TOPICS.

- Tyndall: Lectures on Sound, 1867.
 Ludwig and Hesse: Beiträge zur Mechanik der Herzbewegung, Archiv. für Anat. and Phys., 1880, p. 320.
 Macalister: Remarks on the Form and Mechanism of the Heart. British Med. Jour., 1883, vol. ii, p. 820.
 Royand Adams: Remarks on the Failure of the Heart from Overstrain. British Med. Jour., vol. ii, p. 1321.
 Fenwick and Overend: Report on the Contraction of the Papillary Muscles in its Relation to the Production of Certain Abnormal Cardiac Sounds. British Med. Jour., May 23, 1891.
 Heiler: Tricuspidalgeräusche: Localisation des Systolischen Mitralgeräusches. Wien. Klin. Woch., 1887, No. 7, pp. 161-165.
 Ewart: Clinical Lecture on Heart Sounds and on Accuracy in Cardiac Auscultation. Lancet, London, 1893, vol. i, pp. 1241-1246. Note on the Auscultation of the Second Sounds of the Heart. Lancet, London, 1894, vol. ii, pp. 789-791.
 Ringer and Phear: The Clinical Significance of Accentuated Second Sound. Lancet, London, 1894, vol. ii, p. 729.

REFERENCES.

1. Clin. Lect. on Diseases of the Heart and Aorta, 1898, p. 217.
2. Diseases of the Heart and Aorta, 1898, p. 165.
3. Ibid, p. 546.
4. Also reported in Phila. Med. Jour., June 3, 1899.
5. Barr, Alfred G.: Clinical Observations on the Cardiac Bruits in Chloroses. Am. Jour. Med. Sci., 1891, vol. cii, p. 347.
6. Sansom, A. E.: Diagnosis of Diseases of the Heart and Thoracic Aorta, 1892, p. 341.
7. Macalister: Remarks on the Form and Mechanism of the Heart. British Med. Jour., 1882, vol. ii, p. 825.
8. Prince, Morton: N. Y. Med. Record, 1889, vol. xxxv, p. 421.
9. McCollom, J. H.: Boston Med. and Surg. Jour., 1889, vol. cxx, p. 103.

DISCUSSION.

DR. NORMAN BRIDGE of Los Angeles.—I do not know but Dr. Arnold, in that part of his paper which time did not permit him to read, may have referred to the point I have in mind. But as I recall it he took no account of the possibility of the air in the bronchi being capable of transmitting the heart murmurs to the back. I do not recall any one having referred to that. It may not be a matter of consequence, but it seems to me that, in auscultation of lung troubles and diseases and disorders of the pleura, we should and do take into account this element largely, and find it extremely useful from the standpoint of diagnosis, proving that sound, voice and air are transmitted through the air in the bronchi to the walls of the

chest; variations of these sounds so transmitted are matters of great moment in the diagnosis; and it seems to me that heart murmurs must be transmitted too in this way as truly as by means of lung tissues. That may account to some degree for the otherwise unaccountable loudness of the mitral murmurs at the back.

DR. HORACE B. ARNOLD of Boston.—Replying to Dr. Bridge I would state that I used the term "pulmonary tissue" in the general sense. I usually include transmission of vibrations through the air in the bronchi, i. e., its divisions after entering the lung, and include it as pulmonary tissue. I consider conduction in the lung as possible by conduction through the chest wall or spine.

MYOPIA.*

OPERATIVE TREATMENT IN HIGH DEGREES THEREOF.

BY ALLEN T. HAIGHT, M.D.

Professor of Ophthalmology, Chicago Clinical School; Attending Eye and Ear Surgeon, Cook County Hospital and German American Hospital; Oculist and Aurist to the Illinois Industrial School for Girls; Member of the American Medical Association, etc.
 CHICAGO.

The advance of civilization has brought many advantages and blessings to the human race but has also furnished extra care, extra requirements on mentality, and necessarily a decided increase in the use of the eyes, especially for near work. This constant and continued use of the eyes for near work is one of the most potent factors in the production of axial myopia. By axial myopia we mean a receding of the posterior portion of the eye, making the distance from the cornea to the macular greater than normal. This is brought about by the combined action of accommodation and convergence.

The condition is most frequently acquired by children compelled to do a great deal of studying, at close range, perhaps in very poor illumination, and also by persons engaged entirely in fine work, which they hold close to the eyes in order to get a perfect image on the retina. The accommodation is used to a greater degree than normal, and the action of the internal recti muscles is increased so far as to fix both eyes upon the near work, thereby bringing a strain directly on the sclera at the temporal side of the head of the optic nerve. Under this continued tension or stretching the sclera at this point soon assumes a condition of inflammation, and gradually we have a chronic sclerochoroiditis which is followed by an atrophy and thinning of the sclera and afterward by a gradual separation from the optic disc. In this way that portion of the eye between the optic disc and the macula glauca is weakened and is forced back by the normal tension of the eye, and we have established a change in refraction known as myopia. It is not necessary to state here that this is not the only cause of myopia. It is, however, the most frequent cause of myopia of high degrees.

Heredity plays a very important part in progressive myopia. It is true that the children of myopic parents are rarely, if ever, born near-sighted. On the other hand they have an undoubted predisposition to myopia, since they are prone to inherit the anatomical peculiarities of their parents, and if forced to continue studies or to enter occupations requiring near work they usually develop myopia.

Experiments have been made with children of normal eyes not predisposed to myopia and children with normal eyes predisposed to myopia, that is, whose parents one or both have been myopic, with the result that the greater percentage of the latter under close work in school have developed myopia.

* Read before the Illinois State Medical Society, May, 1899.

Dr. B. Behim Schwarzback has reported in the *British Medical Journal*, examinations of the eyes of 1853 black people, mostly children, natives of towns in the middle province of South Africa, with the astonishing result that only 87 out of this number had weaker sight than the normal sighted Caucasian, the others possessing acuteness of vision equal to or greater than the normal sight of the European. The subnormal sight mentioned was due to myopia acquired at school, thus proving that the detrimental causes which produced short sight in children of the white race have the same effect on the optic organ of the dark race.

If it were possible to have made an examination of the eyes of the aborigines of this country, no doubt the percentage of acuteness of vision would have been similar to this result, as in our day the great acuteness of vision of the American Indian is well established.

Since in this paper we shall discuss operative treatment of high degrees of myopia, we will not refer to myopia of less than 12 diopters, further than to suggest a régime for myopia of less degree. How often the oculist hears the parents or guardians of children who come under his care remark that the child is a regular book-worm and reads continually at every opportunity, and prefers reading to playing out of doors with other children. Now, the reason for this will, with very few exceptions, be found in the fact that the child is myopic or near-sighted and not overstudious, and derives enjoyment out of reading because he can see to read and cannot see in the distance well enough to enter in the outdoor pleasures of other children of his age. The parents of these children, laboring under the impression that they are very studious and exceptionally bright—and they are brighter than most children of their age—will strain a point to give them superior educational advantages and fit them for some occupation that will require life-long use of the eyes for close work, and think they are doing their duty. The fact is they are putting that child in the best possible position for him or her to develop a progressive myopia of high degree and possibly entire loss of useful vision, if not complete blindness. These children should be carefully refracted, deprived of as much reading as possible and placed in some occupation best calculated to avoid close application with the eyes or much work in a stooping position.

Operative treatment of myopia consists of the removal of the lens from the eye, and by so doing we must consider the following: 1. We reduce the myopia from 10 to 16 diopters, according to the eyes of the patient. 2. We improve distant vision and impair near vision. 3. We destroy the power of accommodation. 4. We stop the progress of myopia. 5. We materially lessen the probability of complete blindness resulting from choroiditis or detachment of the retina.

For people who are compelled to do near work the operation offers few advantages, but there are many who will derive great benefit and advantages from the operation. The operation of removal of the lens for myopia has been performed with gratifying results many times in Germany and Austria, frequently in France and England, and a comparatively few times in the United States. It is true we do not find as large a percentage of myopia in this country as in Europe, but there are very many people in America who would derive great benefit from the operation. The first suggestion of operative treatment for myopia is found in the writings of Abbe Desmonceaux in 1776, quoted by Otto. Adolph Weber, in 1858, at the Ophthalmological Society of Heidelberg, suggested the removal of the lens

for myopia and stated that he had frequently performed the operation with success. In the discussion which followed Von Graefe spoke against it. Six years later, Donders ridiculed it in his writings. Nothing more was heard of the operation until Fukala published his paper in 1889. Vacher, before the French Society of Ophthalmology, on "The Treatment of Progressive Myopia and the Prevention of Separation of the Retina by the Extraction of the Transparent Lens," claims to have made the operation before those of Fukala; however, Vacher brought forward the removal of the transparent lens as a means of suppressing the myopia. He gave the results of seven operations in patients, all of whom were over 50 years of age, with myopia of 15 diopters and upward, and marked or advancing staphyloma.

Pflüger, before the congress at Rome in 1894, stated that he had performed dissections of the lens in one eye on thirty patients affected with high myopia. The degree of myopia varied from 10 to 20 diopters, the age of the patients from 10 to 40 years. In all the cases sharpness of vision was increased. In many cases it was doubled and even tripled. No evil results occurred in any of his cases.

Von Hippel, in a paper read before the Ophthalmological Society of Heidelberg, reports his results of 60 operations, the degree of myopia varying from 10 to 20 diopters, and the ages of the patients from infancy to 50 years. He found that choroidal lesions, even when extensive, are not aggravated by operation. In all cases dissection was practiced after an installation of atropin. At the expiration of about a week a softened mass of lens was evacuated without iridectomy.

In some instances vision acuteness rose to $\frac{1}{6}$, and in most cases it was from 4 to 6 times better than before the operation.

Wrag reports 123 cases of myopia, 246 eyes, with especial reference to points upon which the advisability of operation of removal of the lens was based. Of the above number 38 cases including other cases of detached retina had vision less than $\frac{1}{36}$ in one eye and 10 had less than $\frac{1}{36}$ in both eyes. He considered that his figures admitted of three deductions: that the vision was invariably less in the fourth decade than in the third; that retinal detachment is less to be feared than the changes in the retina and choroid; and that it is not necessary to regard every myopia of 12 diopters and upward as hopelessly drifting to a detached retina and blindness.

Julius Archer has collected reports from various quarters, of about 400 cases which have been operated on up to 1895. In most of the cases the myopia existing at the time of the operation was arrested in the eye operated on, during which time it continued to advance in the other eye on which no operation had been performed.

Goldzieher said that the operation was a wondrous advance in ophthalmology and in most of his cases perfect vision without glasses was obtained.

Professor Eucls of Vienna, discussing operative treatment of myopia, says: "In all people where a high degree of myopia exists an application of lenses, even when the retina and choroid are sound, is proved a practical failure." He suggests the removal of the lens as a "radical cure." Since that time he has shown many excellent results that have convinced oculists of its utility.

F. Otto reports the result of 85 cases of high myopia operated on by dissection, with subsequent removal of the lens by linear operation.

Professor Noyes remarks of myopia, reviewing over

1700 cases operated on in private practice, that it is found that 7.6 per cent. exceed 10 diopters. In these it was rare to find vision above .4; in many instances it was much less.

In operating on such cases two serious considerations arise: 1, an intraocular hemorrhage; 2, detachment of the retina. A third possibility cannot be entirely ignored, viz., a low grade of iridocyclitis, produced by traumatism causing turbidity of the vitreous and defeating the purpose of the operation. While hemorrhage may be spontaneous it is not induced so readily by needle operation as by section, for extraction and published reports do not specify this accident. On the other hand detachment of the retina is the misfortune chiefly dreaded.

Darier, before the International Congress of Moscow, gave an account of 142 cases operated in his practice, in 85 per cent. of which a distinct improvement in vision could be shown. In 10 per cent. vision was stationary and in 5 per cent. the eye was lost. This occurred in three cases from an infectious process and in four cases from the detachment of the retina.

According to Distler the operative treatment of high myopia is almost without danger. The acuteness of vision is improved and binocular vision is restored. Loss of accommodation is not a serious disadvantage. The danger of hemorrhage or detachment of the retina is not lessened by the operation, nor is it increased.

Gelpke and Bihler operated on every myope whose vision could not be improved sufficiently with glasses. They have operated on 74 eyes, with bad results in 3.4 per cent. The average increase in acuteness of vision was fivefold.

Meighan, Sweigger, Alt of St. Louis, Sattler, Panas, Liudsay, Johnston, Prof. Szili, Drussart, Morren, Edward Jackson, Frost, and others have reported cases of operation with a great percentage of improvement in vision and decrease in development of change in the fundus.

Grosz thought the operation should still be held in reserve and that we are not justified in operating in every case with confident hope of uninterrupted success. Most operators advocate operating first by discission and subsequently by extraction of the opaque lens mass by linear incision without iridectomy. Some, however, operate by a simple repeated needling.

Dr. H. E. Stafford reports three cases of extraction of the clear lens for myopia. He made an ordinary extraction without any iridectomy, lacerating the capsule of the lens with the point of the knife as it passed across the anterior chamber. The lens was delivered by the lid. The results of these cases fully convinced Dr. Stafford that the operation should be done without attempting artificial ripening.

In my own experience I have operated upon several eyes, two by dissolution of the lens by needling and five by discission and subsequent extraction of the soft lens without iridectomy and am decidedly in favor of the latter operative procedure for several reasons: 1. The length of time required is in some cases less than one-third of that required by the first procedure, which is a very important point in your consideration of the patient. 2. There is less danger of adhesions forming between the iris and the zonula. 3. There is less danger of setting up a low grade of iridocyclitis from continued pressure of the lens substance on the ciliary body.

The results I have obtained in my operations have been highly satisfactory to me and to my patients, and I do not hesitate to advise operation in cases where myopia

exceeds 12 diopters in either eye, in patients between 10 and 30 years of age, confidently expecting that I shall materially improve the vision of by far the greater percentage operated on.

CASE 1.—Miss O., aged 12 years, a school-girl, with obscure family history, was seen in March, 1897. Vision in right eye was 10/200, left eye 2/200. Ophthalmoscope showed marked staphyloma posticum in both eyes with chorochoritis more marked in the left, refraction—14 diopters in right and—16 diopters in left. Glasses did not materially improve the left eye and the best vision obtainable in the right was 20/100. The patient was unable to perform near work, with or without correction, with left eye on account of condition of fundus. Atropin was instilled in the left eye and discission was performed under cocaine anesthesia, followed by cold applications made to the eye to prevent inflammation from too rapid expansion of the lens matter. Four needlings were necessary to complete absorption, and a period of five months intervened before the pupillary space was clear and the eye pronounced well. Examination of the eye in July, 1897, showed the vision to be 20/80 or 1/4, a very satisfactory increase from 1/100 before operation. The inflammation of the fundus had almost disappeared and patient was able to read fine print with a +5 sphere. Examination of the eyes in March, 1899, shows no change in the left but vision of the right eye is only 5/200, due to increased fundus changes.

CASE 2.—Mr. F., aged 18 years, a schoolboy, with normal heredity, was seen in April, 1897. He had myopia of 18 diopters in the left eye, 23 diopters in the right, and posterior staphyloma in both eyes. No further fundus changes were present. Vision O.D. 5/200, O.S. 4/200. Best vision obtainable with glasses was 20.80 in right with—15 diopters and 20/100 in left with—18 diopters. Left eye operated with discission April 20, followed by linear incision and extraction of softened lens mass ten days later. Some lens matter remained in eye and needling was done five weeks later. Three months after operation vision was 20/30 for distance and patient was able to read with—3D. Right eye was operated on in similar manner on September 10 by discission and later by extraction of lens with no final needling required. Vision in this eye was 20/40+ and patient could read 20/30+ with—1.50, axis 120° and fine print with +2D. Patient had binocular vision after operations.

CASE 3.—M. G. F., a bookkeeper aged 22 years, was seen in June, 1898. His father was myopic. The patient had myopia of 8 diopters each eye. Ophthalmoscope showed—15 diopters in each eye with posterior staphyloma and hyperemia of retina. Vision in each eye was 5/200. Vision in right eye improved to 20/100 with—15D. Vision of left eye improved to 20/100 with—12 C.,—3 cyl., axis 180°. Patient's right eye operated first, followed two months later by operation on the left—both by discission and extraction of lens mass without iridectomy. Recovery was uneventful except for formation of secondary cataract in each eye which required needling. Patient had 20/40 vision in each eye after operation and was able to do all ordinary work with glasses, but required a +3 in right and +4 in left for reading. A peculiar feature of this case was the disappearance of 3 diopters of astigmatism from left eye after operation.

CASE 4.—Miss M. J., aged 11 years, a schoolgirl, with obscure family history, was seen in December, 1898. Ophthalmoscope showed myopia of 10 diopters with right eye, and 16 diopters in the left. There was beginning posterior staphyloma in the right eye, marked in the left. Vision O.D. 10/200, vision O.S. 4/200. Vision O.D. 20/30 with—8D. Vision O.S. 20/200 with—14D. The left eye was operated on by discission and lens mass followed to absorb. Five needlings were necessary for complete absorption and nearly six months' time elapsed. The best vision obtainable in this eye was 20/60—and patient has a slightly irregular pupil. She is able to read with a +5D. The right eye will be operated on if the myopia increases.

BIBLIOGRAPHY.

- Fukala: Archiv für Ophthalmologie, Bd xxxvi, 1890, p. 290.
 Meighan: Glasgow Medical Journal, 1894, vol. xii, p. 168.
 Sweigger: Annales d'Oculist., 1893, p. 393.
 Pfleger: Annales d'Oculist., 1894, exi, p. 382.
 H. E. Stafford: New York Polyclinic, 1894, p. 172.
 Von Hippel: Annales d'Oculist., cxiv, 1896, p. 222.
 Sattler: Annales d'Oculist., 1895, p. 222.
 Edward Jackson: Ophthalmic Record, 1898, vol. vii, p. 55.
 Lindsay Johnson: Trans. Ophthalmic Soc. of the United Kingdom, vol. xv, 1895, p. 239.
 Alt: American Journal of Ophthalmology, June, 1895.
 Wray: British Medical Journal, 1895, vol. i, p. 304.
 Sattler: Archives of Ophthalmology, 1895, vol. xvii, p. 500.
 Weeks: Medical News, 1896, vol. 1212, p. 496.

Paras: Gazette des Hôpitaux, Paris, 1896, vol. Lixix, p. 1461.
 M. Salzman: Annals of Ophthalmology, 1897, vol. vi, p. 437.
 Schanz: Graefe's Archiv, vol. xii, p. 109.
 Julius Ascher: Deutsch. Beit. zur Augenheilkunde, Heft xxliii, p. 21.
 Prof. Szili: Vienna Correspondent, Medical Press, 1896, p. 452.
 Siklosy: Vienna Correspondent, Medical Press, 1896, p. 452.
 Goldzieber: Vienna Correspondent, Medical Press, 1896, p. 452.
 Droussart: Rec. d'Ophthalmologie, June, 1897.
 Meester: Die med. u. operativ Behand. kurzsichtiger Storungen, Wiesbaden, 1897.
 F. Otto: Archiv für Ophthalmologie, Bd. xliii, Lief. I und iii, 1898.
 Noyes: Archives of Ophthalmology, 1898, p. 453.
 Edward Jackson: Internat. Medical Magazine, 1898, vol. vii, p. 140.
 Frost: Edinburgh Medical Journal, 1898, vol. xli, p. 296, p. 452.
 Roland Pope: Vienna Correspondent, Medical Press, 1896, p. 450.
 Grosz: Vienna Correspondent, Medical Press, 1896, p. 452.
 Prof. Fuchs: Australasian Medical Gazette, 1897, vol. xvi, p. 551.
 M. Lagrange: Annale d'Oculistique, 1898, vol. cxix, p. 215.
 Adolph Weber: Edinburgh Medical Journal, 1898, vol. xli, p. 324.
 Daries: Archives of Ophthalmology, 1898, p. 402.
 Hirschberg: Archives of Ophthalmology, 1898, p. 106.
 Distler: Archives of Ophthalmology, 1898, p. 120.
 Gelpke and Bihler: Archives of Ophthalmology, 1898, p. 120.

DISORDERS OF NERVOUS SYSTEM*

ACCOMPANYING GYNECIC DISEASES.

BY R. S. HILL, M.D.

Councillor of Alabama State Medical Association.
 MONTGOMERY, ALA.

The progress in the science of medicine precludes the possibility of the entire field being properly surveyed by one mind, therefore specialists are necessary for the satisfactory cultivation of its soil, much of which remains yet to be upturned by the ploughshare of research. No one, however, is fitted for a specialist who is not well grounded in the general subjects of anatomy, physiology and pathology, for a clear appreciation of the relationship and interdependence of the various tissues of the body is necessary in order to judge of the effect produced on the function of structure of one tissue by disease of another. This being manifestly important in reaching a correct diagnosis, Battey's and Tait's opinion that the removal of normal ovaries would cure nervousness, not only had no physiologic justification, but showed a total disregard for the general principles of physiology. I feel safe in saying that our present knowledge will not tolerate a suggestion that the normal function of any organ can disorganize that of another, notwithstanding the seeming exception of vomiting in pregnancy.

Viewing the human system as a most delicate and complicated piece of machinery, its cells differentiated into many groups called organs and glands, it is readily understood how the impairment of one or more of the organs may derange the entire system. I recognize, however, the fact that the female genital tissues are not necessary to individual life and, therefore, an exception may be taken in their case; nevertheless, I believe the connection between these parts and the rest of the system is so intimate and intricate as to justify the opinion that gynecic diseases and injuries are primarily responsible for many nervous disorders. I am free to admit that abnormal nervous manifestations may present themselves in a patient with disease of some portion of her genital tissues, without there existing the relationship of effect and cause; and I confess that I know of no way of reaching a positive conclusion as to when the gynecic disease is producing the nervousness.

Turning our attention to the nervous system, we find a marvelous anatomic structure, surpassed only by its wonderful physiologic action. Its cells possess a most delicate sensitiveness for the perception of impressions or impulses, an inconceivable capacity of association for their analysis, and an incomparable retentive force for their preservation. There exists between the cells a per-

fect state of equilibrium for uniformity in action. While these faculties are, practically, the possession of inheritance, the degree of perfection or accuracy with which the normal cell functionates is in proportion to its vitality, which is largely dependent on the quantity and quality of nourishment assimilated. As for the quantity, I hardly think the withdrawal of nutriment from the nerve-cells can directly and alone cause a disorganization of the functions of the cerebral cells, to the degree called insanity, but a large number of the cases of so-called nervousness are produced in this way. In regard to the quality of nutriment certain toxic principles entering the circulation and carried in sufficient quantity to the psychic cells will overthrow their power of correct analyses or reasoning, and cause what I understand to be functional insanity. There is another factor in the production of nervousness, by gynecic abnormalities, which I regard as too potent to be lost sight of, viz., the moral shock or effect produced on a patient by the recognition of the existence of an abnormal condition of her genital parts. I have seen this most severe in old complete lacerations of the perineum, where the total loss of the restraining function of the anal spincters acted as almost a constant reminder to the patient of her unfortunate condition.

A few words at this point may not be amiss on how impressions and conclusions are retained by the nerve-cells. If we admit, as we must, that these cells receive impressions, convert them into ideas and retain not only the primary impulse but also the idea, we must be prepared to accept the theory, as the most reasonable one so far presented, that there is produced a material change in the organized matter of each cell, every time it responds to an impulse, be it normal or abnormal impulse, and in accordance with the laws of direct cellular heredity, this material change passes, with decreasing distinctness, unless there is a repetition of the primary stimulus, through generation after generation of cells, until it is finally lost. While it is difficult for us to conceive of a material change in the nerve-cells to represent every experience, conscious, or unconscious, had by man, yet this is no harder task, nor is it more incredible than the crediting in the ovum of the mother and the spermatozoa of the father, some material representative of every class, if not of every cell, in the organisms of these respective individuals, and to deny this would be to destroy the theory of physiologic heredity and leave us in the confusion of ignorance. If we are correct in regard to the manner in which nerve-cells retain impressions and ideas, we have a physiologic explanation for the prognoses in nervous derangements, being largely determined by the length of time the disorder has existed.

However much we would like to prosecute our studies in this inviting field, we must forego our inclination, and approach nearer the heart of our subject by considering the nervous connection between the genital parts and other tissues. Byron Robinson says the uterus has twenty or more nerve cords running to the solar plexus, and that it, of all organs, "has the most intimate and profound connection with the cerebrospinal axis and abdominal brain." "That the connection of the genital and urinary system with all the great nerve-centers, is intimate and very large." I think anatomist and physiologist have proven beyond all question. If this is true, we have only to call to mind the laws of reflex action to understand how an irritation can pass from the genital system, through the hypogastric to the solar plexus, and by it be sent, with more or less force, over the numerous nerve-tracks to the viscera. As every impulse passing over a

* Read before the Alabama State Medical Association, April, 1899.

centrifugal nerve causes the cells which the nerve supplies to perform their characteristic function and as no cell, or set of cells, can properly discharge its duty without a period of rest, therefore, a more or less constant irritation from diseased genital tissue, traveling, as indicated above, to the viscera, will sooner or later overtax the cells concerned in the preparation of food, and thus cause an improper supply of nourishment to be furnished for assimilation. Being acquainted with the intimate connection between the sympathetic and the cerebrospinal nervous systems, and knowing the readiness with which an irritation may be transmitted by reflex action from one to the other, should we not be inclined at least to speculate on the possibility, if not the probability, of an irritation from the genital tissue traveling through the hypogastric or solar plexus to some of the higher cells of the cerebrospinal system, disorganizing their function to the extent of causing objective abnormal nerve manifestations?

With this mere summary of what appear to me to be plausible theories, I will report a few cases which have been under my care.

CASE 1.—Mrs. B., white, multipara, 40 years of age, nervous and eccentric, family history good, presented endometritis, incomplete laceration of the perineum of several years' standing, and relaxation of the posterior vaginal wall. Curettage, posterior colporrhaphy and perineorrhaphy were performed. The bowels were moved on the second day. On the third day nervousness began to increase, and continued to do so for a week, at the end of which time she was quite insane; suspicious of her family and attendants; speech irrational and disconnected; unable to recognize her surroundings; sleep little and disturbed. Bromid of soda, chloral and sulphonal were given at different times to promote rest, but had little or no effect. Her suspicions of evil designs on the part of her attendants caused a great deal of difficulty in giving nourishment, to say nothing of medicine. Efforts were chiefly directed toward keeping the skin, kidneys and bowels active. Digestion was very much impaired from the beginning. At the expiration of four weeks she began to improve and made a rapid and complete recovery; result of operation good.

CASE 2.—Mrs. P., white, widow, multipara, 38 years of age, anemic and nervous, family history negative as to nervous disease, had complete laceration of the perineum ten years previous to coming under my care. A fibroid tumor the size of an orange was present in the soft tissue between the uterus and bladder. Menorrhagia and metrorrhagia were severe. Curettage and removal of tumor through the vagina was done. Ten days afterward the perineum was repaired. The bowels were moved by purgative and enema, on the third day. Nervousness began to increase before the bowels acted and continued to do so until she became entirely irrational. The bowels were kept active, and nourishment and tonics freely administered. In the third week some mental improvement was noticeable, and by the sixth week she had entirely recovered. The result of the operation was good. The patient has gained in weight and at this time is in perfect health.

CASE 3.—Mrs. G., white, multipara, 27 years old, anemic and nervous but with no family history of nervousness, was reported to have had "several fits." The perineum was completely lacerated at the first confinement, six years ago, but she had been in good health up to that time. Four unsuccessful efforts to repair laceration were made before she came under my care. I repaired the tear and the third day afterward moved her bowels. Her nervous condition showed a decided increase on the

fifth day, and on the tenth day she was thoroughly irresponsible; constantly complained that some member of her family was dead; would get out of bed immediately on being left alone. Bromid of soda and sulphonal were used to cause sleep, but had no effect. The bowels were kept open and stimulants and nourishment freely administered. Digestion was very much impaired before and after operation. Mental improvement began at the end of the third week and continued to a complete and hasty recovery. The result of the operation was all that could have been desired. When last heard from her physical and mental health were good and there have been no more fits.

CASE 4.—Mrs. S. J., white, widow, multipara, 31 years old, with no family history obtainable, anemic and nervous, presented endometritis, growths in the vagina and bladder, hemorrhoids and complete laceration of the perineum. I curetted, removed the growths from the vagina and bladder and tied the hemorrhoids, and the patient progressed nicely. At the end of the second week, I repaired the lacerated perineum. The bowels were moved, as is my custom in these cases, on the third day. Nervousness was decidedly worse on the fifth day and on the ninth she had hysterical coma. The abnormal nervous manifestations continued, with more or less violence, two weeks, when change for the better was recognized. The same general plan of treatment was adopted in this as in the preceding cases and recovery was complete in seven weeks. The perineum united perfectly and she has experienced good health since she was discharged.

CASE 5.—Mrs. S., white, married, 30 years old, multipara, gave history of her father, a drunkard; mother weak-minded, and one brother, about 20 years of age, very peculiar. The patient was anemic and nervous; her digestion was very poor; she had complete laceration of the perineum, bilateral lacerated and hypertrophied cervix uteri, and endometritis. I curetted, repaired the lacerated perineum, and amputated the cervix. This patient went through the same experience as those above reported. Her general health continued to improve after her return home, but her nervousness remained practically the same as it was before she was operated on. I lost sight of her for twelve months or more, but during the latter part of last year she was brought back to me in a very much impaired mental and physical condition, when I prescribed a tonic for her and advised that she be kept under close observation or sent to an insane asylum.

Here we have five patients, to all appearances similarly affected, and four recovered and are now enjoying good health, while the fifth improved in physical health, but experienced no decided or lasting effect on her nervousness, and is now, after a little more than a year, presenting alarming signs of complete mental derangement. What were the factors in these patients acting as causes in the production of the nervousness before and the acute insanity after operation?

1. The knowledge of the existence of abnormal pelvic condition caused a more or less continued mental worry, which depressed the general vitality, and the function of digestion shared in the loss of force.

2. By reflex action abnormal nerve impulses were sent from the seat of the primary trouble to the abdominal viscera, disturbing their function more or less.

3. The slight mental and physical shock produced by the operation further lowered the vitality and impaired the power of digestion.

These all combined rendered the intestinal tract incapable of doing its work, as a result of which fermentation took place in the intestines, producing toxic princi-

ples. These toxic principles, being conveyed in sufficient force to the already anemic psychic cells, rendered them incapable of correct reasoning. Another factor in the fifth patient was the inherited nerve weakness from both parents, which I believe is responsible for her present condition.

CASE 6.—Mrs. J., white, married, 35 years of age, multipara, with good family history, had endometritis, bilateral lacerated and hypertrophied cervix uteri, and was anemic and nervous. She also suffered with dyspepsia and frequent attacks of intestinal colic, and experienced no appreciable improvement from several years of medicinal treatment. I advised curettage and amputation of the cervix, telling her, however, that I could not promise that the operation would prevent the intestinal colic; I could only say that it would relieve the local condition, which was probably partially responsible for her ill health. She submitted to the operation and remained at the infirmary about four weeks. Since her return home, several months ago, she has improved in general health and has only had one attack of colic, whereas, before the operation she had them almost daily.

This is a case in which I think we are perfectly justified in saying that impulses were sent from the diseased uterus through the hypogastric to the solar plexus, and from the latter to Meisner's and also to Auerbach's plexus, the former regulating the secretions and the latter the peristalsis of the intestines. Thus both these functions were disturbed, causing spasmodic intestinal pain and imperfect digestion of food. An improper supply of nourishment being furnished the system, anemia and nervous irritability developed.

CASE 7.—Mrs. P., white, married, multipara, 32 years old, but very much reduced in health, was extremely nervous and irritable. She had one sister insane. Two years previous to her coming to me she had been confined in an insane asylum for three months. Vaginal examination revealed purulent ovaries and tubes, which were subsequently removed, without liberating the pus. The second day after the operation she became violently insane, fought the nurses and made every effort to get out of bed, which was prevented only by force. An attendant had to be constantly by her to prevent her doing herself harm. No suppuration followed the operation and no elevation of temperature, except immediately following her struggles to get out of bed. Her mental condition showed signs of improvement in the fourth week, and at the end of the seventh week was practically as it was before the operation. Her general health improved very much. When last heard from, eight months after her discharge, she had again lost her mental faculties and her husband was preparing to send her to an insane asylum.

CASE 8.—Miss W., white, 22 years of age, father dead, and mother an epileptic mentally incapable of caring for herself, was "led astray" and contracted gonorrhoea. She had been confined to her bed several months previous to my being called to see her, was very much emaciated and complained of pain in her pelvic cavity. On examination I found her pelvis filled with an immovable mass. As the only chance of saving her life, I proposed abdominal section, which readily received the sanction of her physician and herself. I opened the abdomen and found, as I had apprehended, numerous and dense intestinal and omental adhesions, which, on being separated, revealed a number of pus-pockets. The ovaries and tubes were suppurating foci, and I removed them, washed the pelvis out and inserted a gauze drainage. The patient made an uninterrupted recovery and was sent home. Two or three

weeks later I was summoned to see her and she informed me that after eating she experienced "a lumping and gripping in the lower part of her abdomen." This gradually increased, until there was almost a complete intestinal obstruction. I advised that the abdomen be opened for the purpose of relieving the intestinal obstruction by destroying the adhesions, which I was confident were responsible for the trouble. I knew that more adhesions would form, but hoped they would not constrict the bowels. After entering the abdomen and separating the constricting bands, I examined the ligatures placed on the pedicles at the previous operation and found no trouble from them. The patient made a good recovery and went home very much improved in health, and I am reliably informed that she continued in very good condition for a year or more, when she became acutely insane and died within a few weeks.

Individuals who, by reason of inheriting nerve-cells of limited capacity, require, when in comparatively good health, a discharge of the full force of their psychic cells to perform their duties, are liable to have their mental functions disorganized by any conditions which tend to lower their vitality. Every major operation is attended with more or less shock, and the cessation—natural or artificial—of the function of the ovaries produces a decided impression on the nervous system. Therefore the operation, in the last two cases, may have added to the already present tendency to mental incapacity; nevertheless, they were operations of necessity, and ordinarily, by removing the condition which was causing the ill health, should have ultimately strengthened the capacity of the psychic cells to discharge their duty.

Correspondence.

Blackmailing.

ST. LOUIS, July 6, 1899.

To the Editor:—There is a crying evil prevailing in the United States against which no remedy has yet been found. It is sporadic in character and unsparing of the individual singled out for its victim. This evil or curse is known as "blackmailing," and it is an evil by the side of which assassination or highway robbery is a mere bagatelle. The watchword of the brave is, "thy purse or thy life," the watchword of the blackmailer is, "thy money or thy character," which to many is more precious than life.

The chosen victims of the blackmailer are chiefly medical men, who are singled out under a flimsy plea of damages for malpractice. The nominal plaintiff can not possibly attain his nefarious object without an affiliation with an attorney, whose only consideration usually is a contingent fee. Such attorneys are happily rare, but moral perverts can be found in every calling, and are well known to every searcher for such material. These psychomoral freaks are shrewd enough to circumvent unwary, unsophisticated persons to pose as plaintiffs and to load them with the odium of such criminal proceedings, making them responsible for all expenses, but keeping for themselves the pelf arising therefrom.

Numerous victims are met with in all parts of this country. The chosen unfortunate physician would sometimes rather buy off or make a compromise of the matter than endure the annoyance, expenses and blackguardism incident to such law suits. Occasionally these worthies strike a rock and are stranded, but they do not remain inactive long, and soon are in chase of another victim.

But why do they remain unpunished? Did they not try to obtain money under false pretenses? Did they not cause great expense, inflict untold mental sufferings? Did they not defame

and outrage with their spurious charges? It would be interesting to sociologists and pathologists if a posthumous examination could be made of the contents of the blackmailer's cranium. Many of the cerebral central areas, as those of affection, honor and benevolence, would, no doubt, be found poorly developed, while those of greed and rapacity would be abnormally prominent. With such physical degeneracy they would be incapable of doing the right thing, except by chance. An asylum for the demented should be their habitat. But if the structures of the brain are found normal, their malefactions are due to psychic and moral perversion, and the precincts of a prison should be their dwelling place. They should be under guardianship, either in a penal or an eleemosynary institution, and should never be suffered to go about without surveillance.

S. POLLAK, M.D.

Hemophilia.

CLEVELAND, OHIO, July 7, 1899.

To the Editor:—In the JOURNAL of June 24 (p. 1449), relating to an article read by Dr. G. W. Wagner, before the Detroit Medical and Library Association, on "Hemophilia," I notice he regards "exposure of bleeding wounds to the air" by him as probably original treatment. Perhaps it is original, but this means of controlling capillary oozing in these cases was suggested to me about twenty-five years ago by the late Dr. Isaac N. Harris, professor of physiology and histology in the Western Reserve Medical College. I do not know that it was original with him. This procedure proved efficacious in more than one instance to my knowledge. Respectfully,

A. J. COOK, M.D.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Journal of the Medical Sciences, July.

- 1.—Anomalous Eruptions in Typhoid Fever. J. M. DaCosta.
- 2.—Some Remarks on Typhoid Fever Among Our Soldiers During the Late War with Spain. Victor C. Vaughan.
- 3.—Coexistence of Carcinoma and Tuberculosis of the Mammary Gland. A. S. Werdlin.
- 4.—Concerning Kernig's Sign in Meningitis. James B. Herrick.
- 5.—On Astasia-Abasia, with a Case. J. C. Wilson.
- 6.—Eversion or Turning Inside Out of Sac of a Cystonephrosis as an Aid in Operating on Recal End of Ureter and on Partition Walls Between Dilated Calices. Christian Fenger.
- 7.—Pulmonary Tuberculosis with Intercurrent Typhoid Fever Complicated with Pneumonia—Triple Infection. Augustus A. Fisher.
- 8.—Case of Mitral Stenosis, with Fever (Non-Malarial) of Relapsing Type. Frederick P. Henry.
- 9.—Comparative Action of Green and Brown Strophanthus Seeds. Henry H. Rusby.
- 10.—Critical Summary of Literature on Tuberculosis of Walls of Blood-vessels and Production of Military Tuberculosis. Harvey R. Gaylord.

Medicine (Detroit), July.

- 11.—Alkalinity of Blood in its Physiologic and Pathologic Relations. J. H. Salisbury.
- 12.—*Cystitis Favocalata. F. Kreissl.
- 13.—Acute Anterior Polymyositis. Elbert Wiog.
- 14.—*Protarol in Gonorrhoea. Wm. L. Baum.
- 15.—*Floating Kidney with Intermittent Hydronephrosis. Gustave Kolisher.
- 16.—*Hot-Air Cauterization in Lupus Vulgaris. After Method of Dr. Hollaender. Jacob Frank.
- 17.—*Caput Ostium Muscularis. M. L. Harris.

New Orleans Medical and Surgical Journal, July.

- 18.—Ocular Therapeutics. Henry Dickson Bruns.
- 19.—*Principles of Scientific Sanitation and Quarantine. Edmond Souchon.
- 20.—*Case of Leucemia, Splenic Myelogenous Variety. Otto Lerch.

Brooklyn Medical Journal, July.

- 21.—*Mental Suggestions and Charlatanism. P. Scott.
- 22.—*Diagnosis of Hip-disease. C. D. Napier.
- 23.—*History of a Case of Cut Throat. Henry Wallace.
- 24.—*Pelvic Abscess in Women. Alexander Rae.

Buffalo Medical Journal, July.

- 25.—*Plea for the Unification of Medical Societies. Z. J. Lusk.
- 26.—*Prophylaxis in Obstetric Practice. William G. Taylor.
- 27.—*Relative Death-rates from Cancer and Consumption. John H. Pryor.
- 28.—*Relation of Medicine to Civilization. John O. Roe.

Ophthalmic Record (Chicago), July.

- 29.—*Report of Case of Accidental Inoculation of Eyeball with Vaccinia Virus. S. Potts Eagleton.
- 30.—*Septic Thrombosis of Cavernous Sinuses. William E. Bruner.
- 31.—*Percentage of Color Blindness to Normal Color Vision as Computed from 288,916 Cases. Joseph A. Mullen.
- 32.—*Case of Amblyopia Due to Use of Methyl Alcohol. H. Moulton.
- 33.—*Foreign Body in Iris. George H. Bicknell.
- 34.—*Question of Operation on Injured Eye in Sympathetic Ophthalmia. Robert Sattler.
- 35.—*Mydriatic Action and Value of Euphthalmia. Edward Jackson.

Memphis Lancet, July.

- 36.—Galvanoacoustic Radical Treatment of Prostatic Hypertrophy. E. Kreisl.
- 37.—*Vomiting of Pregnancy. G. G. Buford.
- 38.—*Surgery of Strabismus. C. H. Beard.
- 39.—*Ludwig's Angina, with Report of Cases. R. W. Tate.
- 40.—*Post Hoc, Propter Hoc. W. J. Chenoweth.

Medical Register (Richmond, Va.), June.

- 41.—*Mastoiditis: Diagnosis and Treatment. John P. Davidson.
- 42.—*Evolution of Therapy. Simon Baruch.
- 43.—*Etiology and Treatment of Alveolar Hemorrhage. John H. Hartman.
- 44.—*Peculiar Case of Twin Birth. J. B. Fisher.

Philadelphia Monthly Medical Journal, May.

- 45.—*Eclampsia. Thos. Snyder.
- 46.—*Some Facts and Theories Relating to Auto-intoxication. R. H. Chittenden.
- 47.—*Indigo Group in Relation to Internal Medicine. F. Leonard Vaux.
- 48.—*Sarcoma of the Thyroid Gland. C. G. Cumston.
- 49.—*Chemico-legal Testimony: Strychnia. G. H. Meeker.
- 50.—*Hay Fever. C. M. Cobb.
- 51.—*Catgut Sutures. H. B. Besemer.
- 52.—*Family Sanitarium for Pulmonary Tuberculosis. A. Davis Hard.
- 53.—*Case of Multiple Arthropathy. F. E. Simpson.

St. Paul Medical Journal, July.

- 54.—*Some Problems of Professional Life and their Relation to Success in Practice. H. A. Tomlinson.
- 55.—*Ectopic Pregnancy. A. McLaren.
- 56.—*Catgut. Edward Boeckmann.

Tri-State Medical Journal and Practitioner (St. Louis), June.

- 57.—*Surgical Clinic on Diseases of Children. Chas. R. L. Putnam.
- 58.—*Uric Acid Diathesis and its Particular Lesions in the Mouth. W. F. A. Schultz.
- 59.—*Rapid Treatment of Varicose Ulcers of the Leg. Wm. D. H. Brown.
- 60.—*Paracelsus. Jas. M. Ball.

North Carolina Medical Journal (Charlotte), June 20.

- 61.—*Continued Fevers of North Carolina. E. K. Hayes.
- 62.—*Typhoid Fever as Met With in Fayetteville and Surrounding Country. J. F. Highsmith.
- 63.—*Propagation of Typhoid Fever and other Infectious Diseases. G. A. Ramseyer.

Canadian Journal of Medicine and Surgery (Toronto), July.

- 64.—*Report of Laboratory of Provincial Board of Health. John J. Macleod.
- 65.—*Medico's Visit to Richmond, Va. W. A. Young.
- 66.—*Constipation; Some of its Effects and its Non-Medical Treatment. E. S. Pettyjohn.

Medical Summary (Philadelphia), July.

- 67.—*Cholera Infantum. Wm. H. Vail.
- 68.—*Treatment of Erysipelas—Report of Case. Chas. E. Tucker.
- 69.—*Does Tobacco Cause Amblyopia? W. H. Morse.
- 70.—*Thermic Convulsions of Children. A. J. Mann.
- 71.—*Chips from my Workshop. Jos. Adolphus.
- 72.—*Medical Legislation. J. W. Lockhart.

Kansas City Medical Index-Lancet, July.

- 73.—*Empiricism in Missouri and How to Suppress it. E. L. Priest.
- 74.—*Vesicovaginal and Vesico-Ureteric Fistula. H. E. Pearse.
- 75.—*Reports of Cases from Practice. A. B. Freeman.
- 76.—*Visit to State Medical Association of Texas. F. B. Tiffany.
- 77.—*Diphtheria and Intubation. C. C. Farley.
- 78.—*Review of Recent Advances in our Knowledge of Anatomy and Physiology of Nervous System. John Funton.

Southern Practitioner (Nashville), July.

- 79.—*Addison's Disease, with Report of a Case. Perry Bromberg.
- 80.—*General Remarks on Pathology of Atheroma. Wm. H. Witt.

Medical Herald (St. Joseph), June.

- 81.—*Use of Force for Reduction of Fractures of Lower End of Radius, with Report of a Simple Method for Its Application. D. Richardson.
- 82.—*Chronic Nasal Catarrh. F. I. Leonard.
- 83.—*Remarks on Neurasthenia. John Funton.
- 84.—*Some Experiences with Intubation. F. E. Sampson.
- 85.—*Case of Embolism of Arteria Centralis Retinae of Right Eye. Frank B. Tiffany.

New England Medical Monthly and Prescription, July.

- 86.—*Clinical Report on Three Cases of [Unusual Interest.](Thomas H. Manley.
- 87.—*Some Clinical Experiences with Tyree's Antiseptic Powder. R. Frank C. Brown.
- 88.—*Medicine—Antitoxin—The Army—La Grippe. C. B. Newton.
- 89.—*Cases of Psoriasis. Hepatic Torpor. Gout and Compulsion. C. H. Powell.
- 90.—*Treatment of Carbuncles. M. P. Creel.
- 91.—*Tissue Builders. N. M. Baskett.

- 92.—Physical Education. C. P. Robbins.
Medical Age (Detroit, Mich.), June 25.
- 93.—Etiology of Rheumatic Fever. T. Wertz.
- 94.—Obscure Case of Abdominal Pain Complicated with Morphin Eating. Wm. Pepper.
- 95.—Essential Points in Treatment of Diphtheria. James G. Brubaker.
Pediatrics (N. Y.), July 1.
- 96.—Hydronephrosis, Pyonephrosis—Nephrectomy in a Boy, Aged 4½ Years. Emory Marvel.
- 97.—Researches in Indicanuria and Phenuria in the Digestive Intoxication of Children. E. Thomas.
- 98.—Notes on a Rapidly Fatal Case of Tetanus. Stanley M. Ward.
American Practitioner and News (Louisville, Ky.), June 1.
- 99.—President's Address. David Barrow.
- 100.—Indications for Enucleation. T. C. Evans.
New York Medical Journal, July 8.
- 101.—Report of Three Cases of Multiple Pistol-shot Wounds of Intestine, with Remarks. George Woolsey.
- 102.—Clinical Study of Twenty-four Cases of Paralysis Agitans, with Remarks on Treatment. Joseph Collins and L. J. J. Muskens.
- 103.—Etiology of Texas Cattle Fever, with Special Reference to the Recent Hypotheses concerning the Transmission of Malaria. Theobald Smith.
- 104.—Eudoxin in Pediatric Practice. Gustavus M. Blech.
- 105.—The Doctor as a Carrier of Disease. John T. Howell.
Cincinnati Lancet-Clinic, July 8.
- 106.—Points on Smallpox. Benjamin F. Lyle.
- 107.—Tuberculosis: Diagnosis. H. H. Spiers.
Medical Record (N. Y.), July 8.
- 108.—Report of Case of Alcoholic Multiple Neuritis, with Autopsy. J. H. Larkin and Smith Ely Jelliffe.
- 109.—Notes on the Induction of Premature Labor. Henry C. Coe.
- 110.—Variations in Human Gait. E. H. Bradford.
Medical News (N. Y.), July 8.
- 111.—Bicycling in Its Relation to Heart Disease. A. C. Getchell.
- 112.—Prognosis of Pneumonia in Its Relation to its Etiology. Herbert Maxon King.
- 113.—Measuring Intensity of Heart Tones. Albert Abrams.
- 114.—Tetanus Treated by Antitetanus Serum; Report of Case. T. E. Taylor.
Boston Medical and Surgical Journal, July 6.
- 115.—Cavendish Lecture on Etiology and Diagnosis of Cerebrospinal Fever. Wm. Osler.
Maryland Medical Journal (Baltimore), July 8.
- 116.—Landmarks in History of Ophthalmology in Nineteenth Century. Hermann Knapp.
- 117.—Progress in Gynecology. Chas. P. Noble.
Medical Review (St. Louis), July 8.
- 118.—Study of Nerve-Cell Changes of Spinal Cord in Case of Epidemic Cerebrospinal Meningitis. S. I. Schwab.
- 119.—Treatment of Simple and Specific Vaginitis. Milton P. Creel.
- 120.—Temporary Divergent Strabismus Accompanying General Narcosis. Willard Barlett.

AMERICAN.

1. **Eruptions in Typhoid Fever.**—DaCosta describes and illustrates, by cases, the occasional varieties of eruptions aside from the characteristic rose spots of typhoid fever. The scarlatiniform rash may come on early or late, and he has known it to occur even in convalescence. It is a uniform red rash seen all over the body, though not universally so, more distinct in some places than in others, easily influenced by pressure, having periods of greater and less intensity, of partial disappearance and vivid return. It generally lasts a week or a little longer and passes away without desquamation. Two cases are described. The mealy eruption is rarer and more misleading and has much resemblance to the condition in typhus. Measles may complicate typhoid fever and this may lead to confusion. Two cases of this complication are described. The differences are the coarser, more papular and crescentic eruption of true measles; the itching and desquamation also are not seen in typhoid fever rash; the temperature range is also quite different and distinct. Still another type of rash is the mottling of the skin occasionally observed, which he considers due to a hyperemia. All these eruptions are probably due to nervous vasomotor disturbances, but how this is produced he does not say. There is nothing in these rashes which seems to add any special gravity to the disease when they occur.

2. **Typhoid Fever in the Late War.**—This article is the result of an inspection made under the order of the surgeon general in the late summer of 1898. It is published by permission of the war department. The first point noticed was the lack of scientific diagnosis of typhoid fever, many cases being

called malaria, though malaria was a very rare disease among the soldiers. The origin could be easily traced in most cases. Its spread was not so generally due to the water-supply as to carelessness in camp police. The statements made in this regard are very striking. There is no evidence that milk was a frequent vehicle. Note is made of the apparent intermittent character of the disease among the soldiers. He concludes as a result of the studies that a regiment thoroughly infected does not better matters by change of camp; there should be thorough disinfection of everything, clothing, blankets, tentage, etc. If the regiment is infected before the infection has become marked, the typhoid may disappear or at least decrease. A sea voyage of some days or weeks may rid a command not too much infected, of the disease, but a short voyage would have no such effect if the regiment was thoroughly infected.

3. **Carcinoma and Tuberculosis.**—Warthin reports two cases of the coexistence of carcinoma and tuberculosis of the mammary glands, which he thinks are unique. He is inclined to follow Ribbert's view that the tuberculous process may act as a primary factor in exciting the carcinomatous condition, but thinks this relation is a very rare one. In his second case he considers the tuberculous process as a secondary infection to the carcinoma.

4. **Kernig's Sign in Meningitis.**—Herrick gives a thorough discussion of this phenomenon, considered by Kernig as characteristic of pial inflammation and always present in such conditions. It is described as follows: If a patient with meningitis is made to sit up, as on the edge of the bed, the thigh being, therefore, at right angles with the back, it is extremely difficult to extend the leg because of the presence of a marked flexor contraction. In 19 cases observed by Herrick, this sign was present in 17, and in the two where it was absent, both children, the single examination was made shortly before death when there was a general marked laxity of all muscles. It may have been present earlier. In 100 cases of disease other than meningitis, it was present only in 2. No satisfactory explanation of this phenomenon has been offered and Herrick does not attempt to explain it other than by saying that there is probably such increase in tone as to exaggerate the natural difficulty of extension to actual flexor contraction. (See *JOURNAL*, xxxii, p 1013.)

6. **Cystonephrosis.**—Fenger advocates the eversion, or turning inside out, of the sac of cystonephrosis, through an opening large enough to permit this, combined with methodic consecutive division of the partition walls one after another so as to lay bare and turn out for inspection the whole inner wall. This is the surest way of finding the ureteral opening. He reports a case at length, illustrating the value of this operation.

7. **Triple Infection.**—Eshner reports a case of tuberculosis with intercurrent typhoid fever complicated by pneumonia.

11. **Alkalinity of Blood.**—After an elaborate review of the literature of the subject, Salisbury ends his paper with the following conclusions, which he thinks are justified in the present state of our knowledge: The reaction of human blood is constantly alkaline. The alkaline reaction is due partly to inorganic alkalies and partly to substances of organic nature which are probably derived from the proteid food. The regulation of the reaction of the blood is due to the action of the kidneys and probably the liver. The alkaline reaction of the blood is reduced in various diseases—uremia, diabetes. In infections it is lowered in proportion to the virulence of the infection, but increases with the recovery of the organism, and in immune animals is above the normal. In the treatment of disease causes of acid reaction should be avoided, particularly in infections. Thus the action of the skin and kidneys should be favored and the production of acids by fermentation in the intestinal canal should be prevented. The administration of

alkalies in moderation is useful, but cannot be expected to raise the alkalinity of the blood to a high degree. This is due to the fact that inorganic alkalies are either temporarily stored in the liver or rapidly excreted by the kidneys. The increase of alkalinity in cases of recovery from infections is probably not the cause of recovery, but is due to the production in the blood of a curative substance which is alkaline in reaction. The substance is a nitrogenous organic compound, and is derived from the proteids. A meat diet, therefore, would seem especially suited for patients suffering from infection. It may be the case that the nitrogenous constituents of beef tea, although not proteids, are capable of furnishing the material from which such an alkaline protective agent can be produced.

12. **Cystitis Faveolata.**—Kreissl describes a condition which he has not found specially mentioned in the literature, occurring in cystitis, consisting in the gradual production of minute holes in the muscular coat of the bladder and after long continuance extending even to the interstitial connective tissues and even penetrating the bladder wall, producing pericystitis. It is distinguishable from the real diverticula of the bladder in which the opening is smaller than the cavity behind it and the holes thus appear like dark spots through the cystoscope while in this condition they are visible through their whole depth. They aggravate the condition by offering pockets for morbid secretions and rendering it difficult to cleanse the bladder by irrigation. He thinks chinolol, 1/10 grain to the ounce of distilled water, is the best remedy for this condition. Under it the condition of the urine improves rapidly, irritation subsides, and the intervals become longer. Later, Guyon's instillations of nitrite of silver may be employed.

14. **Protargol in Gonorrhoea.**—Baum's paper gives a tabulated statement of fifty cases treated by him according to Neisser's method, with protargol, using injections three daily. The last one a prolonged one, thirty minutes, beginning with .25 per cent. solution, gradually increased to .5 and 1 per cent. After a few days the last or prolonged injection is alone used. The other two injections are replaced by a 2.5 per cent. suspension of bismuth or iodoform, a 3 per cent. solution of boric acid or a .25 per cent. solution of sulphate of zinc. The fact that the solution is not precipitated by albumin probably accounts for some of the good results obtained and the penetration into the follicles and periurethral tissue must be greater. This method is a decided advance in the treatment of gonorrhoea.

15. **Floating Kidney with Hydronephrosis.**—Kohlscher calls attention to the fact that intermittent hydronephrosis is not a rare complication of floating kidney, and he advises the following course in such accidents: Replace the kidney and keep the patient in bed; wait twenty-four hours for the spontaneous emptying of the tumor. If this occurs, a simple anchoring of the kidney in its normal position is sufficient to effect a cure, and in the light of our present knowledge seems to be superior to McArthur's or Senn's operation. If after twenty-four hours no decrease in the tumor has taken place, ureteral catheterization is to be employed, accompanied by deep massage. If nephropexy is performed, it should be preceded by a nephrotomy, which should include such repair of the pelvis of the kidney as is indicated in the case; the ureteral catheter should be left in position to act as a guide during the operation.

16. **Hot Air Cauterization in Lupus.**—The object of this paper is to bring before the profession of this country the method of Dr. Hollaender of Berlin for lupus vulgaris—hot-air cauterization. He describes and illustrates the apparatus and also several cases treated by Hollaender according to this method, which seems to be a success.

17. **Caput Obstipum Musculare.**—The summary of Harris' paper is as follows: 1. Caput obstipum musculare is a post-natal chronic inflammatory condition due to infection

principally affecting the sternocleidomastoid muscle, and accompanied by contraction; 2, the affection is principally for a variable though considerable time progressive; 3, the best treatment is complete extirpation of the contracted muscle and the involved surrounding tissues.

19.—**Modern Sanitation and Quarantine.**—Souchon describes the requisites of modern scientific quarantine, especially with reference to yellow fever, as derived from experience in New Orleans and Louisiana.

20.—**Splenomedullary Leucemia.**—The patient was a white man, 37 years of age, a native of Louisiana and a farmer by occupation. In June, 1898, while shearing sheep, he was taken with a pain in the splenic region. Three days later the spleen was noticed to be growing large; there was no fever, but diarrhea or several days' duration. The spleen continued to swell, the increase in size ceasing from time to time only to recur, until it filled the whole of the left side of the abdomen and encroached noticeably on the right side. Of some bearing on the etiology of the case, in conjunction with the history of traumatism suffered while shearing sheep, is the fact that the patient suffered a severe blow on the right tibia some months after the beginning of the splenic enlargement, the skin over the site of injury being still discolored and tender at the time of his admission to the hospital. The blood was perfectly natural in color, a surprising fact, considering the enormous number of white blood-corpuscles. It flowed freely from the finger and was easily spread between cover-glasses, contrary to the observation of Cabot, who says it flows sluggishly and is difficult to spread on account of the masses of white cells contained in it. Coagulation was slow. Nucleated red blood-corpuscles were noticed. Of leucocytes there were found—polymorphonuclear cells, lymphocytes, eosinophiles—largely increased in number—and a very large number of myelocytes, characteristic of the splenomedullary form of leucemia.

21.—**Mental Suggestion and Charlatanism.**—Scott's article notices the importance and utility of suggestion in the cure of disease, and then reviews "Christian Science," showing up its absurdity.

22.—**Diagnosis of Hip-Joint Disease.**—Napier describes the method of diagnosis in hip-joint disease quite thoroughly, but we cannot follow him fully in detail. The conditions which may resemble it are, simple contusion or sprain, which may simulate its symptoms very closely, though observation and rest in bed will clear up the diagnosis. Traumatic or rheumatic synovitis sometimes resembles the sudden acute attacks of hip disease, but there is usually more swelling and redness and more swelling over the joint. The pain is in the hip and the muscular twitchings during sleep are rare. In rheumatism there is often history of previous attacks and the duration of either form of synovitis helps to clear the diagnosis. Chronic synovitis may also give us the symptoms of bone disease, and dislocation of the hip has often been readily mistaken. Coxa vara is a rare condition, first described by Muller in 1859. It is a bending of the neck of the femur which usually occurs in males at the age of 14 or 16, but may occur earlier. The trochanter becomes elevated, there is usually pain, some atrophy, and later muscular spasms. The principal characteristics are limited abduction, elevation of the trochanter and pain after exercise. Pott's disease with lumbar abscess may also simulate this trouble.

25.—**Unification Needed.**—Lusk's paper is a plea for more concentration and unified effort on the part of the profession. He thinks that medicine has not received the consideration it should, and is convinced that the position we occupy is largely due to our own neglect of opportunity and will be unimproved unless we adopt principles or measures in keeping with good sound common sense and in accordance with the standards governing the closing years of the century instead of those prevail-

ing 100 years ago. We ignore the truth that in union there is strength, and subdivide our efforts and waste our energies. There are in the United States nearly one hundred thousand members of the regular profession. Imagine our power socially and practically if we paid allegiance to one national association, for instance, the one that has always taken the lead in power and numbers, viz., the AMERICAN MEDICAL ASSOCIATION. This should be strengthened by an enormously increased membership to which every physician should feel the same loyalty as to the country in which he lives. After enumerating some of the numerous national organizations, he asks, "Now why could not a majority of those numerous societies accomplish fully as important results in their special lines organized in sections, thus representing branches of the one great body? Why is this marked isolation necessary? I will leave the answer with you."

Another point noticed by him is the multiplication of medical colleges, and he specially notes the fact that the craze for adding "Professor" to one's name seems to especially affect the profession in the middle West. Thus, in Missouri, there have been organized since 1840 thirty-three medical colleges, sixteen of which survived in 1895. The following quotation from the annual address of Dr. Richmond of St. Joseph, Mo., president of the state society, is to the point: "A few, shrewd and ambitious for self-promotion, seeing how they would reap advantages from a professorship, organized a college. Those who were left out, not willing to be overtopped by the big professors, organized a second. Still there were a few who were not supplied, and disaffection springing up in one, it swarmed, and a third was the result. Of the forty-four doctors then in town I was one of the four who was not a professor, a distinction of which I am not ashamed. In selecting their faculties it was not necessary to go beyond the city limits, only to the suburbs." Still another question is the part we take in politics. Thus far in our profession we have done little, but the time has arrived when it is absolutely essential that we should make our power known, not necessarily in seeking position, but in selection of those who will recognize our position and our reasonable demands.

26.—**Prophylaxis in Obstetrics.**—The principal points in this paper are the necessity of attention to: 1, family and personal history; 2, general physical examination; 3, general hygiene, as food, clothing, etc.; 4, special attention to urine; 5, care of nipples and breast; 6, asepsis and douching before and after labor; 7, prevention of postpartum hemorrhage; 8, repair of lacerations.

29.—**Vaccin Virus in Eye.**—Eagleton reports a case of a doctor who accidentally had a vaccin tube pushed against the eyeball with some force. It was followed by a bleb beneath the conjunctiva. The patient had been protected by previous vaccination, otherwise there would probably have been loss of an eye.

31.—**Percentage of Color Blindness.**—Mullen has collected statistics as to the occurrence of color blindness from various sources in different countries, which show quite a wide variation from different sources of report. The total number of cases examined was 308,919, the larger number, 181,169, being from the United States. The average percentage of color blindness of the total was 1.82, the largest 3.80 in Denmark, the lowest .01 per cent. in France. In the United States the percentage was 1.53 for men and .0073 for women. [These figures do not give one full confidence in the reliability of the reports].—Ed.

34.—**Operation on Injured Eye in Sympathetic Ophthalmia.**—First remarking that common experience justifies enucleation of the injured eye before the occurrence of sympathetic ophthalmia, while after this has begun it is generally useless, Sattler states that he has been led to restrict the operation to those cases in which the injured eye is a source of uncontrollable suffering, or because it harbors a concealed foreign body, or

it could be assumed that the measure would be necessitated sooner or later. In other cases, however, where sympathetic ophthalmia has occurred, but is not attended by unbearable pain, operation should not be recklessly attempted. So long as this is not done there remains a small chance that it may furnish further along, the opportunity for a partial restoration of sight even in the injured eye. Three cases especially impressed him to adopt conservative measures in his later practice. He says: "To summarize briefly: Enucleation of an injured eye—particularly in rupture of the sclera, punctured wounds of globe with extension to the uveal tract—when active sympathetic ophthalmia of the fellow eye has been excited, is not justifiable, for the reason that after a complete subsidence of inflammatory reaction in both eyes, the injured eye may alone offer a chance for a partial restoration of sight. Enucleation of an injured eye which has excited sympathetic ophthalmia is justifiable and often a means of necessity, in case of traumatism produced by the lodgment in the eye of a foreign body which cannot be localized. If such are a source of continued suffering, the enucleation should be speedily done, but without a hope or prospect that this will influence the course of the inflammatory disturbance. Enucleation of the injured eye with the hope that it will favorably influence the progress of sympathetic ophthalmia has little or no foundation in accurate clinical observation or surgical experience. There certainly is no reliable proof that it has ever arrested or even retarded the fatal course once begun. It must, therefore, be considered an uncertain measure of interference, which expediency even can only counsel in a small number of cases. It must furthermore be added that there are no reliable data that it is harmful in the sense that it excites a more rapid or more disastrous course in the sympathetically affected eye. This is more likely due to the inherent degenerative activity, which varies in each case, so far as its destructive fatality is concerned."

35.—**Euphthalmin Mydriasis.**—This synthetic product, closely related to eucain B, was brought to the notice of ophthalmologists a couple of years ago, and its value reported by various European authorities. Jackson reports from his own observations, as follows: Euphthalmin acts on the eye as a true mydriatic. Its influence is more feeble and brief than that of homatropin. Its influence on accommodation is relatively slight, so that it has no practical value as a cycloplegic; and its cycloplegic influence causes but trifling annoyance when it is used as a mydriatic. It is the best agent we have to produce brief dilatation of the pupil under strong light, and stands next to cocaine in value for dilating the pupil for ophthalmoscopic examination. Combined with cocaine, it produces a satisfactory mydriasis for the examination of the eye, with the least annoyance to the patient and the most rapid recovery.

37.—**Vomiting of Pregnancy.**—Buford, after reviewing the physiology of vomiting, comes to the conclusion that the anabolism of the fetus and mother gives us an increased generation of the irritant which causes emesis, and a deficient elimination by the kidney produces its accumulation in the system. Summarizing these, he reaches the following conclusions: 1. The cases of vomitus gravidarum is not a reflex but the by-products of anabolic cell metabolism, which acts centrally, as apomorphia does. 2. The nephritis, which is usual concomitant of vomitus gravidarum, and is itself the result of hyperhydrochloria, is the cause of deficient elimination. The postulate that defective nutrition is a result of the above conditions is an accepted fact. The therapeutic endeavor should be directed to relieve the cause. This is best done: a, by lavage of the stomach thoroughly three times a day with alkaline antiseptic solutions; b, baths and massage to enable the skin to assist the kidney; c, by exercising freely in open air; d, the diet of proper quantity and quality. The induction of abortion to relieve vomiting of pregnancy he has never seen justified, and it is only mentioned here to be condemned.

38.—**Strabismus.**—Bear describes a special method of advancement of the tendons in strabismus, which is rather too detailed to abstract here. He also describes one or two other operations suited to special cases. He claims for his method that it is the safest and the simplest of processes.

40.—See abstract in JOURNAL, May 27, p. 1172.

41.—**Mastoiditis.**—Davidson's paper describes the condition of mastoid inflammation, its diagnosis and treatment. He thinks the most valuable diagnostic points are tenderness on deep pressure, and the sagging of the posterior superior wall of the canal, which are sufficient evidences of its existence; that we should never wait for redness and edema behind the ear to occur before making a positive diagnosis. In case of complicating acute suppurative of the middle ear, the first indication is thorough drainage through the canal, and the use of constant ice applications in contact with the mastoid process. He would continue this for four or five days in acute cases before resorting to operation, if possible. Hot applications, leeches and Wild's incision are condemned. In chronic cases he would not use ice applications at all, and in his judgment they should be immediately operated on. The operation is described in detail. Injury to the lateral sinus is bound to occur sometimes, but hemorrhage from it is easily controlled. The danger is from infection.

43.—**Alveolar Hemorrhage.**—Excessive bleeding after tooth extraction is noticed by Hartman, and is due to traumatism, laceration and fracture of the bone, or to hemorrhagic diathesis. Simple and direct pressure on the part is the best treatment, but tannin is the best agent for local application and may be used in conjunction with pressure. Monsel's solution is dangerous and not to be relied on. In cases known to be bleeders, it is well to give 10 grains of gallic acid every hour, commencing just before the operation, and continuing until bleeding stops.

45.—**Eclampsia.**—This is defined by Snyder as "an auto-intoxication caused by an agent producing coagulation, and characterized by convulsions, loss of sensation and consciousness, accompanied by frontal headaches and epigastric pains." In summarizing the treatment he concludes that the only rational procedure is to have all the emunctories active, as the bowels with compound colocyath, the bladder by mechanical means, a diet of milk and digestible foods. The patient is then placed in a hot bath or hot pack, when perspiration is soon established and prodromes vanish. After labor has begun, in addition use chloroform for spasm, and deliver the child by artificial means. Give cardiac stimulants; after labor use only the hot packs. From this treatment he considers the mortality due to eclampsia can be greatly reduced.

46.—**Auto-intoxication.**—Chittenden discusses the facts and theories relating to auto-intoxication, from the standpoint of general metabolism, considering auto-intoxication a possibility within the reach of every individual organ, tissue, and cell of the body. This conception of auto-intoxication does not exclude the possibility of another form of toxemia resulting from the absorption of products formed by the action of micro-organisms in the intestinal tract. Considering the possibility of auto-intoxication resulting from the action of normal products of tissue katabolism (xanthin, hypoxanthin, guanin, and adenin), either because of excessive production or tardy elimination, the recent evidence indicates that adenin is intensely toxic, is resistant to change within the body, is not excreted as allantoin or uric acid, and produces marked pathologic changes. Hypoxanthin is non-toxic, probably because of its early conversion into uric acid and allantin. Xanthin is likewise easily changed, and is more resistant; only when a methyl group is introduced into the xanthin molecule does it resist changes. The toxicity of the methyl compound increases with the number of methyl groups introduced. Acetone and its production is considered in

this connection as a toxic substance, although in a healthy individual large doses are required to produce much effect; still, in inanition, the weakened conditions attendant on the severe forms of diabetes, and in some other diseases, acetone may be present and its possible physiologic effect is to be considered. The writer considers the chief factor in auto-intoxication "a phase of perverted metabolism which as yet cannot be localized, and doubtless does not admit of distinct localization. The production of so-called toxins is, without doubt, in many cases at least, the initial cause of the disturbances, but no one of the bodies can be held directly responsible for the physiologic results which ultimately appear. This, that, or the other substance, produced in undue amount, may simply set in motion a chain of events from which eventually is developed a series of symptoms only remotely connected with the primary action of the so-called toxin. The extreme sensitiveness of the nervous system to toxic substances renders it probable that autopoisons exert their primary influence here, and that many phases of auto-intoxication are due to primary disturbances of the metabolism of the nervous system."

47.—**Indigo Group in Internal Medicine.**—Discussing the relation of indol to free HCl in the gastric secretion, Vaux concludes that in:

1. Gastric conditions such as achylia, characterized by a total persistent absence of free HCl, and lactic acid, will ultimately be the source of indicanuria.

2. This condition will be materially advanced or delayed, according to the presence or absence of motility.

3. The indicanuria of gastric cancer must in a large measure be attributed to proteid degeneration.

4. Conditions of the stomach marked by excessive or continuous secretion of HCl, act in a similar manner to those with anachlorhydria, though for a different reason.

5. Primary enteric affections are usually the source of an increased formation of indol, and this is in direct proportion to their severity.

6. Constipation, unless in a person of unusual absorptive powers, or extending to the small gut, does not produce a marked indicanuria. While it is pointed out that intestinal stasis either in a moderate or pronounced degree always results in a relative increase in the elimination of indol, it is also well to remember that a condition of stasis may be present without any apparent torpidity of the bowels.

48. **Sarcoma of Thyroid.**—Cnumston had under his observation for some months a case presenting moderate enlargement of the left lobe of the thyroid. Afterward, showing a tendency to rapid growth, and having attained the size of an apple, excision was effected. Examination of the neoplasm showed the capsule of the gland intact, the gland uniformly firm in consistency. Microscopic examination defined a typical follicular goiter at the upper part of the gland, which had become invaded by spindle-celled sarcoma in the septa dividing the vesicles of the gland. A focus of sarcomatous tissue, the size of a cherry, was found in the lower part of the gland. The writer discusses the subject of malignant neoplasms of this gland very fully, as well as the technic for their removal.

53. **Multiple Arthropathy.**—Simpson's case differs from arthritis deformans in some respects. While the progressive joint involvement was uniform, the first joints involved were the larger ones, the smaller articulations being last affected. The patient, a male, aged 43, presenting a fairly clear hereditary history of joint troubles, observed the arthropathy in the ankle-joints first, later the knees, the spinal column, in the dorsal, then in the cervical regions; and eventually the shoulders and elbows. Five or six years after the onset of the earliest symptoms the metacarpophalangeal joints became afflicted, were swollen, painful and with a marked tendency to fixation with noticeable ulnar deviation of the hands. It was observed that in damp weather, as a rule, the tenderness and discomfort

in and about the joints was decreased and an improvement was marked in the patient's general condition. The articular swelling was in this case apparently due, to a large extent at least, to the effusion into the joint; practically no deposit occurred about the joints. The case presenting an "unjointing" of almost the entire body, suffering from principally from the soreness experienced on attempted motion, and from the loss of muscular power.

55. **Ectopic Pregnancy.**—McLaren briefly reports fourteen cases of ectopic pregnancy, occurring under his observation, the last one a case of interstitial pregnancy with missed labor and death of the child, delivered by abdominal section thirteen months after conception. He thinks that there has been a larger mortality (3 in 14) in his experience so far than there would be were it repeated.

56. **Catgut.**—Boeckmann reviews the subject of catgut and its preparation for surgical use. He has tried to learn the trade secret of its preparation, but without success. He describes in detail the methods of cleansing, antiseptic impregnation, reduction, drying and stretching, hardening, putting in receptacles and sterilizing, which last he prefers to secure by dry heat. He believes that the ideal catgut is in our reach and will render all other kinds of suturing and ligating material superfluous. It must be aseptic, antiseptic, strong, pliable and durable. It is ideal, however, only in the hands of an ideal surgeon. Catgut of the best make as to strength, cleanliness and sterility, and surgically prepared by washing, silverizing, drying, stretching, exposure to sunlight, hardening in alcohol, with or without the addition of formalin, and sterilization by dry heat, put up in hermetically sealed envelopes is an almost ideal suturing and ligating material, subject, however, to improvement. If trouble arises, the surgeon is responsible.

57. **Pediatric Cases.**—Putnam presents, in this clinical lecture, cases of double and single harelip, cervical and tubercular adenitis, tuber-culosis of phalanx and congenital dislocation of hip.

58. **Uric Acid Diathesis.**—The special point in Schultz' paper is that Rigg's disease is a uric acid manifestation and should be treated by constitutional methods, as well as local means.

59. **Varicose Ulcers of Leg.**—Brown's reports indicate that this paper is written largely to praise antinosis and nosophen in these conditions. Galvanism was also used.

63. **Propagation of Typhoid Fever.**—Ramsur finds, from his observations, that typhoid fever in small towns is fly-borne. In cities with good sewerage systems, it is necessarily water-borne. In cities typhoid prevails at any season, provided the germs remain active at all temperatures. In villages, on the other hand, it is largely autumnal and most extensive during the hotter, dry months when propagation by flies is possible.

64. **Laboratory of Ontario Board of Health.**—Mackenzie, bacteriologist of the Ontario Provincial Board of Health, describes the methods of work in the laboratory of the board. The diseases investigated were tuberculosis, cerebrospinal meningitis, etc. During the past few months he has been studying the hay bacillus noticed by Moeller, and closely resembling the tubercle bacillus. He finds, as differences, that its pathogenic virulence on animals is slight, and that the Sudan III. stain for tubercle bacillus will not affect this. Its practical importance, he thinks, arises from the danger of confusing it with the tubercle bacillus in butter and milk.

69. **Does Tobacco Cause Amblyopia?**—The term tobacco amblyopia commonly used is objected to by the author as not consistent with the physiologic action of tobacco. The most that can be said is that it may produce a sympathetic amblyopic condition through disorder of the stomach. Tobacco amblyopia, therefore, is a disorder of those not accustomed to tobacco, rather than that of tobacco habitués.

81. **Fracture of Radius.**—Richardson recommends the fol-

lowing method of reducing fracture of the lower end of the radius, which is practiced in the Pennsylvania Hospital. The surgeon stands in front of the patient, interlaces his fingers beneath the supinated wrist and palm of the injured member, so that his two index fingers parallel crosswise beneath the lower end of the upper fragment of the radius. The palms of the surgeon's hands are then closed in upon the thenar and the hypothenar portions of the patient's hand, respectively, while the surgeon's thumbs rest parallel lengthwise on the upwardly displaced fragment of the radius. The parts are thus firmly grasped by the surgeon while the following movements are made: The patient's wrist is excessively extended by carrying his hand upward. When hyperextension has thus been secured the surgeon makes powerful traction on the wrist in the line of hyperextension. While this traction is maintained the hand is suddenly carried into full flexion, and at the same time powerful downward pressure on the upwardly displaced lower fragment of the radius is made by the surgeon's thumbs, opposed by the interlaced index fingers beneath the lower end of the upper fragment. The excessive extension of the first portion of the movement has always loosened or disintegrated the displaced lower fragment while the subsequent traction flexion and direct thumb pressure has not yet failed to accurately force the lower fragment into its proper position. Separated epiphysis of the lower end of the radius is likewise easily reducible by this manipulation. For comminuted or complicated or very oblique fractures extension and moulding alone are called for in most instances. The patient does not anticipate what is coming; the two movements are made with lightning-like rapidity in a small fraction of a second, and, in nearly every case, perfect reduction has been accomplished before the patient realizes that he has been hurt; so anesthesia is unnecessary for making a single effort at reduction by the proposed method. Should the manipulation fail to secure perfect reduction at the first attempt, it is better not to repeat the maneuver until anesthesia has been induced, for the pain of repeating it would be intolerable.

86. **Interesting Cases.**—Manley reports three cases of rather peculiar interest. The first was one of mammoth dermoid cyst of the scrotum complicated with inguinal hernia in a man 60 years old, which was successfully extirpated and reduced. The second was of embryonic umbilical hernia, containing the stomach, small intestines, cecum and colon with the liver, spleen and pancreas, in a new-born female infant. There was practically no abdominal cavity, therefore its reduction was out of the question and the child succumbed. The third was a large irreducible umbilico-ventral hernia in an aged woman, relieved by supporting bandages.

93. **Etiology of Rheumatic Fever.**—Wertz reports the causes, so far as known, of acute rheumatism—season, cold and dampness, drought, which seems to have a relation as shown by English statistics, and locality, the infection seeming to cling to certain houses, like that of diphtheria, erysipelas, etc. As regards the bacteriology, he is brief and does not refer to some of the later researches and reports on this subject.

95. **Treatment of Diphtheria.**—Brubaker remarks on some of the difficulties and annoyances in the treatment of diphtheria, the difficulty of sometimes obtaining a satisfactory bacteriologic examination and the uncertainty as to when danger of infection ceases. As to the treatment, prophylaxis is of the utmost importance, but the area of contagion is a limited one and much can be done by isolation and disinfection. For local treatment he limits himself to the use of chlorid of iron given in medium doses. Preparations of mercury should also be given. He would advise a laxative followed by catharsis and afterward small doses continued. Antitoxin should be used in all cases and should be from a reliable laboratory. It should be used early, not waiting even for the bacteriologic report. The surgery of the disease is another matter briefly mentioned,

and in some cases it should be also done early. He thinks it a good practice, when intubation has been decided on, to prepare at the same time for immediate tracheotomy in case of failure in inserting the tube. Further, this measure is not certain to afford great relief as the membranes may extend deeply into the trachea and bronchial tubes, and it is well to state these facts to parents and friends.

97. **Indicanuria and Phenoluria in Children.**—Thomas' article reports five cases of children in whom he found conditions of apparent intoxication by these substances, the pathologic action of which he discusses in the light of the present literature. What is actually known of the subject is summed up by him as follows: 1. The presence of these substances in the urine is the result of a process of putrefaction of the albuminoid contents of the intestines whether intermingled in normal quantities or otherwise—usually the former. 2. Indol and phenol are converted by a well-understood process into sulphoconjugate acids, which are said to be not very toxic. He is not certain as regards this point and is continuing investigation on the subject. It appears that the liver plays a prominent part in the production of phenols, while indol is apparently formed in the intestines. On the other hand, the liver is said to impede the passage of these substances through the portal circulation, and when there is much indican in the urine we usually find alimentary glycosuria. His five cases were children, four girls and one boy, between the ages of 4 and 9 years. The symptomatology in these cases is, on the whole, rather indefinite, affecting the general condition and the state of the digestive organs. There was anemia, slight emaciation, muscular insufficiency, digestive disorders, some nervous exhaustion, and in one case respiratory trouble (dyspeptic asthma). The treatment is directed to the general condition, moderate exercise, out-of-door life, salt and sulphur baths. With an arthritic heredity, too much rich food should not be given, and he advises dispensing with meat or allowing it only in small quantities. The bowels should be looked after and kept disinfected.

98. **Tetanus.**—Ward reports a case of tetanus occurring a week after injury in which death occurred on the second day from asphyxia.

99. **Address.**—Barrow's address is that delivered before the Kentucky State Medical Society in May.

100. **Indications of Enucleation.**—Evans, after quoting the indications for enucleation as given by Knapp and Swanzy, states that there are many cases where it is impossible for him to say that this operation is required. He believes that altogether too many primary enucleations are done, and that they should be limited to those cases known to contain a foreign body that cannot be extracted, and to those of excessive laceration of the globe. Sympathetic ophthalmia does not develop for at least three weeks after injury, thus giving ample time to wait and see what rest and attention will do and still enucleate in time if required. He thinks, moreover, that the exciting eye, if closely watched, gives sufficient and timely warning of the approaching danger to the other eye.

101. **Bullet Wounds of Intestines.**—Three cases are reported by Woolsey, of multiple pistol-shot wounds of the intestines, treated by operation. One case has been previously reported in the *Annals of Surgery*. In one, death occurred from intestinal sepsis, the other two recovered. In discussing these cases the author condemns Senn's hydrogen insufflation as a diagnostic method, holding that it increases the danger of escape of intestinal contents and consequent risk of peritonitis. As regards prognosis, the number of wounds is an important element, as is also the condition of the stomach and bowels as to fulness or emptiness. Wounds of the large intestine, with its more solid contents, are less likely to be followed by their escape, and if the bowels are empty the chances of their perforation are diminished. The curious fact noted at Santiago,

that all cases of abdominal injury operated on died and the only recoveries were those uninterfered with, is here noted, and the author concludes that the modern small caliber bullets afford more chance for conservative surgery than was formerly the case with large missiles. He also refers to the influence of the different reaction of individuals to intestinal wounds. The proportion of mortality of perforating wounds of the intestines has decreased from 90 to about 43 per cent. of cases operated on early, since the introduction of antiseptics. As regards treatment, the earlier the operation the better. It is useless to make a small incision; it should be at least five or six inches long. After checking hemorrhage, if it exists, the wounds should be searched out and closed with Lembert sutures. Two rows of continuous sutures are safer and more quickly applied than a single row of interrupted sutures. The other important points are the liberal use of hot normal salt solution, to cleanse the surfaces, to keep the exposed surfaces warm and moist and combat shock. The ideal method would be to avoid drainage, but if there is any question as to complete closure or of the retention of infectious matter in the abdomen, drainage would be advisable.

102. **Paralysis Agitans.**—This article is an analytic study of twenty-four cases of this disorder with special reference to its etiology and treatment. The special points noted are the preponderance of Irish—about one-half of the whole—among those affected, the advanced age, it being most frequent from the fifth decade on, and the influence of heredity in a certain proportion of cases, on which point the author's studies are not in entire accord with those of other observers. As regards occupation, nothing special was determined. As to causes, these cases, like others, show that the most important factors are age, sex, nationality, morality, violent emotions, especially depressing ones, direct and indirect heredity, and infectious diseases. The symptoms of the disorder are analyzed and studied at considerable length. Their onset is usually insidious, though sometimes abrupt; muscular rigidity, tremor, some pain. In most of these cases the disease was preponderantly diplegic, which is not in accordance with the statements of many other writers. The disorder is uniformly progressive. The mind is not affected unless it be at the very last. As regards treatment, diet and mode of living are principally to be considered. Some methods recommended are mentioned only to be condemned, such as vibration, Swedish gymnastics, and electricity. As for drugs, the two which seem to give some benefit are hyoscyamin and duboisin, but these should be given with great care. They are only palliative at best. Other drugs mentioned are hypnotics. The salicylates are condemned by the authors.

103. **Etiology of Texas Cattle Fever.**—Smith's paper reviews the facts as to the etiology of the Texas cattle fever, and concludes with some considerations in regard to the causation of malaria based on the analogy with Texas fever. He believes that malaria can be eradicated by proper care, at least outside of the tropics. In our climate vigorous efforts should be made to prevent it.

105. **Doctor as Carrier of Infection.**—In this article Howell calls attention to the fact that without proper precautions the doctor himself may become a disseminator of the disease which he treats, and that he has himself followed certain precautions, such as using a gossamer overcoat in infectious cases, keeping a couple of these in use and disinfecting them after each utilization. Other methods of precaution are also mentioned.

106. **Smallpox.**—Lyle reviews the history of the late smallpox epidemic in Cincinnati, giving tabulated statistics and notes of special features. The general character of the epidemic was very mild, the death percentage being only 1.75.

107. **Tuberculosis Diagnosis.**—Spiers' article is a protest against microscopic and chemical diagnostic tests in tuberculosis. He thinks that the presence of tubercle bacilli is not

reliable, that the tuberculin test has no general value, and that we should abandon the germ theory of the disease altogether. The above gives a sufficient idea of the trend of the paper.

108. **Alcoholic Neuritis.**—This paper contains a very elaborate report of a case of multiple alcoholic neuritis with autopsy and microscopic examination of the cord and brain. The authors found degenerative lesions irregularly distributed in the cortex of the brain, and in the stichochrome cells of the motor cortex, and arehystichochrome cells in which the nucleus varied in position and the staining was irregular. The chief lesions, however, were found in the cord and medullary nuclei, and the following are the general conclusions: 1. In fatal alcoholic multiple neuritis grave variations from the normal structure (equivalent picture of Nissl) of the ganglion cells of the anterior and posterior horns, the columns of Clarke, the nucleus of Stilling, and the nuclei of the medulla are always to be found when studied by appropriate methods. 2. These cystologic variations are characterized by their extreme polymorphism. They may consist of simple swelling of the ganglion cell or its chromatin particles; fine granular disintegration of the chromatin; destruction of the chromatin; central peripheral, perinuclear, and general chromatolysis; wandering of the nucleus to an eccentric position, the destruction of the achromatic structures to complete disintegration of the cell. 3. To what extent these lesions are due to the direct action of the alcoholic poison on the molecular structure of the ganglion cell (primary), or the degeneration of the peripheral extensions of both sensory and motor neurons (secondary), cannot, we believe, be accurately determined. The conclusion drawn is, that the peripheral degeneration is the much more important one of the two. 4. The best hypothesis yet offered to account for the degeneration of the cells of the column of Clarke is that of VanGehuchten, by the assumption that the ganglion cells of a nervous chain exercise the one upon the other a trophic action, the suspension of which produces a chromatolysis and disappearance of the corresponding cells.

109. **Premature Labor.**—Coe calls attention to the tolerance of rough handling exhibited by the uterus in certain cases, showing the incorrectness of the statement commonly taught, that it is easily excited by artificial means, and showing that dilatation of the cervix is by no means a certain method of inducing abortion. He gives five cases showing that gauze tamponade and water-bags, while invaluable for the purpose of softening and dilating the cervix and lower uterine segment, cannot be depended on to excite labor pains provided the membranes remain intact.

110. **Variation in Human Gait.**—Bradford's paper gives illustrations of the gaits in different styles of walking and calls attention to their importance in the construction of proper footwear and in training for marching, etc.

111. **Bicycling and Heart Disease.**—Getchell finds that acute dilatation of the heart is an accident that may be expected from overexertion in an unathletic rider, and that if the conditions are repeated, permanent dilatation, especially of the right heart, may result, with a consequent dilatation of the aorticulventricular valves. In the athletic, hypertrophy may be produced with a possible consequence of disease of the aortic valves. He thinks that children under the age of 12 or 13 years should be restricted in this exercise as they are liable to overdo it. With healthy young adults, precaution should be exercised against hill climbing and excessively rapid riding. After the age of 40 the bicycle may be beneficial or a positive danger. Proper regard for hills, excessive exercise against high winds, rough roads and the gear of the wheel will make it beneficial, while one indiscreet overexertion may cause irreparable injury.

112. **Prognosis of Pneumonia.**—King reviews the different varieties of pneumonia, based on their etiology, and concludes as follows: A pneumococcus pneumonia in a previously healthy individual under 65 tends to recovery by crisis, runs a

distinct and definite course, is not complicated by pleural effusions and does not leave, after recovery, permanent injury to the lungs, or cause abscess or gangrene. On the other hand, it gives the largest mortality, and death in fatal cases is due to acute toxemia. Tubercular pneumonia either at the beginning of phthisis or in its course runs an acute and often alarming course, is more irregular in its development, may terminate in crisis as in the former type or by gradual subsidence, is not attended by suppuration of lung or pleura, may, however, produce pleuritis, dry or with effusion, is seldom, if ever, immediately fatal, and it is doubtful whether it has any harmful results on the tuberculous process. Streptococcus pneumonia—including all pneumonias depending on infection by pyogenic organisms—forms a large portion of all pneumonias, is always the class in which empyema, abscess and gangrene or septic complications of other origin are to be feared and in case of recovery is liable to more or less seriously impair the integrity of the lung or pleura. Influenza pneumonia, if uncomplicated, runs a shorter course in which less marked disturbance of the body temperature is associated with much greater vasomotor nerve disturbances and with profound prostration. It does not tend to terminate by crisis, does not involve the pleura, nor itself permanently affect the integrity of the lungs. It is rarely fatal. On the other hand, it, more than any other, predisposes the lung to infection by pathogenic germs, especially the streptococcus and tubercle bacilli, and is consequently more than any other, subject to after complications and sequelae. He reports four cases illustrating each of these types.

113. **Intensity of Heart Tones.**—The following are the conclusions of this paper:

1. The loudness of the heart tones may be measured by testing the distance to which they are transmitted from their clinical point of auscultation.

2. This may be determined by two methods. The first method consists of measuring the distance to which the heart tones are propagated along definite routes on the chest. The second method consists of introducing between the stethoscope and chest wall a soft rubber rod of varying length, the tones gradually becoming less distinct as successive rods of increasing length are employed.

3. Of the two methods the latter is by far the more accurate, although this by no means represents an ideal attainment.

4. The employment of either method does away with memory in observing the progress of the strength of the heart in individual cases, and enables us to more easily distinguish any accentuation of the tones.

5. The order in which the tones can no longer be heard is as follows, beginning with the weakest tones: First aortic, first pulmonary, second tricuspid, second mitral, second aortic, second pulmonary, first tricuspid, and first mitral tone.

6. Until a universal stethoscope is employed we cannot hope to make the method of measuring the heart tones of general application, but must content ourselves with the application of the method to individual cases.

7. The first point beyond the hepatic region where the cardiac tones are no longer audible marks the lower border of the liver.

115.—See abstract in JOURNAL, July 8, par. 122, p. 93.

116.—See abstract in JOURNAL, May 6, p. 1000.

118. **Nerve-Cell Changes in Cerebrospinal Meningitis.**—Schwab ends his paper as follows:

1. In epidemic cerebrospinal meningitis we have to do with a process which affects the sensory cells.

2. The Clark system of cells shows a greater tendency to react to the disease than any other system of cells.

3. This tendency cannot be explained by means of the effect of the mechanical pressure of the exudate.

4. The degeneration of these cells is caused by a toxin which originates from the specific agent of the disease, the

micrococcus intracellularis meningitidis of Weichselbaum, which has a special affinity, first, for all sensory cells; secondly, particularly for the cells of Clark's column, therein showing a possible specific action toward these cells.

5. If the exudate does exert any pressure it is to be regarded as affecting the cells indirectly, i. e., it diminishes the normal resistance of the cells which come within the line of its force, and the cells so acted upon react easier to the toxic material than the others.

119. **Vaginitis.**—The method of treatment advised in this paper by Creel is the use of suppositories made of alum and glycerin, with carbolic acid and ichthyol. These are easily applied high up, and are not irritative, but at once begin to exert a soothing effect on the inflamed tissues. He briefly reports a number of cases in which this method was employed.

FOREIGN.

British Medical Journal, June 24.

Croonian Lecture on Some Points Connected With Sleep, Sleeplessness and Hypnotics. JOHN BUCKLEY BRADBURY.—This first lecture reviews the theories of sleep, the histologic, the various hypotheses as enunciated by Remon y Cajal, Duval Lagaro and others; the vasomotor, revived in a modified form by Howells; the chemical theories, of which only the recent one of Errera is considered worthy of mention, and the psychological theory which he feels obliged to discard. The fundamental change, Bradbury holds, must be in the neurons, and this, he is inclined to think, must be of a chemical nature. In support of this, he refers to the investigations of various observers on the action of poisons on the nerve-cell, those of W. Ludwig, Binz, Goldscheider and Flatau, and Demoor. He follows the latter author, however, in admitting that we must confess ignorance of the intimate nature of the cause of sleep. The lecture is valuable as a comprehensive review of the principal facts and theories of the physiology of the condition so far as known.

Lancet, June 17 and 24.

Physical Diagnosis in Insane. JAMES F. GEMMEL.—The author calls attention to the difficulty of obtaining subjective symptoms in the examination of the insane, on account of their mental condition and their insensitiveness. Retention of urine is often discovered only by posture and gait. Strangulated hernia may be observed only when the patient is stripped for a bath, enteric fever only shown after the eruption has appeared, and numerous other instances might be cited common in the alienist's experience. Hence the necessity of the closest observation of every minute symptom and the necessary greater dependence on physical signs than in the sane. He details cases of purulent meningitis, phlegmonous gastritis and volvulus, illustrating the above points, and discusses the diagnosis.

"Chronic Venereal Sores," or "Ulcerating Granuloma," WITH ILLUSTRATIVE CASE. J. MAITLAND.—In 1898 Maitland described under the name "chronic venereal sores" an affection apparently the same as that observed in British Guiana, by Drs. Conyers and Daniels, and called by them "groin ulceration." He here reports another typical case of the disease which is fairly common in Southern India. It consists essentially in a chronic non-indurated more or less extensive ulceration originating usually from a bubo, not affecting the general health, and is contagious, auto-inoculable, and of venereal origin in the majority of cases. In its early stage the sore strongly resembles yaws, and as in that disorder, when healing action begins, the skin structure not being completely destroyed, inlets of new epithelium spring up at various points over the sore. In yaws, however, the sores never attain the size here seen, and are scattered over the body instead of being localized. This disease appears to affect young and middle-aged adults, and to be confined to the colored races. The disease is never affected by constitutional treatment or by local applications. Complete excision or amputation through healthy tissues is most effective, though sometimes thorough re-

moval of soft tissues with a sharp spoon followed by the use of Vienna paste may produce an apparent cure.

Danger of High Altitudes for Patients Affected With Arteriosclerosis. TH. FINDLATER ZANGGER.—The author calls attention to the strain on the heart and arteries at elevations of three and four thousand feet and above, and especially of rapid ascents. Mountain railways are in this way dangerous to an unsuspecting public. The bad results in these cases, heart collapse, angina pectoris, cardiac asthma and apoplexy, often only appear after the return to the lowlands, and patients with cirrhotic kidneys are in greatest danger. In case of apoplexy, it is generally the combined influence of a few things slight in themselves, that, added to the altitude, produce the worst results. Over-feeding, over-exertion, exposure to hot sun, bowel neglect all have their part. Zangger advises an almost vegetarian diet in arteriosclerosis, with use of mineral waters, caution as to stimulants and avoidance of exercise in the heat of the day, especially in shut up valleys where the sun's rays are intensified in the rarified atmosphere.

Evolution of Lines of Sight. CHALMERS PRENTICE.—The author of this article finds from his studies of animals and men that the tendency to parallelism and convergence of the lines of sight is a late acquisition in evolution, and that it is incomplete, even in civilized man. In examination of over 3000 cases post-mortem he has not seen a single case that appeared perfectly straight. After death the tendency is divergent. From these and other facts, he concludes that the evolution of the optic axis is not yet complete, and that we are in a chronic state of eye strain, exhausting energy and probably seriously embarrassing us in the struggle of life. How serious is this handicap it is impossible to say, but it must be great, judging from the extent of the visual centers, which are many times as great as those that govern the movements of the arm or the leg.

Preventive Inoculation. W. M. HAFFKINE.—This address gives the results of the work of antiplague inoculation in India under Haffkine's direction. After demonstration of the effect of the serum on animals, its harmlessness in man was demonstrated by voluntary experiments by the officers of the laboratory and other Europeans and native residents of Bombay, and this was followed by more severe tests in several local prisons where a certain proportion of the inmates consented to the inoculation. In still other tests only a proportion of the population were inoculated, a course that after the previous demonstration of the value of the treatment and their willingness to receive the serum, is open to criticism. The results were generally and uniformly good, the difference in the mortality between the protected and the unprotected being estimated as high as 80 per cent, or more, in favor of the former. The duration of protection appears to be at least six months, and the Indian Government recognizes the certificates as exempting the holder from plague regulations for at least that period. The plague research laboratory is at work endeavoring to extend and perfect the discoveries already made for the better control of the pestilence. Typhoid inoculation is also mentioned and faith expressed that it will have a high practical value. As regards the relative value of inoculation and segregation disinfectant methods, Haffkine points out the distinction between purely parasitic germs and those that are both saprophytic and parasitic. In the former case the patient is the sole source of infection, and isolation is effective; in the latter he is only one source out of many, and other measures must be resorted to.

Tribuna Medica (Rio), v. 6.

Gases Produced by Bacillus Coli. C. LEPIERRE.—The complete absence of carbonic anhydride in the gases produced in cultures of the bacillus coli, excludes all idea of a fermentation similar to that of the sugars. Oxygen is also absent, and the gases seem to resemble certain intestinal gases in their composition. Another point brought out in this study is that while

the production of gas is almost invariably in the first few days, with the bacillus coli, it is extremely irregular with the "para-coli bacilli," and usually absent altogether.

Greece Medicine (Syra), June.

Pernicious Convulsive Malarial Fever. J. KARDANATIS.—This extremely rare and generally fatal disease is frequently simulated by ordinary malarial infection in persons predisposed to convulsions, but the latter is essentially a benign affection. "Gastro-intestinal affections in general prepare a favorable soil for the installation of malarial infection, even the spasmodic form."

Lithiasis of Prepuce. A. LOUIS.—When the patient applied for relief from the pains which had tormented him for seven years, the penis was shaped like the tongue of a bell, the prepuce gorged with calculi, requiring an incision to release them. Over a hundred were evacuated, from the size of a grape seed to that of a pea.

Progres Medicale (Paris) June 17.

Falling of Hair From Emotion. F. BOISSIER.—Several carefully observed cases have been recorded of late in this journal, and a still more striking case is now added: a normal, healthy farmer, 35 years of age, saw his child thrown and trampled by a mule. He supposed it killed, and experienced in his fright and anguish a sensation of chilliness and tension in his face and head. The child escaped with bruises, but the father's hair, beard and eyebrows commenced to drop out the next day, and by the end of a week he was entirely bald. A new growth of hair appeared in time, but finer, and exactly the color of the hair of an Albino.

Revue Hebdomadaire de Laryngologie, d'Otologie, etc. (Bordeaux), xx, 16, 17.

Lesions of Inner Table of Skull With Suppurations of Middle Ear. BRINDEL.—Necrosis of the inner table was found in 36 out of 142 operations on the mastoid apophysis. The cases were: simple mastoiditis in 15; Bezold's mastoiditis, 5; mastoiditis with thrombosis of the lateral sinus (latter not disturbed), 1; suppurative phlebitis of the lateral sinus, 1; cerebral complications, 5; otorrhea with occasional vertigo, 2, and otorrhea without vertigo, 7. Lesions of the inner table are rather more frequent with chronic than with acute otorrhea. They frequently give no clinical evidence of their presence, and produce no special phenomena. In a third there were no other lesions of the apophysis; in the rest there was also necrosis of the outer table or Bezold's mastoiditis. Four had facial paralysis, all cured by the intervention; 5 died; a large subdural abscess was evacuated in 2; 18 were treated by opening and curetting the antrum, tympanum and tympanomastoid passage. Complete evidences of the apophysis was done in 1 case and Garnault's method in another (reaching the antrum by detaching the meatus and raising the upper half of the bony passage without disturbing the tympanum). Moure's method of closing the retro-auricular wound at once, while it renders dressing the wound more difficult for the operator, secures cicatrization by first intention with scarcely a trace of the intervention, and is highly to be commended.

Cocainized Mentho-Phenol. A. RONAIN.—Two years' experience has convinced the writer that the combined anesthetic, gently caustic and powerfully antiseptic action of equal parts of phenic acid, menthol and cocain hydrochlorate produce a combination extremely valuable in oto-rhino-laryngology. To increase the caustic action he varies the formula to phenic acid, 1 part; menthol and cocain, $\frac{1}{2}$ part.

Revue Medicale (Nontreat), June 21.

Thymus in Therapeutics. C. E. BOISVERT.—A distressing case of Graves' disease, rebellious to all medication for three years and threatening melancholic mania, was improved in a week and practically cured in three months, with fifteen to twenty-five grains of extract of lamb thymus a day. The only symptom left was a slight tumefaction of the thyroid. This case, as reported in detail, is a most convincing argument in favor of thymus medication, abundant at first and decreasing to suspension according to the manifestations of the disease.

Semaine Medicale (Paris), June 21.

Induced or Simulated Affections. EDITORIAL.—This article completes a study of affections induced or simulated by beggars, soldiers or convicts, and is a record of perverted human ingenuity. Severe bronchitic rales are simulated by a piece of cork tied to a string which is fastened to a tooth and the cork swallowed; hematemesis by vomiting blood which has been drunk for the purpose. Voluntary tympanism and retention of urine can be carried to a remarkable extent by some persons and only yield to the administration of an anesthetic. The local lesions and general disturbances that can be induced by plants, burns, etc., are legion, and each is described in detail. A deceptive icterus can be induced by steeping tobacco in oil, drying and smoking it all night. Then follow vomiting, fever and icterus that persist for weeks.

Centralblatt f. Chirurgie (Leipzig), June 24.

Sphincter Ani Destroyed by a Phlegmon: Plastic Operation. K. G. LENNANDER.—Almost normal continence was attained by this operation in which the levatores ani and glutei maximi were applied to a defect involving the sphincter and part of the posterior wall of the rectum, caused by a gangrenous phlegmon. Lennander recommends the method for a secondary operation after extirpation of a cancer of these regions.

Deutsche Medicinische Wochenschrift (Berlin), June 15 and 22.

Surgical Treatment of Benign Gastric Affections. W. PETERSEN.—This study of sixty cases, operated on at Czerny's clinic, emphasizes the fact that there is no field in which the harmonious working together of the physician and the surgeon is more imperatively required than in this. The ultimate results have proved extremely favorable; before 1895, 50 per cent. cured and 10 per cent. improved out of 281; since 1895, 80 per cent. cured and 10 per cent. improved, with 1 death, out of 32. Of 7 patients operated on for gastralgias, 4 were completely cured by gastroenterostomy; 1 by detaching pericholecystic adhesions; 1 by "pyloro-plastics" and a secondary gastroenterostomy; 1 is still under observation. Only 3 cases of fresh hemorrhage from the stomach were encountered, although there was a record of hemorrhages in 4 of the cases of stenosis, all cured by the intervention. One of the three fresh cases was evidently a vicarious bleeding from the parenchyma in place of the menses, and neither gastroenterostomy nor division of the pylorus nor enlargement of the gastro-intestinal fistula proved effective. The other two cases were characteristic ulcus hemorrhages, cured by partial excision of the ulcus and gastroenterostomy in one case, and by the latter alone in the other, which establishes a new basis for operative treatment of ulcus hemorrhages, as it obviates the very important objection that the search for and ablation of the ulcus is too difficult and dangerous under the circumstances. It will be great progress if other observations confirm the result in this case; that gastroenterostomy alone, enables the stomach to empty itself and its walls to contract, and thus arrest further hemorrhage. A dilated stomach subsides rapidly at first and then more slowly, after surgical intervention, but seldom returns to normal size. The motor function is in most cases fully restored to normal; in a few cases it was permanently diminished. The amount of HCl decreases, and bile is frequently found in the stomach, but neither the bile nor the lack of HCl cause any appreciable clinical disturbances. The absolute indications for intervention are: Stenosis of the pylorus with a high degree of mechanical insufficiency—permanent decrease of the amount of urine and of the weight. The relative indications, after failure of internal therapeutics, are a high degree of atonic mechanical insufficiency, threatening hemorrhage, severe gastralgia and uncontrollable vomiting—from fresh ulcus, ulcus cicatrix, perigastritis and adhesions.

Muenchener Medicinische Wochenschrift, June 20.

Value of Bremer Test in Diabetes. H. SCHNEIDER.—The behavior of the blood with anilin dyes varies in certain

circumstances, and Premer (*JOURNAL*, xxx, p. 438) considers it a test for diabetes, but Schneider finds that the peculiar reaction known as Bremer's test depends on the acidity of the fluid mixed with the blood or of the blood itself, and is by no means confined to diabetes, but occurs whenever the blood, urine or other fluid is abnormally acid. It has no value as a differentiating test for diabetes, but may possibly be utilized some day as a test of the alkalinity of the blood.

Williamson's Test of Diabetic Blood. RUMPF.—Contrary to the above experience with Bremer's test, Rumpf considers Williamson's test a very useful means of differentiating diabetes, as the blood and urine of a diabetic subject evidently contains some substance that takes the color out of an alkaline solution of methylene blue, heated in the water-bath for 1½ to 5 minutes. It proved especially beneficial in a recent case of a patient brought to the hospital with the diagnosis "apoplexy." No urine could be obtained, but the Williamson test on a few drops of blood confirmed the assumption of diabetic coma.

Spindle-shaped Enlargement of Esophagus. T. RUMPEL.—A healthy man under observation for several years presented unmistakable evidences of this condition, which caused no disturbance except the occasional accumulation of part of the food in the esophagus, requiring auto-sounding. Experiments with a hard sound resulted in death from perforation peritonitis. The esophagus was found absolutely normal except for the enlargement, which was evidently due to a nervous spasm constricting the lower end. "All efforts to overcome such a constriction mechanically are worse than useless as they increase the functional spasm."

Wiener Kiinische Wochenschrift, June 22.

Setio Cesareo on account of Retrovaginal Cervix Myoma. E. WERTHEIM.—Called to a primipara after three days of ineffectual labor, a myoma was found obstructing the passage, requiring Cesarean section although the fetus was known to be dead. As the unusually large fetus was extracted the decidua was found decidedly degenerated, and instead of replacing the uterus and postponing the removal of the myoma to a more favorable season, as proposed, the danger of sepsis required the immediate extirpation of the myoma and uterus, which was accomplished through the vagina, with prompt recovery. The walls of the uterus were found thoroughly infected. Wertheim asserts that the results of Cesarean section in case of a myoma preventing delivery would be much more favorable than at present, if at the slightest suspicion of infection in the uterus, the radical operation was practiced as in this case, instead of conservative section or supravaginal amputation.

St. Petersburger Medicinische Wochenschrift, June 17.

Methylene Blue in Therapeutics. MICHAÏLOW.—This experimental study of the effects of methylene blue on the tissues and organs, demonstrates its utter unfitness for use in therapeutics at the doses hitherto prescribed.

Gazzetta degli Ospedale (Bilan), June 11 and 16.

Aqueous Extract of Tubercle Bacillus. E. MARAGLIANO.—Flourishing cultures are strained and the contents of the filter mixed with distilled water, equal in amount to the fluid strained out, kept on the water-bath at 90 to 95 C. for forty-eight hours, then evaporated to one-tenth and filtered. The result is a brownish fluid which Maragliano calls aqueous tuberculin or aqueous extract of the tubercle bacillus (see *JOURNAL*, xxx, p. 747). About five times as much of the essential toxic principle (which should be the standard for the strength of tuberculin), is obtained with water than with glycerin, while the degree of heat is just adapted to extract the maximum without attenuating the toxins, as occurs with Behring's tuberculin with a maceration at 150 C., while Koch's T. R. is obtained with water without any heat. From this aqueous extract a powder is obtained by desiccation. An alcoholic precipitate and an alcoholic extract are also derived from it, and

by the addition of 1 per cent. sulphuric acid, needle crystals are deposited which dissolve readily in water and possess a toxic power of 1 to 3333. All these derivatives of the aqueous tuberculin produce the same toxic action and in the same way as the aqueous and the glycerin tuberculin, and the action of each is neutralized by the serum. He considers the alcohol extract of the sediment the purest form of the aqueous tuberculin; its toxic energy is 1 to 20,000. He has obtained an aqueous tuberculin that kills a guinea-pig at 1 to 100, but the product he distributes is standardized to kill at 1 to 20,000 or 25,000.

Acetonuria and Fatty Acids. DE AMBROSI.—The research of the writer has established a direct connection between the amount of fatty acids in the stomach and of acetone in the urine.

Entorrhagia in Abdominal Typhus. L. MAZZOTTI.—The usual cause is the corrosion of a vessel connecting with one of Peyer's patches, as the scab drops off that has formed over it, which usually occurs at the end of the third or fourth week. Another cause is the hyperemia of the mucosa of the colon, which usually accompanies the height of the disease process, and appears at the end of the second or the beginning of the third week. Entorrhagia from this cause is easily cured by injections of hemostatic and astringent substances per rectum. The entorrhagia that appears during the first week does not depend on a local process but rather on the general condition, and represents a dyscrasia of the entire organism, such as Trousseau's hemorrhagic putrid fever.

Trauma of the Spleen. E. CURTI.—A young farmer was tossed by a bull, the horn entering the left hypochondrium and lacerating the spleen and diaphragm. Brought to the hospital in severe collapse, the spleen was removed and the diaphragm sutured, the operation completed in twenty minutes, but the patient did not recover from the traumatic shock and died in four hours. At the autopsy the success of the operation was fully demonstrated and if the patient could have revived from the traumatic shock, there was no lesion or hemorrhage in either the abdominal or pleural cavity to have prevented recovery.

Cronica Medica (Lima), May 31.

Aneurysm in Both Popliteal Regions. M. ALCEDAN.—As much as a pound of clots were taken from the inflamed and extremely painful aneurysm of the left knee, which required ligating. After disinfecting the cavity the patient was transferred to the aseptic operating-room and the other aneurysm, larger than a goose egg, but not painful, was enucleated. The results of this dual operation were complete recovery of the enucleated limb and dry gangrene, necessitating amputation of the other.

Societies.

COMING MEETINGS.

Rocky Mountain Inter-State Medical Association, Salt Lake City, Utah, July 25 and 26.

Eighth Norwegian Medical Congress.—The addresses already announced for this Congress, which is to meet at Christiania, August 24 to 26, are: "Diabetes," by J. Bugge; "Traumatic Lumbago," by R. Natvig; "Prostatitis," by J. Roll, and "Modern Surgical Treatment of Tuberculosis," by O. Borchgrevink.

Cass County Medical Association.—At the annual meeting of this Association, at Logansport, Ind., held June 30, the following officers were elected: President, A. Coleman; secretary, J. Z. Powell; censors, W. H. Bell, J. A. Little and A. J. Herrmann.

International Conference for Prophylaxis of Syphilis and Venereal Diseases.—Besides the delegates of governments and large municipalities, all physicians, jurists and officials especially conversant with the hygienic and admin-

istrative questions in regard to prostitution and venereal diseases, are invited to take part in this Conference, which is to be held, as previously announced in the *Journal*, at Brussels, Sept. 4 to 8, 1899. The subjects appointed for discussion, to be presented by two or three speakers, are: 1. "Have the systems of regulation of prostitution at present enforced any influence on the frequency and the dissemination of syphilis and venereal diseases?" 2. Is the present system of medical surveillance of prostitution susceptible of improvement? 3. From an exclusively medical point of view, is it advantageous to maintain houses of prostitution or to suppress them? 4. Is the administrative organization of police surveillance of prostitution susceptible of improvement? 5. What legal measures would diminish the number of women who seek in prostitution a means of existence? 6. Aside from the question of prostitution, what general measures are advisable to effectively prevent the spread of syphilis and venereal diseases. No subjects except the above will be admitted to discussion. Communications relating to statistics or questions not on the programme will be translated, printed and distributed to the members before the Conference opens, if received in time. Secretary General: Professor Dubois-Havenith, No. 19 rue du Gouvernement provisoire, Brussels. Dr. Havenith is collecting the bibliography of the works published on the above questions and appeals to persons who have published works on these subjects to send him a copy at their earliest convenience. Dr. Dyer of New Orleans has been officially appointed to study the question of prostitution in the United States.

French Congress of Otolaryngology.—P. Bonnier, in his address on "Tests for the Hearing," at this congress at Paris, asserted that all the present tests are defective and lack precision for comparing the results between individuals. He suggests as a great improvement tests with a tuning-fork with 100 double vibrations to the second. The striation in its image produced by the angular displacement disappears at a certain moment. He designates this moment zero, and from this point the hearing capacities, solid and aerial, can be measured in positive and negative values expressed in seconds. The length of the time required for the extinction of the work renders the difference of a few seconds immaterial. Courtaud recommended a couple of tuning-forks and rubber tubes for the detection of simulated deafness on the same principle as described in *THE JOURNAL* (p. 1253). Lermoyez reported a case of Bezold's mastoiditis in a nursing, the first on record. Lacroix presented an inhaler in which the medicinal substances are rendered much more volatile and effective by being heated as an outer receptacle is filled with water at 50 to 100 degrees C. Malherbe presented a small U-shaped celluloid tube which he inserts in the ear after petromastoidean evidences, one end in the antrum, the other in the external meatus, the concavity fitting over the apophysis. It is valuable in cases of sclerotic processes filling the passage, is worn without inconvenience, and is invisible from without. Lermoyez advocated treatment of nasal hemorrhage by acting directly on the secretory terminals of the nerves with atropin (0.25 milligram), and on the vasoconstrictor centers of the spinal cord with strychnin (2 milligrams). These amounts are taken daily for one week; doubled the following week, and tripled the week after in extremely severe cases. Treatment is recommended after suspension for ten days. Local treatment is the last resort if this fails.

California Academy of Medicine.

June Meeting.

CASE OF SYPHILIS.

DES. DUBLEY TAIT AND GUIDO CAGLIERI exhibited a patient with the following history: The patient, a man of 49 years of age, a farmer by occupation, living in the San Joaquin valley, about one year ago noticed a swelling in the right subclavicular

region, just above the breast; this attained to the size of a nut, later suppurated, and after three months closed. Five months ago a swelling appeared in the right groin, which reached the size of an English walnut; it broke down, was incised and drained, but failing to heal, the gland was partially excised. Soon after there appeared enlargements in the left submaxillary and right preauricular regions. These suppurated, broke down and exhibited necrotic tissue. One month later there was suppuration of the glands in the right supraclavicular region. Ten days before entering the hospital swelling appeared in the left tonsillar region. Careful physical examination revealed nothing abnormal in the chest or abdomen; the urine was normal and the special senses were not in any way affected.

The diagnosis was obscure. At Fresno an "analysis" of some pus from one of the suppurating lesions had been made with the statement that tubercle bacilli had been found. This is, however, quite improbable, not only for the reason that it is very seldom and with extreme difficulty that tubercle bacilli can be found in pus from ulcerating areas and suppurating glands, but also because the case does not seem to be one of tubercular lesion. For a time glanders was considered, the patient presenting many characteristic points of resemblance to a case of chronic farcy reported by me a short time ago. This diagnosis was very soon abandoned, however. An injection of mallein, instead of producing an increase of temperature, caused marked decrease. Though no syphilitic history could be obtained, I concluded the case to be one of syphilitic lesion, of an unusual sort, and concluded to make use of intravenous injections. Potassium iodid was tried for two days, but resulted in such a severe eruption that it had to be abandoned. A 1 in 200 solution of cyanid of mercury was employed, the quantity injected at each time ranging from 1.25 to 6.05 gms. After two injections had been made the lesions were about 50 per cent. improved; the necrotic tissue had been entirely discharged and healing was well advanced. At the present time the patient has had four injections in the right median basilic vein, and improvement is continuous and rapid; the glands in the groin have almost disappeared. Have since noted that mallein is of no diagnostic value in man.

DR. GUIDO CAGLIERI.—There can be no doubt that the statement coming from Fresno, to the effect that tubercle bacilli had been found in the glandular pus, was incorrect. It is almost impossible to find the bacilli in glandular pus, for one thing, and for another the case was not at all like the picture, clinically, of tubercular trouble. It is quite possible that some other organism may have been noticed and mistaken for the tubercle bacilli. Quite a number of organisms have been recognized lately, and described as closely resembling the tubercle bacillus. It is at least possible that one of these was noted, though even this is problematic.

DR. HAROLD BRUNN.—I should like to call attention to the value of the hemoglobin test for syphilis in these cases where the diagnosis is somewhat obscure or impossible to get at from the history. I recently made use of it in two cases with very gratifying results. The last case occurred in a patient, a man of family, from whom no history of infection could be obtained. The wife was perfectly well and so were the children. An ulcerating area appeared on the upper lip which might, from the appearance and course of development, have been an epithelioma, though it was not characteristic of the lesion. I tested the blood and found about 80 to 85 per cent. hemoglobin. I then had the man rub in about a dram of mercury at night, and the next morning the blood examination showed a drop in the hemoglobin to 50 to 55 per cent. Three weeks later, under continued syphilitic treatment, the ulcer had entirely healed up. The test is of no value if the patient is under treatment by mercury in any form, and it is also negative unless in the presence of an active lesion, but under proper circumstances it bids

fair to give excellent results. In a case of active lesion, the patient not being under any treatment, a good-sized dose of mercury should show a drop in the amount of hemoglobin, within twelve to twenty-four hours, of from 15 to 35 per cent.

DR. D. W. MONTGOMERY.—I have found great difficulty in using the Fleischl apparatus. I tried for some time to obtain a normal standard for comparison, but without avail. In no case could I get a reading of more than 85 per cent. hemoglobin, even in a perfectly healthy man. It may be that I lack the technical skill in handling the instrument, but all my efforts were negative.

DR. DUDLEY TAIT.—I have not personally made use of the apparatus, but I had one of the internes at the French hospital make a test in a very clear and beautiful case of syphilis, recent, with an active lesion and absolutely no history of mercurial treatment. The test was erroneously made, for before the injection of mercury the blood showed about 80 per cent. hemoglobin, while after an intravenous injection of cyanid of mercury, the Gower apparatus showed an increase of over 20 per cent.

DR. HAROLD BRUNN.—The Von Fleischl instrument is not accurate for blood, the index being decidedly too high. Rarely ever can one get a hemoglobin percentage of 100, and never in my experience in a normal case. The normal runs from 80 to 90 per cent., and the test should be made with that understanding. I do not consider the reading accurate within 5, and always give my readings as between two points on the scale, as for instance, 80 to 85 per cent. One source of error is in the diaphragm opening. This may be somewhat reduced by making use of a paper cone, but even then there is a goodly chance for error. At the lower end of the scale the error is much larger, and the results are very unreliable when this portion of the scale is in use.

DR. D. W. MONTGOMERY.—In considering such a case as the one presented, it would be wise to remember the condition of coxidoïdal disease, reported by Dr. Rixford some few years ago to the state society. He found two cases, both occurring in the San Joaquin valley, and both strongly resembling the case just reported by Dr. Tait. When Dr. Tait described the various lesions which had presented themselves in the patient exhibited, I was quite of the opinion that he was about to present another case of this rare affection. Evidently, the present case is not one of that disease, for it cleared up too well and too soon under the antisiphilitic treatment. But in all such cases, coming especially from the San Joaquin valley, the possibility of coxidoïdal disease should not be forgotten, and the specific germ, the coxidia, should be carefully looked for. The disease seems to be endemic in that valley. Dr. Rixford reported two cases from there, and I have since seen a third, coming from the same locality, and exhibiting the same general symptoms and clinical picture. The one I saw came from there some time ago. He broke out with an eruption, strongly resembling buds, quite similar to potassium iodid poisoning or mycosis fungoides. There was considerable glandular involvement and the coxidia could be found in the glandular pus. Clinically, the picture was much like the case of syphilis reported to-night by Dr. Tait. The coxidia was found in great numbers.

Two points of interest in these cases present themselves: The disease seems to first attack the lungs, or at least this was true in the two cases reported by Rixford and in the case seen by myself. The affection subsequently involved the skin and later the glands. The germ is found in all localities which are involved in the disease process. The abscesses may occur anywhere—in the lungs, the skin, the glands or any of the organs, and, wherever the abscesses appear, there the coxidia may be found in the pus. The disease may be mistaken for syphilis, mycosis fungoides or tuberculosis.

2. Both of the cases reported by Rixford occurred in Portuguese who came from the same town in Portugal. For this

reason there was some question that the disease occurred in this country; it might have been contracted in Portugal and brought to the San Joaquin valley by the patients. The case I have mentioned, however, tends to disprove this assumption, and indicates that the disease is endemic in the valley. My patient was a German who had been working on the Valley Road, and the locality where he contracted the disease is unknown, as he was traveling about a good deal.

The coxidia has been thought by some observers to be a yeast germ, and not an animal parasite. This, I think, is not the case, for it seems to be subject to endogenous reproduction. I have tried to grow the germ, but unsuccessfully on any culture-medium at hand. It would not grow on agar. I had no malt at the time, so could not make the attempt to grow it on that culture-medium. Other observers have also found great difficulty in making cultures. I injected a rabbit with some of the pus, but as I only returned to the city last night, I have had no time to ascertain whether the rabbit has become affected; I am doubtful whether it has developed the disease. So far as the particular case presented by Dr. Tait is concerned, I am sure the diagnosis of syphilis was correct and the treatment certainly a most brilliant success. I spoke of these other cases, however, for the reason that they so strongly resembled the case of Dr. Tait's that I should have looked for the coxidia in the glandular pus of this patient. The coxidia would not have been found in this instance, but in all similar cases, especially when the patient comes from the San Joaquin valley, the possibility should be recognized.

CASE OF LUPUS.

DR. PHILIP MILLS JONES presented a patient whom he desired to have all carefully examine, for the reason that her condition was rapidly improving, and he did not wish to continue the treatment until the case had been inspected and further progress noted by others. The patient was sent to him by Dr. Regensburger, with the diagnosis of lupus. The woman is about 48 years of age, a native of Bordeaux, and has had an affection of the face for thirty-six years. It commenced when she was a child of 12, and has persistently increased in extent until the present, in spite of all effort. Very many specialists have had the patient under their charge with no benefit to the condition. Dr. Jones commenced treatment by exposure to X-rays some two months ago. The face, save the right side, which is involved from the hair line to below the lower margin of the jaw, including the entire ear, was protected by means of a heavy lead plate, perforated with a hole to correspond with the area involved. The woman was then exposed within three or four inches of a low vacuum X-ray tube for from two to eight minutes, three times a week. The length of the exposure and the frequency of the treatments was decided largely by the effect on the skin; when too much reddened by the rays, the exposures were made shorter and less frequent. A slight dermatitis developed just below the eye, and a slight conjunctivitis was also produced by the rays, a few of which managed to strike the conjunctiva at one or two sittings. These troubles have now entirely passed, and indeed were but trifling in the first instance. The maximum intensity of the rays was directed toward the lower portion of the area involved, and this part of the affection is very materially better than is the ear and the upper portion. It is so rapidly improving that but little idea of the condition when the treatment was commenced can now be formed. At that time the whole area was as badly involved as the worst portion now present. The lower area is almost well, the nodules have disappeared, and the skin is regaining its soft and pliable nature.

This is the second case of lupus the doctor has treated by means of X-ray exposure. The first was entirely cured of a lesion on the forehead which had lasted, in spite of all treatment, for seven years. The patient has been away for four months, but reports no change in appearance of former lesion.

DR. D. W. MONTGOMERY.—This seems to be a clear case of lupus. The history, the nodules and the general clinical picture all go to confirm the diagnosis of lupus. There is, however, a great difference between lupus and skin tuberculosis; clinically, if not etiologically, and whether both diseases are caused by the tubercle bacillus is still an open question. The tubercle bacillus is, however, found in both lesions, and if they will both yield to X-ray exposure it leads one to question whether the exposure to these rays would not be of benefit in tubercular lesions of other sorts. Lupus is found to commence before the 16th year, but tuberculosis of the skin may commence at any age. The question of the two diseases being the same affection is disputed by many good observers, but claimed by others. I am strongly inclined to believe that they are not the same affection, clinically, even if they prove to be etiologically. Lupus, true lupus, is a very rare disease in this country, and particularly so in California. I do not remember to have ever seen a case of true lupus occurring in a native; but tuberculosis of the skin is fairly common.

DR. P. M. JONES.—According to the differentiation made by Dr. Montgomery, the first case I treated in this way was not true lupus, but was rather tubercular lesion of the skin, for it occurred in a man of about 50 years. It was, however, entirely healed by the X-ray exposure, and to date has remained healed. In regard to what Dr. Montgomery has said of tuberculosis in other regions. I have exposed three cases of clear tubercular lesion of the lungs, in all of which patients the bacilli could be found in goodly numbers in the sputum. The patients all improved, the bacilli disappeared from the sputum, the night temperatures ceased, and now the patients say that they "feel perfectly well." I do not say that the patients were cured by the X-ray exposure, for it may have been spontaneous cure in all of them, but they certainly are now well, and also just as certainly had tuberculosis of the lungs at the time treatment was commenced.

(To be continued.)

New York County Medical Association.

Stated Meeting June 19, 1899.

ACUTE BRONCHITIS—A SYMPTOM; ITS TREATMENT FROM AN ETIOLOGIC STANDPOINT.

DR. THOMAS F. REILLY read a paper with this title, and showed that the inflammation of the mucous membrane of the respiratory tract is only a small part of the disease process, and that, as a rule, the bronchitis which so many physicians strive to treat, is only a symptom of a vitiated state of the constitution. A preliminary throat irritation almost invariably precedes, by several hours, an attack of acute rheumatism. Such a conception of acute bronchitis is of the greatest value in connection with the treatment. The therapeutics of acute bronchitis should consist in something more than the administration of nauseating cough mixtures. Probably the most common cause of bronchial catarrh in children is the elimination of toxic products from the gastro-intestinal tract. In most juvenile institutions attacks of bronchial catarrh are especially frequent after visiting days, and can be traced to the sweets and dainties given the little ones by their visitors. A judicious evacative treatment will usually banish the unpleasant symptoms very speedily, far more so than if our efforts are directed toward the bronchial catarrh *per se*.

The most common etiologic factor in the cases of bronchial catarrh seen in private practice is that toxic condition described under the general name of lithemia. The speaker referred to the very common experience of being able to stand a wetting or exposure to inclement weather in the country without developing bronchitis, while the same person would "catch cold" in the city under far less provocation. The experience of Nansen and his associates in the Arctic region was very signifi-

cant in this connection. Although these men had been exposed to the most bitter cold and trying climatic conditions they hardly knew what it was to suffer from ordinary colds, but no sooner had they returned to civilization than almost all of them developed colds. This would seem to bear out the theory of the infectious nature of bronchitis; the germ-free air of the Arctic region prevented these men, in spite of the exposure, from developing these affections of the respiratory organs which would certainly have followed a much less exposure in a more impure air.

With reference to the treatment, he said that from time immemorial expectorants have been used in cases of bronchitis, and they doubtless relieve the present distress, but it is very problematic whether they really exert any curative action. Ammonia preparations probably owe much of their action to their stimulating properties. The most rational treatment consists in efforts to eliminate the toxic products which are the primary cause of the bronchial inflammation.

NON-MALIGNANT STRICTURES OF ESOPHAGUS AND THEIR TREATMENT.

DR. HENRY MANN SILVER read a paper on this subject. He gave a careful review of the literature, and also reported the case of a child 4 years old, who had come under his observation last October with a stricture of the esophagus, the result of drinking a corrosive liquid. A No. 11 bougie was obstructed at a distance of 9 $\frac{3}{4}$ inches from the teeth, and, as the child was failing steadily, gastrostomy was performed. A month later retrograde dilatation was begun, and this part of the treatment was greatly facilitated by the use of an electric headlight and a series of endoscopes made after the general pattern of the Kelly cystoscope. In January dilatation with bougies passed in through the mouth had been commenced, and on April 18 the gastric fistula was closed. During the whole treatment there was no leakage and no irritation of the surrounding skin. A peculiar feature was a persistently subnormal temperature in the morning. It is worthy of note that the passage of the metallic bougie could be satisfactorily watched with the aid of the fluoroscope.

Turning to a consideration of the treatment in detail, the author said that when a powerful corrosive had been swallowed, giving rise to much inflammation and to the rapid development of a stricture of the esophagus, or when the regurgitation of a considerable quantity of food indicated that a distinct pouch had been formed, he would favor gastrostomy; if, however, there had been but little inflammation, and there was not much regurgitation, gastrostomy would seem to be the better operation. By the insertion of several silk sutures into the stomach, this viscus could be examined with ease, and this should always be done before deciding whether the operation should be completed as a gastrostomy or a gastrostomy. Dr. Abbe devised the ingenious method of dilating the stricture by bougies introduced from below, and then dividing the stricture with a string—the so-called "string-saw" method. During this dilating process of treatment the patient should be encouraged to eat solid food. The very brilliant results from gastrostomy and retrograde dilatation should point out the value of timely surgical intervention; if long delayed, the prognosis becomes much more grave.

DR. GEORGE WOOLSEY, speaking of retrograde dilatation and its advantages, said that much difficulty was often experienced in finding the cardiac end of the esophagus, largely because of the defective anatomic descriptions. A little practical "wrinkle" in this connection is to pull down on the lesser curvature of the stomach, and then cause the bougie to follow this curvature. Having once succeeded in passing the bougie, one or more strings should be attached to the bougie and brought out at the mouth. He condemned internal esophagotomy.

DR. WILLY MEYER advised, for strictures of the lower third of the esophagus, the employment of Abbe's string-saw method, although admitting that while the immediate results were often

good in dense strictures, they were often disappointing later on. He exhibited two adult patients on whom he had done gastrostomy by one of the modern methods. The fistulae were watertight.

DR. JOSEPH D. BRYANT spoke of external esophagotomy, and also described a modification of the string-saw method which he had devised with the object of eliminating certain objectionable features of that otherwise very useful procedure. He said that in doing an external esophagotomy, the low operation is preferable because the distance to the cardia is thereby lessened. In opening the esophagus, care should be taken to make the incision sufficiently posterior to avoid injuring the recurrent laryngeal nerve.

DR. ROBERT ABBE said that he had accidentally hit upon the string-saw method while endeavoring to pass the bougies, with strings attached, on a case under his care about seven years ago. One of the bougies being hugged tightly, he had moved the silk to and fro, and found that the bougie had not only been freed, but that he could then pass, in rapid succession, several bougies of larger size! The patient on whom he had first tried the plan was still alive and well, and free from any return of the stricture. He recently applied this same string-saw method very satisfactorily to the treatment of a case of chronic laryngeal stenosis.

DR. JOHN A. WYETH pointed out that a very great deal could be gained in cases of esophageal stricture, whether malignant or benign, by prolonged rest of the part. For this reason he advised gastrostomy early, and asserted that if this treatment were adopted it would often be unnecessary, after a few months of such rest of the esophagus, to use bougies at all.

DR. MAX EINHORN urged the claims of the esophagoscope, an instrument which he considered superior to the endoscope. He also alluded to those rare cases known as spasmodic strictures of the esophagus.

DR. B. FARQUHAR CURTIS reminded those present that while the surgical procedure advocated by the previous speakers had accomplished excellent results, and were the safest and best at present known for this unfortunate class of cases, still the treatment was often full of disappointment. Such strictures were very prone to recur. They should be treated on the same principles as strictures of the urethra. The beauty of the string-saw method is that the strings can be kept in place and the treatment extended over a period of many weeks, during which time the patient's general nutrition can be improved.

Cleveland Medical Society.

Meeting Held June 23, 1899.

INTESTINAL OBSTRUCTION FOLLOWING ABDOMINAL SECTION EITHER IMMEDIATELY OR REMOTELY.

DR. J. B. DEAYER of Philadelphia presented this topic. He prefaced his remarks by detailing the histories of eight selected cases. Intestinal obstruction following operation is due either to paresis, the result of sepsis or traumatism, or to mechanical causes. The latter form causes 2 per cent. of deaths after abdominal section, and wherever suspected to exist invariably indicates immediate reopening of the abdominal cavity to free the adhesions. Most commonly the intestine is adherent to a fixed surface that has been denuded of its peritoneum. Peristalsis then causes kinking and obstruction. Two coils of bowel may adhere, in which case obstruction is often due to bending over the pelvic brim or the edge of an adherent omentum. Rarely, bands of adhesions may be found running in various directions, and occasionally a portion of bowel has been included in a ligature. Postoperative paresis or septic peritonitis are the only conditions with which mechanical obstruction can be confused. The latter may be distinguished by its more sudden onset, by the absolute constipation with inability to pass flatus, the late occurrence of vomiting, the lack of correspondence of temperature and pulse with the evident

gravity of the case and the absence of all septic symptoms. Cases of acute abdominal pain, with absolute constipation and nausea, following an abdominal operation, even if at some interval, demand immediate incision. As to preventing the formation of adhesions, an early operation in a case in which it is indicated has decided advantages over a late one. Operation should be expeditious, the viscera should be handled as little as possible, and air should be kept out of the abdominal cavity as much as possible. After symptoms of mechanical obstruction have continued for twenty-four hours, the results of secondary operation are not favorable. In these cases appendicitis must always be thought of, as, perhaps owing to the frequent ill-advised use of opium, it is more often called intestinal obstruction than any other intra-abdominal ailment. All stumps should have peritoneum drawn over the raw surface, and the peritoneum should not be injured with irritating solutions.

DR. C. A. HAMANN noted the occurrence of obstruction from the ring of constriction left after an operation for strangulated hernia. This ring frequently sloughs, adhesions form and obstruction results. Such cases have rise of temperature for some time following operation.

DR. A. F. HOUSE asked whether the dry or the wet aseptic method of abdominal operation was most likely to be followed by formation of adhesions.

DR. HUNTER ROBB remarked that septic infection was the most common cause of obstruction following operation. He thoroughly cauterizes all pedicles and stumps before returning them to the abdomen, and thinks that has some influence in preventing the formation of adhesions. In every case he places 300 to 500 c.c. of salt solution in the abdominal cavity before closing up, and thinks that also has a beneficial effect in this respect.

DR. F. E. BUNTS expressed surprise at the fact of obstruction occurring so late—even several years—after operation. He commended the speaker for maintaining that the surgeon should refuse to operate in any case which has passed into the hopeless stage, and thought all surgeons should pay more attention to this point. He could not see how the placing of a small amount of saline solution in the abdomen could have any effect in preventing the formation of adhesions, as it is all absorbed in a very few hours.

DR. W. H. HUMISTON said he either covered all stumps and denuded spots with peritoneum, or if time for this was lacking, he cauterized with a 95 per cent. solution of carbolic acid. In his experience, packing with iodoform gauze had had unfavorable results.

DR. DUDLEY P. ALLEN said his experience with obstruction due to mechanical causes was very limited, the septic form being much more common. He did not favor immediate interference unless the obstruction was certainly absolute, as he had seen cases of partial obstruction recover under small doses of opium with rectal feeding. Cathartics aggravate the condition. Ordinarily he used nothing in the abdominal cavity when operating, and did not think this favored adhesions. If he used anything it had been sterile water. He agreed with the speaker that it was important to handle the intestines as little as possible, and to be expeditious.

DR. M. ROSENWASSER had had little experience in these cases. Where the mechanical obstruction was not complete tentative measures sufficed as a rule, but when it was complete early operation was imperative.

DR. DEAYER, in closing, said he had had no experience with the cautery in abdominal work. He thought dry gauze in contact with peritoneum more likely to disturb the endothelium than wet gauze. Undoubtedly where only partial obstruction existed the surgeon might delay incision, give very small doses of opium and feed by the rectum. It is often difficult to at once distinguish the complete from the incomplete obstruction, and in such a case he would advise immediate incision.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance	\$ 5.00
Foreign Postage	2.00
Single Copies	10 Cents

In requesting change of address, give old as well as new location.

Subscriptions may begin at any time and be sent to

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
No. 61 Market Street, Chicago, Illinois.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, 100 Washington St., Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership.

On receipt of the subscription to the weekly JOURNAL of the Association will be forwarded regularly.

These new members of the Association should send their annual subscription direct to the Treasurer, Dr. Henry P. Newman.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the Editor, and all communications relative to the business of the JOURNAL, proof-sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 61 Market Street, Chicago.

Original communications are accepted with the understanding that they are exclusively contributed to this JOURNAL.

SATURDAY, JULY 15, 1899.

TREATMENT OF PERFORATING ULCERS OF STOMACH AND DUODENUM.

The prognosis of perforating ulcers of the stomach and intestine would seem to improve in the same degree as the practitioner learns to make early diagnosis of these cases and to immediately secure surgical treatment. According to Lennander, who presents a study of his cases of peritonitis following ulcers of the stomach and duodenum on which operations were made during the years between 1889 and 1897¹, the statistics so far published show that one-fourth to one-third of the cases of perforating ulcers of the stomach or duodenum which are operated on are saved. The first condition in order that a large number of cases of this kind may be saved is, that physicians abandon the idea that their first duty in such cases is to alleviate pain. The pain should, on the other hand, guide to a diagnosis, the principal element of which is: here must be operated at once, or, an operation is not indicated, at least not an immediate operation. If the treatment is begun with a large dose of morphin and warm applications, then the patient as well as the physician are led into false expectations, which are succeeded by cruel disappointment when the abdominal distension indicates the existence of a diffuse peritonitis. Even when it is determined that an immediate operation should be made, little or no morphin should be given, because of the danger of intestinal paresis after the operation.

According to Lennander, the diagnosis of perforating ulcers of the stomach and duodenum rests on the history of previous symptoms of ulcers, on the appearance of violent pain in the epigastrium, with or without symptoms

of shock, with or without vomiting, on the rigidity of the abdominal muscles, and on local tenderness.

The abdominal incision should at once be made of sufficient extent to exactly determine the situation of the perforation and the extent of infection of the peritoneum. The perforations, which may be situated on the anterior or posterior surfaces of the stomach, or on any of the different parts of the duodenum, should be closed by bringing the serous surfaces together over a large extent and without tension, preferably by two rows of Lembert sutures. In case such closure is not possible, then the perforation should be covered by omentum, and the region separated from the rest of the abdominal cavity by means of tampons.

In the vicinity of the orifices of the stomach attention must be paid to the prevention of narrowing or bending during closure of the ulcer. This narrowing is best avoided by uniting the surfaces in a vertical direction with respect to the long diameter of the stomach or the superior horizontal part of the duodenum. When the perforation has been closed, all parts of the abdominal cavity which appear to have been infected are cleansed in the most painstaking manner, especial attention being given to the left subphrenic space. Inasmuch as a high degree of meteorism prevents careful cleansing of the abdominal cavity, an early operation is specially indicated. All those places in which exudate and pus are likely to become collected should be drained by means of gauze or tubes.

The prognosis depends principally on the length of time at which the operation is made after the perforation has taken place, also on the quantity and quality of the contents of the stomach which have become extravasated into the peritoneal cavity. The majority of the deaths have been caused by diffuse peritonitis; next in order come the subphrenic abscesses, and in a few cases pelvic abscesses.

While pelvic abscesses are readily diagnosed and operated on, the accumulation of pus in the subphrenic spaces is more difficult of treatment, because they are likely to early infect the pleural cavity, the lungs and the pericardium, and to become the starting-points of pyemia and septicemia. Subphrenic abscesses should not be emptied by means of transpleural operations in other cases than those in which an empyema exists or in which the pleural cavity is obliterated. In all other cases the incision should run along the costal arch, together with, in some cases, resection of the ribs below the lower limit of the pleura, according to the method originally proposed by Lannelongue in 1887.

When a perforating gastric or duodenal ulcer has been diagnosed, but operation for some reason or other not determined on, then there should be given no food whatsoever by mouth for at least one week, even if the patient's general condition improves so greatly that the original diagnosis becomes questioned.

Lennander's cases may be summarized as follows: No operation: One case of subphrenic abscess following

¹Aisberättelser från Akademiska Sjukhuset, Upsala, 1897-8, p. 93.

perforation of the stomach, in a woman 36 years old; recovery. Eleven cases were operated upon. In six there was a diffuse peritonitis, which in two cases followed perforation of duodenal ulcers, three cases perforation of gastric ulcers on the anterior surface of the stomach, and in one case on the posterior surface. In four of these cases the ulcers were found, and in three they were completely closed by means of sutures, in one incompletely sutured and tamponed. One of the cases operated on fifteen hours after the perforation died from diffuse peritonitis, in the other three the peritonitis subsided. Nevertheless, one died on the seventeenth day after the operation, from sepsis following an incompletely drained subphrenic abscess; another died two months and twenty-two days after the operation, from purulent pericarditis, due to a small subphrenic abscess; the third case died three and one-half months after the operation, having left the hospital in apparently good condition, on account of hemorrhage from the bowels. The other two cases of diffuse peritonitis, in which the ulcers were not sutured because not found, died three to four days after the operation. In five cases there was found a circumscribed suppurative peritonitis, which, in two cases followed a ruptured duodenal ulcer, in two cases ruptured gastric ulcer, and in one followed the taking of phosphorus for the purpose of producing abortion. Of these cases three recovered after operation, while two died.

VALUE OF MEAT EXTRACTS.

The flesh food which is taken into the human system consists of proteids with about .3 per cent. of creatin. The nitrogenous waste which is thrown out of the system by the kidneys consists of urea with about .3 per cent. of creatinin, the latter being an anhydrid of creatin. We would therefore be inclined to the belief that the proteids, when they have served their purpose in the human economy are eliminated as urea and the creatin as creatinin. The proteids are essential in a dietary because they repair muscular waste, and this waste is excreted as urea; but the excreted urea is not a measure of the muscular waste for when an excess of proteids is ingested that which is not required for metabolic processes is oxidized to urea with the production of heat and energy, and immediately eliminated. The ingestion of an excess is followed so promptly by the excretion of an increased quantity of urea that no time is given for the building up and breaking down of muscular tissue. Creatin is generally considered to be a transition product in the retrogression of albuminoids to urea, but the relation between it and the more complex molecule on the one side and the simple molecule on the other is not clearly defined. Urea is formed in the liver; but if the creatin of the metabolic processes be converted by this organ into urea, why should the creatin of the excess of albuminoids taken as food be excreted as its anhydrid instead of undergoing a reduction to urea in its passage through

the liver? Professor J. W. Mallet¹, of the University of Virginia, has shown by some recent experiments that creatin introduced into the alimentary canal is not concerned in metabolism, but is eliminated as creatinin. First he elaborated a practical method for the separation of urea, creatin and creatinin from the urine. This method was tested by adding known quantities of these substances to normal urine. Of the urea 96.4 per cent. was recovered; of the creatin 86.9 and of the creatinin 95.0 per cent. He then administered the flesh basis in various doses to the human subject in a series of experiments and collected the urine of the succeeding twenty-four hours for analysis when creatin was ingested in 5, 10 and 15 grain doses from 96.18 to 98.24 per cent. was recovered. When creatin was ingested in doses of from 3 to 15 grams, it was evident that nearly all of that swallowed was converted into creatinin and eliminated in this latter form, very small amounts, however, escaping and undergoing elimination unchanged. The creatin recovered, as such, or represented by creatinin, constituted 95.73 to 98.92 per cent. of that taken into the system. The quantity of urea in these instances was practically unaltered. The main conclusion to be drawn from the experiments is manifestly that by far the larger part of the flesh bases ingested, if not absolutely the whole, does not undergo metabolism with the production of urea, or anything else, but is eliminated by way of the kidneys. It may also be fairly concluded that these bases occurring in food may be entirely disregarded as sources of energy. Hence it is important for analysis, in determining the nutritive value of meats and of articles of food prepared from meat, to distinguish between the nitrogen of the flesh bases and that of the albuminoid substances. The proteids build up the nitrogenous tissues and furnish muscular energy and heat, while the flesh bases are not available for any of these purposes. If the nitrogen of the food be made the basis for the calculation of the proteids without excluding the nitrogen of the creatin present, the food value will be greatly overestimated. Physicians generally recognize the absence of nutritive value in these extractives, but their use is frequently prescribed on account of their reputed value as nerve stimulants. Professor Mallet's observations on the physiologic effects of the doses administered tend to deprive them even of this credit. The most decided effect observed was a retardation of the action of the heart; and if this was accompanied by any change in the force of impulse in the radial artery it was probably a diminution of force. In the meat extracts the presence of salts of potassium has to be considered, but aside from this such extracts are reduced by these observations from the rank of foods or medicines to that of mere condiments or flavoring matters.

BY THE will of the late Joseph Murray, \$200 has been devised to the Germantown (Pa.) Hospital, and a like sum to the Presbyterian Hospital of Philadelphia.

¹The Physiological Effect of Creatin and Creatinin and Their Value as Nutrients. Bulletin No. 66, U. S. Dept. of Agriculture, 1898.

TUBERCULOSIS IN ANIMALS.

It is evident that the stock and dairy interests are becoming alarmed at the prospect of wholesale slaughter of their stock by reason of the convictions of the public on the subject of the contagiousness of tuberculosis. It is not wise to disregard this alarm. The community has no better right to inflict unnecessary harm by slaughter of stock than it has to inflict such harm by unwise tolerance of an evil. As a further consideration, the execution of law and, in fact, the law itself can never rise much above the level of public sentiment. Further, the defense of a private interest gains enough by intensity and directness to offset the larger clientele of a public interest. On the other hand, the farmer will eventually suffer enormous loss unless something is done to eradicate this disease. All statistics on the subject show its rapid spread; for example, the slaughter-house record of Leipzig are as follows: 1888, 11.1 per cent. tubercular; 1889, 14.9 per cent.; 1890, 22.3 per cent.; 1891, 26.7 per cent.; 1895, 33.3 per cent.; for Berlin, 1883, 2.86 per cent. tubercular, and 1895, 15.45 per cent. It is probable that the increase among dairy animals has been still greater. These figures are convincing even after allowing the largest possible margin for error.

As to its prevalence, there has been wide variance in the experience of writers. At Kiel the slaughter-house statistics show that 66 per cent. of the Danish cattle have the disease. In Illinois the Board of Live Stock Commissioners report tuberculosis in 20 per cent. of 2200 cows examined. This is among dairy herds. The Wisconsin station has found tuberculosis in 10 per cent. of the cows it has examined. The Vermont station has examined one-fifth of the cows of that state, and from 2 to 3 per cent. have been found tubercular. In Germany, in 1895, meat condemnations by reason of tuberculosis entailed a loss of one and a half million dollars. The disease being so common and increasing so rapidly the farmer cannot afford to ignore the question, view it as narrowly as he will.

The question whether human and bovine tuberculosis is the same disease was answered affirmatively by Villemin, Chauveau, Klebs and Schuppel in the years 1868 to 1878. Volumes would be required to record the confirmatory work that has since been published. Theobald Smith of Boston demonstrated a difference in virulence between tubercle bacilli obtained from cows and tubercle bacilli from the human subject, but this in no wise disturbs the original conclusion that the diseases are identical. What shall be done with tuberculous animals is a very important question, and, as a subsidiary proposition, how are we to know that a given animal is tubercular? There is no question as to the advisability of using tuberculin. Eber, as a result of 563 inoculations, found 74 mistakes or 13.14 per cent. Bang, as the result of 515 inoculations, found 50 mistakes, 9.7 per cent. This allows for errors of every kind. 1. There may have been a slight tuberculosis in an unusual locality, the lesion having been overlooked. 2. One reaction protects

against another for six months in many instances. 3. The great percentage of failures is in advanced tuberculosis, where the general debility and the physical signs leave no possibility of escape for the sick animal. Bearing these things in mind, the accuracy of the test is very great. Says Conn: "In detecting the presence of tuberculosis in our animal, then, tuberculin is very accurate; too accurate, indeed, to be a guide for the indiscriminate slaughter of reacting animals."

Shall the state slaughter all animals which respond to tuberculin is a question of importance. Bang, of Copenhagen, objects to this and suggests the following plan:

1. The farmer consents to accurately follow out directions given him by the veterinarian. Without this the whole plan is useless.
2. The herd is tested with tuberculin and on the results an infected herd is separated into three groups.
3. Group No. 1 is composed of healthy animals, and these are so handled as to keep them healthy.
4. Group No. 2 is composed of animals which, by tuberculin and by physical signs and symptoms, show advanced tuberculosis. These are killed at once. The meat is sold subject to inspection.
5. Group No. 3 is composed of those animals showing incipient tuberculosis. These animals are separated as to stables, pastures, troughs, attendance, etc., from Group No. 1.
6. Animals in Group No. 3 are kept under good hygienic condition; their milk is sterilized before using.
7. The calves from No. 3 are separated from their mothers and raised on sterilized milk. They are inoculated with tuberculin and on the results depends whether they are placed with Herd No. 1 or No. 3.
8. Every six months the healthy herd is inoculated with tuberculin, and reacting animals are placed in Herd No. 3.
9. Animals in Herd No. 3 that no longer react are not placed in Herd No. 1.

The statistics of an experiment along this line, lasting five years, is as follows: 1892, number of animals in Herd No. 3, 131, number in Herd No. 1, 77; 1897, number in Herd No. 3, 48, number in Herd No. 1, 155. This and other observations on this method demonstrate great remedial value in this, which is the most economic of all suggested plans. It demands the co-operation of the farmer. In this it does not differ from any other plan. Any will be inefficacious until the stockman enters fully into the spirit of it. To this end accurate reliable information must be carried into the home of everyone. In the meanwhile, many milkmen will see that it is to their financial interest to guarantee freedom from tuberculosis. To all asking it, the state boards will go to investigate, advise and act as action is demanded. The state herds will be kept clean. The market for tubercular animals for breeding purposes will narrow year by year, and so step by step education will spread. But at the present time the animal and his owner must be handled with the same moderation with which we handle the man who has tuberculosis.

THE MEDICAL CRISIS IN FRANCE.

The *British Medical Journal* recently gave a summary of a dissertation presented to the University of Lyons by M. Ernest Perthuisot, who discusses the "Medical Crisis" in France. The causes assigned are: 1. There are too many doctors. 2. The profession in France has in one way or another suffered discredit in recent years. 3. Quacks are allowed to take the bread out of the mouths of legally qualified practitioners. As regards plethora, M. Perthuisot shows that the condition is becoming acute. The number of doctors is increasing out of all proportion to the increase of population. He estimates that while the vacancies left in the ranks of the profession by death or retirement amount to six or seven hundred a year, the annual output of graduates by universities is at present more than eleven hundred, and the increase is so steadily progressive that in his opinion the number of doctors in France will within a limited time, perhaps ten years, have doubled itself.

CONGENITAL TUBERCULOSIS.

While congenital tuberculosis in both men and the lower animals is rare, there is no doubt that it does occasionally occur. More often than which is transmitted from parent to offspring is a predisposition to the disease, the activity of which is augmented by exposure to infective conditions. An instance of congenital tuberculosis in the calf was recently reported by Ravenel, to the Pathologic Society of Philadelphia, and specimens from a further example of the same kind were exhibited by MacFadyen at a late meeting of the Pathological Society of London. As a rule the calves of tuberculous cows are born free from tuberculosis, and fetid infection is usually, if not always, associated with tuberculosis of the placenta or of the uterus. Dissemination takes place under these circumstances through the blood-stream, as indicated by the wide-spread and discrete distribution of the lesions.

TRANSPLANTATION OF OVARY.

The *Medical Press and Circular* does not approve of the operation of ovarian transplantation. It says: "To leave a little bit of healthy ovarian tissue, when this is possible, is doubtless a good instance of conservative surgery, but to insinuate a whole ovary, belonging to another woman, into the peritoneal cavity, is hardly a procedure that commends itself to one's surgical instincts, and is likely to set up serious mischief." Whether serious mischief here likely to be set up is medical or surgical mischief is uncertain; the fact that aseptic transplantation is possible has been proven, and if so, what is the damage thus produced? One can conceive that such operations might lead to curious speculations as to heredity, but that these might extend to the point of producing "serious mischief" seems hardly probable to say the least. Should it be so, the questions would not then be medical, but legal or social ones, and our surgical instincts are not directly affected by matters so far ahead as that, provided they do not legally involve the operator. Ovarian transplantation may or may not have a brilliant future before it—that is a question on which we venture no opinion—but it has not thus far been proven dangerous nor mischievous.

INFECTION BY TELEPHONE.

Infection by telephone is again to the front. A Chicago doctor has found germs and calls attention of the public to the same. The Board of Health is called on to act and the newspapers have a fresh topic for scare-heads and sensational articles. The *JOURNAL* has already expressed an opinion on this subject, but under the circumstances it may be justifiable to notice a few facts that were not stated before. The whole subject of infection by telephone was gone over by the Health Department of Chicago four or five years ago and with the result that in all the public telephones examined no evidence of special danger of infection was discovered. The use of the transmitter requires no direct contact or inhalation if the user keeps at the proper distance, and therefore the peril is not excessive even if germs exist. As they have not been found to any extent, the risk may be said to be insignificant. The explanation of these periodic revivals of the telephone scare may possibly be found in some commercial speculation, the intended introduction of an "aseptic transmitter," or some similar enterprise for which the newspapers are being "worked." Commercial enterprise without principle seems to be one of the orders of the day and, we regret to say, appears to seek a special field in the prevalent imperfect and erroneous vulgarization of medical facts.

EXTERMINATION OF MALARIA.

The Liverpool School of Tropical Medicine will send an expedition to Sierra Leone, Africa, next month, the object being to ascertain whether it is possible to exterminate from a small area the malaria-bearing mosquitoes which infect some parts of that region. The expedition will consist of men connected directly or indirectly with the school, and selected by their fitness for the special work. One of these will be Major Ronald Ross, lecturer in tropical medicine in the University College, Liverpool, who published a paper on "The Possibility of Exterminating Malaria from Certain Localities by a New Method," in the *British Medical Journal* for July 1. The success of his method of ridding the locality of the mosquito depends on the fact that in their predeveloped stage they are little wriggling larvæ, inhabiting stagnant puddles, especially in marshy regions. The ridding the locality of the pest will be made by filling up or draining the land. Whether the idea is new is doubtful, for it has been generally recognized in this country that mosquitoes are to be found in greatest numbers in low wet grounds and the corollary of this would be to drain, or eliminate the moisture. But we do not wish to belittle the importance of the possible scientific value of the proposed expedition; on the contrary we hope that it may result in such an increase of knowledge in reference to the disease and its cause that a method of eliminating it may finally result. We, in this country, have reasons now, if never before, for being deeply interested in this, as well as all tropical diseases.

HYSTERIC MISALLIANCES.

One of the unpleasant facts to patriotic Americans is the success of fortune-hunting dukes, etc., in captivating American heiresses, and the tendency of certain native snobs to take satisfaction in such events. Why any self-respecting citizen of this country should see any-

thing desirable in exchanging sovereignty in a republic for subjection, or the privilege of becoming even a highly titled subject, in a monarchy, is not self-evident in the nature of things; it is really a degradation politically and should also be socially. It becomes somewhat more mortifying, however, when these events and tendencies are regarded abroad as characteristically American, and made the subject of elaborate medico-sociologic discussion. A French medical expert has utilized and made prominent some of these American women as examples of sexual and hysteric morbidity, their prominence probably leading him to their selection, though equally numerous instances could without question have been found among his own countrywomen. One instance that he quotes is well known in this country as a most pronounced example of neurotic and insane heredity. Another is hardly American but more properly Italian, as the name indicates. Notwithstanding these facts, there are still enough prominent examples of European misalliances by American women to keep us still unpleasantly before the world and serve as texts for foreigners to dilate on American degeneracies. The medical side of the subject being thus prominently brought forth, while not pleasant, has perhaps the advantage that it may aid in calling the attention of a certain class to the unfortunate aspect in which they appear abroad.

THE KISSING BOGEY.

During the past week or two the eastern section of our country has, according to the newspapers, been suffering from the invasion of a new enemy to human comfort, the "kissing bug." It is said to attack sleepers and produce an acute swelling, usually on the lips—its favorite point of attack—hence the popular appellation. So far we have seen little mention of it in medical literature except in the Philadelphia correspondence of the *Medical News*, which gives a delightfully indefinite description of the creature that is supposed to be the offender, calling it a parasite of the hedging "about an inch in length, of dark brownish red color, and having six legs and long antennae." The name given it is, however, a better identification—"opiscaetus" (opiscetus?) personatus, a European species that is quite capable of performing the accredited "kissing bug" role. Other newspaper identifications have been published and it is possible that every kind of nocturnally received puncture, from a flea bite up, is being credited to this new and fashionable cause. Reports of its performances are coming in from all parts of the East and Middle West, and even deaths are reported from its bite. It is hardly probable that we have any general exaggeration of the frequency of any one species, though there may be a local increase. We must therefore assume, as most likely, that a large proportion of the cases reported have in them a mental element due to the newspaper reports. Cases of painful stings or bites during sleep are not uncommon. We have nearly all of us experienced them or observed their effects, but any ordinary or extraordinary event of the kind just now is credited to the "kissing bug." The probability that it is the species referred to by the Philadelphia correspondent, or some allied one of the

family, is the greater, as that insect is a well-known infester of dwellings and its bite is sufficiently painful and serious to meet the descriptions. Other species, however, may be implicated, several of the water-bugs, *Notonecta* and *Belostoma*, are said to be poisonous, and there is a possibility that the electric light so general in our towns and villages may attract them in unaccustomed numbers so as to render more frequent the accidents of their bites. For the most part, however, we think the present epidemic of "kissing bug," except, perhaps, locally on our eastern border, is largely a matter of the imagination.

SHOULD THE PHYSICIAN PRESCRIBE PATENTED DRUGS?

An editorial in the *Medical News* (July 8), after defining a patent medicine in the technical and restrictive sense, answers the above questions affirmatively: 1, because the writer thinks these substances are of a very decided value and, therefore, it is to the interest of the profession to use them; and 2, because the physician has no right to deprive his patients of chemical products which he knows are especially indicated, simply because he does not approve of the methods by which they are manufactured or protected. If the strict definition of the *News* is accepted, then little objection could be made to the views expressed. We heartily endorse the sentiments contained in the concluding paragraph of the editorial: "There is a class of preparations which we believe physicians should carefully avoid using, namely, medical substances advertised to the laity. These should be avoided not from the business standpoint that they deprive the profession of practice, for this they do not do, because patients who take these preparations usually do so with such disastrous effects that the profession is pecuniarily benefited in the end by acute cases being transferred into chronic ones, but because the advertisement of these preparations to the laity causes non-medical readers to dose themselves with compounds which in many cases are not only useless but distinctly harmful. The products of those manufacturers who sell a preparation to the medical profession with the right hand and the same preparation to the laity with the left should also be carefully avoided in writing prescriptions."

LANDRY'S PARALYSIS.

While the precise nature of the disorder first described by Landry, and hence known by his name, remains unknown, there seems good reason for believing that the symptomatic manifestations of the affection are dependent on deranged functional activity of the peripheral motor neuron. Going a step further, it may readily be conceived that the disturbance of function is due to the activity of toxic substances introduced from without or generated within the body as a result of the vital activity of micro-organisms or of derangement in the bodily metabolism. However this may be, in some cases the symptoms have been indicative of peripheral neuritis, in others of anterior poliomyelitis. Of the infectious nature of the disease the presence of constitutional symptoms of greater or less gravity may be accepted as evidence. Symptoms of the affection consist in gradually

progressive and extending motor paralysis of flaccid type, with loss of reflexes, preservation of electric reactions, escape of sphincters, slight if any disturbance of sensibility, rapidity of course, and usually a fatal termination. It will thus be seen that the diagnosis may often be attended with considerable difficulty. Some of the points of differentiation from diseases that it may simulate or may be simulated by it are laid down in a brief communication presented by Haynes¹ at one of the recent meetings of the Brooklyn Pathological Society. In cases of multiple neuritis there is usually a history of ingestion or of exposure to the action of some poison, or of a preceding acute infectious disease; though the onset is sudden, the course is slow, sensibility is involved, electric reactions are lost, muscular atrophy takes place, and the disease usually terminates in recovery, sometimes after a tedious convalescence. Transverse myelitis is usually preceded by a history of injury or pressure, or of syphilis, or other infectious disease, and the symptoms are localized, sensibility and the sphincters are involved, and muscular atrophy takes place, with alteration in the electric reactions. Diffuse myelitis is attended with more pronounced constitutional and spinal symptoms, while in disseminated myelitis the spinal symptoms are scattered in accordance with the number and situation of the foci of disease. Meningomyelitis is attended early with muscular spasms, pain, fever, and other marked constitutional symptoms, the symptoms of meningitis preceding the development of palsy, while cerebral symptoms are present in the cerebrospinal form. In the ordinary form of anterior poliomyelitis, as seen in children and adults, there is limitation of the paralysis to certain groups of muscles, and in polioencephalitis, the cortex and cranial centers are implicated; while in Landry's paralysis, only the efferent spinal motor nerves and the anterior horns of the gray matter of the cord and the medulla are involved. The morbid process consists in an exudative inflammation, with cellular infiltration of the circumvascular sheath, degeneration of the ganglion-cells and loss of structural elements, with or without degeneration of the anterior roots. Haynes recommends, besides the usual remedies, antistreptococcal serum, as it has been found that animals infected experimentally with streptococci and their toxins exhibit changes in the nervous system that bear a striking resemblance to those that have been found in some cases of Landry's paralysis.

SPONTANEOUS GANGRENE IN CHILD, DUE TO DISEASE OF VESSEL WALL.

There have been a few instances described in which spontaneous gangrene has developed in rather young children; Reynaud has observed such cases. Leyden and others have described gangrene following typhoid fever and other infectious diseases. In a case described by Lehmann, symmetric gangrene, resembling senile gangrene, developed in a child 9 months old, apparently on account of changes in the vessel walls. Gœbel² describes the following case: For six weeks an eighteen months old child complained of pain in the left leg, which became blue, somewhat swollen,

and cold to the touch. The clinical diagnosis was gangrene due to obstruction in the anterior tibial artery. At the autopsy there was found pneumonia, necrosis of the tonsils, and thrombosis of the abdominal aorta and the left popliteal and anterior tibial arteries; the thrombi were oldest in the popliteal artery. Where the popliteal artery branches, and in the first portion of the anterior tibial artery, there were found the following pathologic changes: At many points the endothelium was absent, the intima and inner elastic coat somewhat swollen and split up into a thin network of fibers—a local endarteritis, due perhaps to primary injury of the elastic coat. The resulting roughness of the vessel probably induced the thrombus formation. The nature of the changes in the vessel remains obscure.

RELATIONS BETWEEN MENSTRUATION AND TUBERCULOSIS.

Both ovulation and menstruation, though distinct processes, have each a profound influence on the female organism. That they are affected by disease is well and generally known, but that they have other relations therewith has not been made the subject of extensive inquiry. It has been observed that the thyroid gland is sometimes enlarged at the menstrual period, and that in cases of pulmonary tuberculosis the menstrual discharge may be replaced by hemorrhage from the lungs. Some interesting observations in this connection have been made by Neumann³, who relates that some tuberculous patients present regularly during menstruation increased febrile reaction; and that even otherwise afebrile patients exhibit, either before or with the onset of the period, elevation of temperature, with or without changed or aggravated conditions in the lung, continuing for some days after the cessation of the period. This phenomenon should arouse suspicion, even when the general condition is satisfactory in the intervals. Sometimes the catarrhal state in an obviously diseased portion of the lung is aggravated, without fever, during the menstruation period. Instead of rough intensified breathing, crackling and crepitation, or even phenomena of consonance, are audible. If these phenomena recur repeatedly, with or without fever, in conjunction with menstruation, the prognosis must be guarded. Not rarely indications of increased destruction appear, during and following the period. In patients, in whom improvement appears to be taking place, the recurrence of crackling and rales during the menstrual period must give rise to caution. In suspicious cases or in patients apparently anemic only, it is not uncommon to detect during the menstrual period, in lungs believed to be sound, auscultatory signs of latent disease. In some tuberculous patients in whom the general condition exhibits no change at the beginning of menstruation, a recession of the respiratory symptoms is observed with the cessation of the period. This may be repeated at successive periods, and the prognosis is thus rendered the more favorable. From the foregoing consideration tuberculous patients should avoid before, during and directly after the menstrual period, all things that increase the existing irritative state and that contribute to the extension of existing and latent foci. They are thus

¹ N. Y. Med. Jour., May 27, 1899, p. 743.

² Deutsche Arch. f. Klin. Med., 1896, 63, p. 184.

³ Berlin. Klin. Woch., May 22, 1896, p. 455.

advised to rest in bed while being supplied with abundance of air and bland, nutritious food. Traveling during the menstrual period, by tuberculous patients, is to be interdicted.

Medical News.

THE U. S. transport *McClellan* recently arrived at quarantine, New York City, from Santiago, with two well-developed cases of yellow fever on board.

ARRANGEMENTS are being made in Hamburg, Germany, for an institute for the study of tropical diseases.

SCURVY is prevalent in the famine-stricken Volga region in Russia. Over fifty-five thousand cases have been reported.

AT THE recent commencement of Harvard University the honorary degree of A.M. was conferred on Dr. W. T. Councilman, formerly connected with the Medical School of the Johns Hopkins University.

DR. A. C. CROFTAN, Pasadena, Cal., leaves in a few days for Europe. He proposes to go direct to Vienna, to do special work on diseases of the chest, under Nothnagel. He will be gone about four months.

DR. WEBSTER FOX, Philadelphia, is in Europe. While away he will attend the meeting of the British Medical Association, and also the International Ophthalmological Society at Utrecht, Holland, in September.

DEATH from the use of chloroform as an anesthetic occurred in New York City on June 28, in the case of a boy of 9 years, to whom the chloroform was administered for an operation on the throat. The operation had not begun, however, when the death occurred.

DR. FAYETTE C. EWING of St. Louis will sail July 27, for London, to attend the International Otological Congress, as a delegate from the Western Oto-Laryngologic Association. Dr. Ewing has recently accepted the associate editorship of the *Laryngoscope*.

THE LONDON Cancer Society has commissioned Dr. A. E. Duffy to proceed to the United States for the purpose of collecting data regarding cancer, and to especially study the investigations being made at Buffalo, N. Y. A prize of \$50 has also been offered by the Society for the best essay on cancer.

ACCORDING to a recent decree a physician wishing to practice in Hungary must be a graduate of a Hungarian medical college, or have his foreign diploma accepted by one. This excludes Hungarians who have graduated at Vienna, and is also hard on Croats and others who reside in Hungary but do not understand Hungarian. The decree is for the double purpose of restricting the number of physicians practicing in the country and increasing the attendance at the universities.

DR. WOODS HUTCHINSON, at the last meeting of the Zoological Society of London, read a paper on tuberculosis. This mortality fell most heavily on the ruminant animals in the Society's gardens. Of 215 necropsies made during the last six months, 49, or 25.3 per cent. of the animals and birds presented lesions of tuberculosis. This mortality fell most heavily on the rudiments and gallina, and least so on the carnivores and raptores. Race seemed to have little influence on susceptibility, mode of housing but little more, but food habits much more. A close correspondence seemed to exist between immunity and the relative size of the heart in both birds and animals.

ADVISES through the United States Legation at Monrovia, June 7, confirm the report that a plague is raging at Grand Bassam in the French Ivory Coast country. This colony is adjacent to Liberia on the east coast, and to the British gold coast on the west. The disease is very similar to the bubonic plague, and is quite fatal. It is reported that at least two or three hundred people have already succumbed to the disease. Three European physicians are thought to have been victims. All homeward bound German steamers are quarantined against taking any African passengers to Germany.

THE AUTOMOBILE is of especial interest to physicians, but its high price places it beyond the reach of those whom it would most benefit. The *Gazette Medicale de Paris* suggests adopting the plan that is proving such a boon to the fishermen along the French coast; a company was formed for the purchase of small steam vessels for their use, in place of their untrustworthy sail boats. These are rented to the fishermen, who never could have accumulated sufficient capital to buy them. The writer urges capital to found a "medical automobile society" on the same plan, which might prove mutually profitable.

RELATIVE to the somewhat indiscriminate appropriations which New York City has been accustomed to make for the support of private charities, a committee of the Charity Organization Society has been making inquiry as to the methods of distribution of such appropriations in other cities and recommends that the New York City appropriations be limited to such agencies as children's institutions and hospitals, and be discontinued in the case of medical dispensaries; also that they be continued only to industrial schools until such are assimilated with the public school system, discontinued for fresh air work carried on by private societies and that appropriations to founding asylums and children's institutions be on a *pe capita* and *per diem* basis.

THE MEDICAL college founded in 1883 by French Jesuits at Beyrout, Turkey, has recently been recognized officially as the peer of the French colleges, its diplomas entitling the holders to practice anywhere in Turkey, France or its colonies. The *Journal de Médecine* protests most energetically against this order of things.

A LITERAL translation of the "Thousand and One Nights," into French, has just been completed by a young physician, Dr. Mardrus of Marseilles, a Mohammedan of Cairo. He is familiar with Arabian lore and life, but also thoroughly at home in Paris, where he completed his education. The combination of Parisian, Arabian and medical knowledge is said to have produced a rare work, as the author has traveled and observed much and had access to many unpublished manuscripts.

IN 1896, Dr. Levi Cooper Lane, founder of the Cooper Medical College of San Francisco, Cal., founded and endowed a course of lectures to be delivered annually and known as the Lane Medical Lectures. The course consists of ten lectures by one of renown or ability of note, selected at present by Dr. Lane, and after him by certain trustees, and the lectures are subsequently to be the property of Cooper College. William Macewen was the first to be invited to deliver this course, in 1896, and he was followed by Christopher Heath and Thomas C. Allbutt, in 1897 and 1898. The course for the present year, delivered June 28 to July 3 by Dr. Nicholas Senn, of Chicago, as previously noted in the JOURNAL, has been very well attended and awakened much interest. The

lectures were as follows: "Introductory;" "Traumatic Shock;" "Prophylactic Hemostasis;" "Treatment of Hemorrhage" (two lectures); "Gunshot Wounds;" "Wound Infection;" "Treatment of Wounds;" "Compound Fractures;" "Technic of Modern Amputations."

PRINCESS LOUISE of Coburg, daughter of the King of Belgium, has been definitely incarcerated in the Lindenhof sanitarium at Coswig, near Dresden, as two medicolegal experts at Vienna, with the concurrence of the Faculty of Medicine, have officially decided that she is mentally and morally irresponsible. They ascribe her condition to the commotio cerebri caused some years ago by a fall of nearly a hundred feet, in the mountains, and a subsequent typhoid fever.

EXCURSIONS for medical study are organized every summer in France to acquaint physicians with the watering places, springs, etc., of the country. This year Professor Landouzy is in charge, and will personally conduct the party to the Auvergne and other resorts, September 2 to 13. Half-fare railroad rates are given to the profession and the expense of the trip is 200 francs per capita, or about \$40 for the eleven days, hotels, etc., included.

FROM the *Lancet* of July 1 we learn that the 32 cases of plague in Egypt, previously referred to in the *JOURNAL*, have been spread over the two months of May and June and limited only to one town, but chiefly to one dirty corner of that town, a native bazaar. The victims have all been from the lowest class of natives and the lowest Europeans. The correspondent says that the present localization is confirmatory of the theory of place infection, capable of eradication by giving attention to cleanliness. The sanitary department is isolating cases, watching friends of the infected, cleansing the habitations and possessions of the patients, etc. Two policemen, not on police duty, and one hospital orderly had contracted the disease at the date of the correspondence, June 24, and the municipality of Alexandria had passed suitable sanitary measures. The writer says that the plague has done one good thing in emboldening the Egyptian Government to pass a measure which the sanitary officials proposed some time ago but which did not meet the approval of the General Government.

THE CHICAGO Health Department has inaugurated a new movement in sanitation—house-to-house instruction as to hygiene and sanitary matters. Some forty physicians, largely recent graduates, have volunteered to disseminate the information, making a regular canvass of their districts, pointing out defects and advising householders and parents as to the proper care of children, the abatement of nuisances, the methods of sterilizing milk and water, the needs of cleanliness, etc. The object is the prevention, rather than the cure, of disease, and the inspectors are not expected to prescribe for or treat cases unless in emergencies. The department will have the advantage of receiving fuller and more detailed information than could have been obtained through its paid forces alone, the voluntary inspectors will have the benefit of their practical experience in sanitary work, and the public, or that portion that most needs it, will get the instruction it should have in matters on which it most requires enlightenment. The work will be largely if not entirely in the thickly settled and poorer portions of the city, and the result of the experiment will be watched for with interest.

PHYSICIANS in charge of the laboratories of Jefferson Medical College, Philadelphia, have for some time been studying the condition of the urine after prolonged

exercise on the bicycle. In most instances the urine was selected from those individuals known as "record breakers," forty or fifty cases being studied, examinations made before and after the ride, and again a few days afterward. In quite a number, after a ride of twenty minutes temporary albuminuria occurred.

THE INDIA correspondent of the *Lancet* (July 1) reports the number of deaths from the plague rapidly diminishing. The total for the whole of India for the week ending June 4 was 511, while in Bombay the weekly total mortality had fallen almost to its normal level, and the reported plague mortality was only 64. At the date of writing, June 7, there were still about 4,000 persons living in camps, while in Karachi the outbreak had almost subsided and in Poona the deaths were very few. Calcutta reported but twenty or thirty a week. Still the infection lingers and fails to be stamped out entirely anywhere. He considers the organization for the treatment of plague-cases at the Medical College Hospital in Calcutta unsatisfactory, "the accommodation provided being a small, dark, cellar-like ward on the ground floor, which is also used for cholera and other infectious cases. In fact, cholera cases of plague in Egypt, previously referred to in cases and plague cases frequently occupy adjoining beds."

TABETIC CLUBFOOT.—One of the rarest complications of tabes dorsalis is a deformity of the foot in which sometimes the arch yields and the patient walks on the inner border, while the outer border is everted, and sometimes the arch is increased, constituting the so-called Chinese foot. Both of these conditions must be looked on as trophic disturbances, allied to the arthropathies. After the joints are obliterated, sometimes the altered bones undergo fracture and it has been thought in some instances that the muscles also were affected. An interesting example of the deformity has recently been reported by Schulz¹ in which radiographs disclosed the existence of spontaneous fractures in the affected parts. The patient was a man, 33 years old, with a history of syphilis twelve years previously. He presented induration of the cervical and inguinal glands, and prominence of the left tibia in its lower third. The condition of clubfoot had been present for six years, while the remaining symptoms had made their appearance two or three years later. There was slight ataxia in the lower extremities and slight swaying when the eyes were closed. The pupils were unequal and responded to light but sluggishly. The knee-jerks were wanting, although an occasional response could be obtained on the right. Lancing pains in the extremities occurred from time to time. The most marked sensory disturbance consisted in a double sensation when the left foot was pricked, the sense of contact being followed after several seconds by one of pain. There was a perforated ulcer of the left foot that had been present for six years intermittently. An existing sinus was 0.75 cm. deep, but did not lead to roughened bone. The foot was markedly clubbed, with strong plantar arching, and about two cm. shorter than the right. In its middle it was broader from side to side, and the toes were deflected outward. On palpation the heads of the first and third metatarsal bones were found to be considerably thickened. A skiagraph showed that the joint between the astragalus and the os calcis, as well as that between the scaphoid and the cuboid, was almost completely obliterated, while that between the cuboid and the external cuneiform and the heads of the last two

¹ *Berliner Klin. Woch.*, May 28, 1909, p. 477.

metatarsal bones was represented by a compressed mass without indication of articular line. The cuboid bone appeared fractured, and the fissure appeared to extend between the scaphoid and the internal cuneiform bones. Enlargement of the heads of the first and third metatarsal bones was evident. The scaphoid bone also was enlarged, and its tuberosity appeared to be separated from the body of the bone. The nature of the tabetic clubfoot has hitherto not been clearly understood, and this demonstration shows its mode of origin in at least some cases. It is possible that as a result of disturbances in the nutrition of the bones of the foot these were rendered more fragile, and are more readily fractured through the agency of the superincumbent weight.

Therapeutics.

CORRECTION.

An error in dosage occurred in this department in last issue, under the caption "Heart Tonic (p. 113). In the first item of prescription, "Strychnine Sulph., gr. 1/3" should appear instead of "gr. i-iii." The metric dosage, however, is correct.

UREMIA.

For urenic attacks, Delafeld advises chloral 10 grains (.6 gm.) per os, or 20 grains (1.29 gm.) per rectum, every three or four hours, or nitroglycerin gr. 1/100 (.0001 gm.) to 1/50 gr. (.001 gm.) repeated as indicated by pulse tension. Hot packs, except in cases with cerebral symptoms and feeble pulse.

In anasarca of malarial origin:

R. Spiritus juniperi comp.	℥i	480
Ferri sulphatis	ʒiii	7 80
Potassii acetatis	ʒiv	15 60
Extracti digitalis fluidi	ʒiii	7 80
Syrupi scillae	ʒiv	15 60

Misce. Sig. Teaspoonful three times a day.

Mullonc.

ENURESIS.

R. Extracti rhois aromaticæ fluidi	ʒiiss	9 75
Extracti ergotæ fluidi	ʒss	15 50
Extracti belladonnæ fluidi	ʒss	1 95
Extracti strychninæ sulphatis	gr. ʒiv	016
Syrupi aurantii corticis ad	ʒiv	124 40

Misce. Sig. Teaspoonful four times a day.

Macalister.

R. Extracti jaborandi fluidi		
Extracti belladonnæ fluidi aa	ʒi	3 90
Extracti tritici repentis fluidi	ʒss	15 50
Extracti ergotæ fluidi		
Extracti rhois aromaticæ aa	ʒi	31 10
Aque	ʒss	15 50

Misce. Sig. One teaspoonful three times a day.

S. W. Armitage.

INCONTINENCE ACCOMPANYING CHOREA.

R. Syrupi ferri iodidi m. v., x̄x (33 to 139 gm.) in water before meals, the dose being regulated according to age of child, and after eating liquoris potassii arsenitis m. iii-v̄ (.20 to .40 gm.) according to the tolerance of patient.

Butler.

Potts recommends for incontinence of chorea quinine sulphatis gr. v. (.32 gm.), to be gradually increased.

INCONTINENCE OF URINE IN AN ADULT.

R. Tincture ferri chloridi		
Tincture nucis vomicæ, āā	ʒss	15 50
Tincture cantharidis	ʒvi	23 40
Syrupi simplicis	ʒiii	62 20
Aque q.s. ad	ʒvi	186 60

Misce. Sig. One teaspoonful three times a day.

COLIC.

Acute gastric and intestinal colic is one of the diseases frequently met with, especially in summer, that is often refractory to treatment so far as immediate relief is concerned. While by appropriate means the physician may readily, in a week or so, relieve the condition that causes the colic, it is the pain that the patient wishes to be rid of, and the physician is likely to be judged by his success in relieving that promptly.

In such a case morphin is even more objectionable than usual, yet it is the surest means at hand. The physician early in his career finds that most of the ordinary remedies recommended for colic as a rule are failures. The following formula devised by H. C. Wood is simple and nearly always effective.

R. Chloroform	ʒiiss	6
Tinct. opii, deod.		
Ol. cajuput, āā	ʒi	4
Aque, q.s. ad	ʒiij	60

Misce. Fiat emulsion. Sig. A dessertspoonful every two or three hours if needed.

For severe colic with nervous symptoms in an infant, a formula of Hare's will be found very efficient, and at the same time free from serious objection.

R. Chloral	gr. xvi	106
Potassii bromid.	gr. xxxii	2 13
Aque menth. pip.	ʒiij	60

Sig. Teaspoonful in warm water every four hours.

DIABETES INSIDIDUS.

R. Pulveris opii	gr. iv	26
Acidi gallici	ʒii	7 80

Misce. Fiat chart no xii. Sig. One, three or four times daily. H. C. Wood.

DIABETES MELLITUS.

In thin subjects with faulty assimilation.

R. Acidi arseniosi	gr. ii	13
Pulveris opii	gr. viij	52
Ammonii chloridi	ʒiv	15 60

Misce. et ft. pil. No. xxxii. Sig. One pill three daily, after meals. Marcus.

In obese persons.

R. Aloes Capensis	ʒv	19 50
Sodii bicarbonatis	ʒiiss	46 60
Spiritus lavandulæ comp.	ʒss	15 50
Aque destillatæ	℥i	480

Macerate for four or five days.

Sig. Teaspoonful three times a day after meals.

Mettacerr.

R. Sodii salicylatis	ʒiij	11 70
Liquoris potassii arsenitis	ʒi	3 90
Glycerin	ʒi	31 10
Aque cinnamomi ad	ʒiij	93 30

Misce. Sig. Teaspoonful to a tablespoonful three times a day.

J. C. Wilson.

R. Extracti jambulæ fluidi	ʒi	31 10
Liquoris arsenii bromidi	ʒiii	7 80
Aque destillatæ ad	ʒi	62 20

Misce. Sig. Half a teaspoonful in water three times a day. H. G. McCormick.

CATARHIAL PNEUMONIA OF CHILDREN.

R. Ammonii carbonatis	gr. xxiv	1 50
Syrupi toluanti	ʒvi	23 40
Spiritus vini gallici	ʒiii	11 70
Syrupi senegæ	ʒiiss	13 65
Syrupi acacii, q.s. ad	ʒiij	93 30

Misce. Sig. Teaspoonful every two hours for a child of two or three years.

Goodhart and Starr.

For the relief of irritability and restlessness, and to secure free elimination and a good action of the kidneys Dr. Frank S. Parsons recommends:

R. Vini ipecacuanhæ	ʒi	3 90
Potassii citratis	gr. xxx	1 95
Tincture opii camphorate	ʒiij	7 80
Elixir simplicis	ʒi	31 10
Aque destillatæ q.s. ad	ʒv	124 40

Misce. Sig. A teaspoonful to an infant six months old every two hours.

ALCOHOLISM.

The treatment as carried out at Bellevue Hospital is as follows:

R. Strychnine nitratiss	gr. 1/16	004
Atropine sulphatis	gr. 1/300	0002
Aque destillatæ	m. x.	06

Misce. Sig. Inject three times daily.

Second day's injection.

R. Strychnine nitratiss	gr. 1/20	003
Atropine sulphatis	gr. 1/200	0003
Aque destillatæ	m. x.	06

Misce. Sig. Inject three times daily.

STOMACHIC MIXTURE.

R. Tincturæ cinchonæ comp.m. xv	72
Tincturæ capsicim. ss-i	03-06
Tinct. solani carolinensism. ij	12
Vini ferri amari ad.ʒi	3 90

Misc. Sig. Shake and take one teaspoonful three times a day.

SEDATIVE MIXTURE.

(First and second nights if needed.)

R. Potassii bromidigr. xxxij	2 08
Chloralisgr. xvi	1 04
Tincturæ valerianæʒi	3 90
Aque, ad.ʒiv	124 40

Misc. Sig. Shake, and take one teaspoonful, repeated once, if needed.

Diet. One-half to one glass of milk (hot or peptonized), alternating with hot beef tea or broth, every two hours. Stomach washing as necessary.

On being discharged the patient is given:

R. Tincturæ calumbæʒi	3 110
Tincturæ capsicim. xv	72
Tincturæ nucis vomicæʒi ʒiiss	31 10-46.65
Apomorphinægr. ʒi ʒi	008
Tincturæ cinchonæ comp. ad.ʒiv	124 40

Misc. Sig. Teaspoonful in water after meals.

—C. L. Dana.

Jergolski claims that 8 drops of tincture of strophanthus three times a day will create a distaste for drink.

The following prescriptions have been recommended for alcoholism:

R. Auri et sodii chloridigr. ʒi/24	0027
Strychninæ nitratisgr. 1/60	001
Nitroglycerinigr. 1/100	00065
Atropinæ sulphatisgr. 1/200	00033
Digitalinigr. 1/60	001
Sodii chloridigr. ʒi ʒi	008

—Dunham.

R. Spiritus ammonii aromaticiʒi	7 80
Tincturæ camphoræʒiiss	5 85
Tincturæ hyoscyamiʒiiss	9 75
Spiritus lavandulæ comp. q. s. ad.ʒi	62 20

M. Sig. One teaspoonful every hour.

Tyson recommends the following to prevent the adynamia which may follow the sudden withdrawal of alcohol:

R. Spiritus ammonii aromat.ʒss	1 95
Strychninægr. 1/30	002

M. Sig. For one dose. Repeat every three hours.

To relieve the symptoms of gastritis and the craving for alcohol:

R. Decocti althææʒv	155 50
Aque chloriʒi	13
Sacchariʒi	13

M. Sig. Tablespoonful every two or three hours.

—Zedekauer.

DELIRIUM TREMENS.

The following combination is used at the Vanderbil Clinic:

R. Potassii bromidiʒi	1 00
Sodii bromidi Ægr. xv	1 00
Chloralisgr. x	65
Tincturæ zingiberism. x	60
Tincturæ capsicim. v	30
Spiritus ammonii aromaticiʒi	3 90
Aqueʒi	7 80

M. Sig. For one dose.

S. O. L. Potter says, "I never use opium or its derivatives, but rely on chloral, in full doses, gr. xxx (1.95 gm.) every two hours until sleep follows. If the heart will not bear chloral, I use duobisino, gr. 1/100 (0.0065 gm.) hypodermically, and repeat if necessary after an hour, to produce sleep. In any case I fill the stomach with strong hot soup, containing plenty of pepper in the form of Tabasco sauce."

ACUTE PHARYNGITIS.

R. Extracti eucalyptigr. xxx	1 95
Sodii bicarbonatisgr. x	65
Pulveris pimentægr. vii	46
Extracti glycyrrhizæʒiiss	9 75

M. Ft. massa in trochisci No. xxx, div.

—Boscworth.

A SPRAY FOR PHARYNGITIS SICCA.

R. Acidi carbolicægr. x	65
Tincturæ iodiʒi	65
Tincturæ aloesʒi	65
Tincturæ opii Ægtt. x	5
Glycerini q. s. ad.ʒi	31

M. Sig. To be used as a spray several times daily.

CHRONIC RHINO-PHARYNGITIS.

R. Mentholʒi	3 90
Olei amygdalæ dulcisʒx	39

M. Sig. Apply locally with a brush.

—Hamon de Fougeray.

QUINSY.

R. Tinct. veratri viridis (Norwood)gtt. xxx	1 15
Morphinæ sulphatisgr. iss	098
Aqueʒvi	23 40

M. Sig. Dose for an adult one dram to be repeated according to judgment in one hour; then every two or three hours, according to the effect of the morphin.

R. Acidi tanniciʒi	3 90
Glyceriniʒi	31 10
Aque rosæ Æʒviii	248 80

M. Sig. Tannin gargle.

—Clarence J. Blake.

HABITUAL CONSTIPATION.

R. Washed sulphurʒi	4
Cream of Tartarʒi	4
Senna leavesʒss	2
Powdered cardamomgr. i	065

Syrup rhamnus cathartica q. s.
Make an electuary.

Sig. A teaspoonful night and morning. This formula has an ancient appearance, but it has recently been published in some of the medical journals, and is credited to the *Journal de Médecine de Paris*. After all, not everything that is good is new.

Klemperer directs the injection of eight ounces of tepid water on retiring, allowing it to be retained until absorbed. Increase the quantity progressively each night while lowering the temperature of the water. If necessary, give an ordinary injection in the morning. Four to six weeks suffices to establish unaided defecation.

Deaths and Obituaries.

W. A. DIXON, M.D., Ripley, Ohio, died at the Good Samaritan Hospital in Cincinnati, June 24. The doctor was born near Ripley in 1835, and in 1856 entered the University at Delaware, Ohio, after which he engaged in educational work, and during his teaching read medicine to later enter Jefferson Medical College, Philadelphia. In 1862 he became a contract surgeon in the army, under General W. T. Sherman, his service continuing through the campaign, which ended with the fall of Atlanta, when he was assigned to the general hospital, and there remained until the close of the war. After the war he took his degree in medicine from the Ohio Medical College, later locating in Ripley. Besides being a member of the Ohio State Medical Association, he was a member and regular attendant of the AMERICAN MEDICAL ASSOCIATION, where he has also presented a number of papers.

ROBERT LAUGHLIN REA, M.D., a retired practitioner, died at his home in Chicago, July 11. Dr Rea was born in Virginia in 1827, and received his degree of M.D. from the Medical College of Ohio in 1855. Soon after he was elected demonstrator of anatomy in that institution, continuing in that relationship until the spring of 1857, when he resumed practice in Oxford, Ohio, and there delivered courses of lectures on anatomy and physiology in the Western Female Seminary. He came to Chicago in 1859 and was appointed professor of anatomy in Rush Medical College. He was later connected with the Chicago Medical College and in 1882 accepted the chair of surgery in the College of Physicians and Surgeons, Chicago, from which he retired four years later.

WILLIAM HOWARD NELSON, M.D., Bellevue, N. Y., 1891, died at his home in New Rochelle, N. Y., July 6, aged 41 years. He was born in New Brunswick, N. J., and at time of his death was an alderman of the town.

GEORGE THOMAS DUTCHER, M.D., College of P. and S., N. Y.,

1894, died June 23, aged 30 years, in Pasadena, Cal. His residence began there soon after his graduation.

JAMES O'REILLY, M.D., Burlington, Vt., 1875, of New York, died from paralysis June 26. He was born in County Meath, Ireland, 71 years ago, was in part educated for the priesthood at Kilmore College, then studied medicine in Dublin, and finally came to this country, but retired from active practice about fifteen years ago.

W. A. GEORGE, M.D., Keasauqua, Ia., died on the train while en route from San Diego, Cal., June 3, of Bright's disease. Dr. George was born in 1853, and received his degree of M.D. at Bellevue in 1876.

E. S. GARNER, M.D., St. Joseph, Mo., a member of the Missouri State Board of Health and a graduate of the College of Physicians and Surgeons, New York City, died at his home, July 7.

Percy E. Cleveland, M.D., Nashville, died June 25, aged 37 years. . . . Geo. V. Converse, M.D., Hillsboro, Ia., July 1, aged 41 years. . . . Frederick W. Fabricus, Acting Assistant Surgeon, U. S. A., of yellow fever, at Santiago, Cuba, June 25. . . . Nathaniel Green, M.D., Middletown, Conn., grandson of the Major General of the Revolutionary fame, at his home, July 8, aged 90 years. . . . E. L. Hamilton, M.D., Richmond, Ark., July 5, aged 63 years. . . . Frank E. Noble, M.D., Jersey City, N. J., June 29, aged 75 years. . . . Henry G. P. Spencer, M.D., Jefferson, 1846, of Watertown, N. Y., Minneapolis, Minn., June 27, aged 78 years.

DEATHS ABROAD.

SIR WILLIAM HENRY FLOWER of London, Eng., born in Stratford-on-the-Avon, 1831, elected Fellow of the Royal College of Surgeons in 1857, and President of the Zoological Society, died July 2.

J. E. GRAHAM, M.D., died at Gravenhurst, Ont., July 7, from tuberculosis. In 1870 he was a resident physician in the Brooklyn City Hospital, N. Y., and in 1889 the President of the American Dermatological Association.

Book Notices.

Text-Book of Mental Diseases, with special reference to the Pathological Aspects of Insanity. By W. BEVAN LEWIS, L. R. C. P. (London), M. R. C. S. (Eng.). Second Edition, Thoroughly Revised, enlarged, and in Part Re-Written. With Illustrations in the Text, Charts, and Twenty-Six Lithographed Plates. Philadelphia: P. Blakiston's Son & Co. 1899.

This second edition of Dr. Bevan Lewis' well-known work has been largely re-written, especially in the first or anatomic section, to bring it up to the advances made in this department since the appearance of the earlier edition. The work has always been unique in the fullness of its anatomic descriptions, and its reputation will evidently be maintained. In its clinical section it has never been so thorough and satisfying as is demanded of a text-book, and this edition is in some respects an improvement over its predecessor, but it still has its deficiencies. The changes are a chapter on progressive systematic insanity, which was needed, and some minor additions and alterations. The work is still unequal in this department, some subjects being treated fully and satisfactorily, others altogether too meagerly. The treatment of the paranoias and other degenerative conditions of mental disorder, such as circular insanity, is unsatisfactory, and primary confusional insanity, the importance of which is nowadays coming to be recognized, is not mentioned at all. On the other hand, paresis, alcoholic and epileptic insanity are quite fully treated. As a whole the work is an excellent one for reference in the library of the specialist or the practitioner who is interested in its subject, but as a text-book for students, it cannot very well supplant others already in the market.

Les projectiles des armes de guerre, leur action vulnérante, par les Drs. H. NIMIER, médecin principal de l'armée, professeur au Val-de-Grâce, et Ed. LAVAL, médecin aide-major de 1re classe. 1 vol. in-12 avec gravures, 3 fr.—Félix Alcan éditeur. (Military Projectiles, their wounding action. By Drs. H. Nimier and Ed. Laval.)

This volume is the reproduction of lectures delivered at the Val-de-Grâce. It discusses the effects on the organism of both small arm and military projectiles, their action on the tissues, their effective zones, their moral effects, etc. It does not include the results of recent experience during the past year, but this does not make the work much less valuable as a theoretic and practical study of its subject.

Miscellany.

No Certificate, No Pay.—The court of civil appeals of Texas holds that there was no error in a refusal, in the case of Wilson vs. Vick, to allow a bill for medical services, because the facts did not show that the party claiming the compensation had received a certificate authorizing him to practice medicine, and that the same had been recorded as provided by the statute.

Not Evidence of Improper Treatment.—Evidence that the plaintiff in a personal injury case spoke bitterly against the physician who treated him, and that he discharged the physician, the supreme court of South Carolina holds, in Disher vs. Railroad Company, does not at all tend to prove that his injury was made permanent by improper treatment of his physician.

One X-Ray Examination Enough.—The supreme court of Wisconsin holds that there was no abuse of discretion in refusing to compel the plaintiff, in the personal injury case of Bolter vs. the Ross Lumber Company, to submit to a second examination by the X-ray process. It recites that he had submitted to one such examination, lasting two hours or more, during which he was, by accident, burned, and had also permitted two of the defendant's medical witnesses to examine him, but refused to submit to another examination by such process. But just what importance it attaches to these points, respectively, it does not state.

Prohibited Disclosure.—An applicant for life insurance, in answering questions put to him, stated that he was in good health, had only had la grippe slightly, several times, and nothing more than la grippe or cold, in five years, but had consulted his physician four weeks previously for la grippe, or cold. He also denied ever having had certain named diseases; and the policy of insurance provided that if any of these answers were untrue, the policy should become null and void. When sued on this policy, the insurance company called as a witness the physician who was mentioned in the application, and, after the latter had testified that he had been consulted for la grippe, asked him whether he was consulted during this period for any other disease than la grippe. This was objected to as incompetent under the Michigan statute, which prohibits a physician or surgeon from disclosing any information which he may have acquired in attending any patient, in his professional character, and which information was necessary to enable him to prescribe for such patient as a physician, or to do any act for him as a surgeon. Under these circumstances, and the physician having further testified that all the information he had pertaining to any alleged complaints of the insured was acquired during the relation of physician and patient, and that he had no information pertaining to his condition aside from what he obtained by observation, and from his statements while acting as his physician, the supreme court of Michigan holds, Jones vs. Preferred Bankers' Life Assurance Company, that the question asked and objected to was incompetent and properly excluded.

Asbestos and Nasal Synechia.—A small piece of sheet asbestos has been found an ideal substance for the post-operative treatment of nasal synechia, soft, yielding, sterilized in the flame, and perfectly tolerated.—*Presse Med.*, June 21.

Reflected Light from Walls.—The percentage of light reflected from the walls of a room is largest with mirrors and white walls, respectively 92 and 70 per cent. Next comes light orange, 54.8; light green, 46.5; light yellow, 40; light blue, 30, and bright red, 16.2 per cent.—*Munch. Med. Woch.*, May 30.

Urticaria and Odors.—Joal reports three cases in which certain odors produced urticaria. In one the odors from aromatic essences used in the manufacture of liquors; in another, of iodoform, and a third the odor from roses, lilacs and hyacinths, accompanied in the two last cases with symptoms of hay-fever.—*Revue Heb. de Laryng.*, June 10.

Staining Test of Red Corpuscles.—Iovane states that the red corpuscles stain blue with methylene blue in the newly-born as a physiologic phenomenon, but that when this occurs a few months later and after, it is pathognomonic of anemia, the degree proportional to the severity of the anemia and the disappearance of the stain a certain sign of return to normal.—*Pediatria*, 2.

Intoxication from Saline Injection.—Severe tenesmus, epithelial desquamation, cholera nostras and syncopal condition followed a rectal injection of a nearly saturated solution of coarse salt. Vermerseh, who reports the case, advises the mention of table salt in ordering saline rectal injections and the indications of the precise amount, as a "pinch," "handful," etc., are terms too vague for the general public, always inclined to exaggerate doses.

Yeast and Levurin in Furunculosis.—The remarkably favorable results obtained in furunculosis, with yeast fresh from the brewery, has led to the production of an extract containing the active principles of the yeast, called Levurin by Couturieux, its inventor. One or two teaspoonfuls a day is the efficient daily dose and it is proving wonderfully effective, with no inconveniences of any kind from its use.—*Presse Medicale*, No. 46.

Function of Spleen.—The spleen was removed from a couple of dogs suffering with biliary fistulae and the results demonstrated that the spleen is a reservoir for the pigment of the red corpuscles as they are normally or abnormally destroyed. The pigment is conveyed from the spleen to the liver where it is eliminated as bile pigment. If the spleen is removed the pigment is distributed throughout the entire circulation with the chief localization in the bone marrow and the bile abnormally poor in pigment.—*Policlinico*, March 1.

Health in Michigan.—Reports to the Michigan State Board of Health show that the diseases most prevalent in that state, during June, were rheumatism, neuralgia, bronchitis, diarrhoea and tonsillitis. Compared with the preceding month, cholera morbus, typhoid fever, diarrhoea, inflammation of bowels and consumption increased, and pneumonia, influenza, scarlet fever, measles, pleuritis and cerebrospinal meningitis decreased in area of prevalence. Compared with the average for June in the thirteen years, 1886-98, cerebrospinal meningitis was more prevalent, and whooping-cough, diphtheria, pneumonia, erysipelas, scarlet fever, remittent fever, intermittent fever, influenza, measles, consumption and pleuritis less prevalent. Reports from all sources show consumption reported at 22 places more; measles at 38; scarlet fever at 14 places less; typhoid fever at 14 and diphtheria at 5 places more; whooping-cough at 7, and cerebrospinal meningitis at 26 places less and smallpox at 2 places more, in June, 1899, than in the preceding month.

Regulation of Privy Vaults.—The third appellate division of the supreme court of New York says, in the recently decided case of Cartwright vs. the Board of Health of the City of Cohoes, that the legislature may lawfully confer on the board

of health the power to enact sanitary ordinances having the force of law within the localities for which they act. That privy vaults in a city may be detrimental to the public health, when located near to inhabited dwellings or places of business, it also thinks, needs very little argument to prove; and, within established principles, they are eminently proper subjects for regulation by boards of health. More specifically does the court hold that an ordinance or regulation of a board of health is reasonable which provides that "No owner, lessee, occupant or agent of any building or premises shall maintain within the city any privy, privy vault or cesspool made or built in the earth within twenty-five feet of any door or window of any residence upon such premises, or any residence upon the adjoining premises, and such maintenance of any privy, privy vault or cesspool is hereby declared to be a nuisance and condition detrimental to life and health. And any or all privies, privy vaults and cesspools existing within the city shall be removed or filled up by the owner, lessee, occupant, agent or other person having charge or control of the premises on which they exist, whenever the same becomes a nuisance and condition detrimental to life and health, by rendering the soil, air or water impure, injurious, unwholesome, or they constitute a condition of any kind detrimental to life and health." The ordinance being a reasonable one,—one that the board had a right to pass,—the court further holds that the board had a right to enforce it in the manner provided by the statute, even though that involved, to some extent, the destruction of the plaintiff's property. Moreover, under the New York statute, the court holds that the board of health could have acted on its own inspection and knowledge of the premises, and was not obliged to hear anybody.

Physical Examination as a New Question.—In the recent personal injury case of Mary Elizabeth Lane vs. the Spokane Falls & Northern Railway Co., the supreme court of the state of Washington takes up the important question, here presented to it for the first time, of whether the courts of that state have the power to compel one who sues to recover damages for injuries to his person to submit to an examination by medical experts appointed by the court, for the purpose of ascertaining the nature, character, and extent of his injuries. It explains that actions of this character have, in recent years, become so numerous that the question is of far greater importance than it could possibly have been twenty-five years ago, and that it is not surprising that most of the cases in which the question has arisen or is discussed at all are of recent origin. In Iowa, Nebraska, Kansas, Wisconsin, Alabama, Arkansas, Ohio, Michigan, Georgia, Minnesota and Missouri, it continues, it has been held that the court possesses the inherent power to make such an order; while in Illinois, New York, Indiana, and the United States supreme court the power is denied. For itself, the court indorses and adopts the view expressed in a dissenting opinion in the supreme court of the United States, "that a party who voluntarily comes into court alleging personal injuries, and demanding damages therefor, should permit disinterested witnesses to see the nature and extent of those injuries, in order that the jury may be informed thereof by other than the plaintiff and his friends, and that compliance with such an order may be enforced by staying the trial or dismissing the case." It is to be presumed, further says the supreme court of Washington, that, in exercising this power, the trial court will always see that only proper physicians or surgeons, and where possible, wholly disinterested ones, are appointed to conduct the examination, and that the expense of such examination should be borne by the party requesting it. Care, it adds, should be exercised to avoid all unnecessary inconvenience and annoyance to the plaintiff, and, when desired, it should be made in the presence of the counsel and friends of the party to be examined, and the trial court should be free to exercise that sound discretion which the nature of the case and the ends of justice may require.

Does Life Insurance Lead to Suicide?—In a recent statement to the *Philadelphia Ledger*, L. G. Fouse, president of the Fidelity Mutual Life Insurance Company of Philadelphia, said: "Every manager of a life insurance company who wants to be frank must recognize that a large proportion of the suicides occurring within the first policy year are deliberate and intentional suicides, and planned at the time the policy was taken out. These people usually take large amounts. That there is a great amount of fraud of this kind is not a matter of conjecture." It was even stated that several years ago an insurance company gave out that they would pay suicide claims without question, with the result that an unduly large proportion of suicides occurred in members of that company. A table recently published by one of the insurance companies gives figures showing that the suicide rate for forty-five cities of the United States during 1889 was 12.7 per 100,000, and in 1898 the rate had increased to 17 per 100,000. The suicide clause, as now generally inserted by insurance companies, stipulates that payments will not be made in those cases where suicides occur within two or three years of the time the policy was written. After that time has elapsed it is considered that the insured person did not contemplate suicide at the time of taking the insurance. It was further stated that one reason the companies do not contest these cases is because it is feared that public sentiment would be raised against them. On the other hand, Henry C. Lippincott, manager of agencies of the Pennsylvania Mutual Life Insurance Company, stated that he knew of at least one company which did not contain a clause with reference to suicide, and that an increase of suicides had not occurred. In reply to the question of statistics on this question he replied that statistics could be made to prove almost anything. According to a recent decision made in the state of Missouri, under the statute governing certain classes of insurance companies, it is no defense against the payment of the policy that the insured committed suicide, unless it be shown that he contemplated suicide at the time the policy was written.

Medical Practice in Illinois.—At the present time the subjects on which examination is required by the Illinois State Board of Health, for medical practice in Illinois are the following: anatomy, chemistry, gynecology, hygiene, materia medica and therapeutics, medical jurisprudence, obstetrics, pathology and bacteriology, practice of medicine, physiology, and surgery. At the quarterly meeting of the Board, July 11, the first held under the new medical practice act, the following rules among others were adopted:

State certificates authorizing the practice of medicine and surgery in the State of Illinois are issued by the State Board of Health on complying with the following requirements, based on the Act to Regulate the Practice of Medicine in the State of Illinois, in force July 1, 1899.

1. The applicant must present to the State Board of Health for verification at the office of the secretary, in Springfield, or in Chicago, at the time of the examination, the diploma or license of a legally chartered medical institution in good standing. The diploma or license should be forwarded, prepaid, by express or registered mail. If by mail, letter postage must be affixed to the package.

2. Said diploma or license must be accompanied by the affidavit of the holder and applicant that he or she is the lawful possessor of the same, and is the person named therein. The affidavit must show, also, the number of years the applicant has studied medicine, including the time spent in attendance at medical colleges.

3. The affidavit must be accompanied by letters of recommendation with regard to the moral and professional character of the applicant from at least two reputable men who live in Illinois, or, if from non-residents of the state, such letters must be endorsed by reputable medical men of Illinois.

4. The applicant must pass an examination in those general subjects and topics a knowledge of which is commonly and generally required of candidates for the degree of Doctor of Medicine by reputable medical colleges in the United States.

5. The fee of \$10 for an examination must be paid in advance. If not paid in person, the fee should be transmitted by postal money order, draft or check made payable to the secre-

tary of the State Board of Health. No responsibility will be assumed for fees transmitted in any other manner.

The fee of \$5 for a certificate can be paid in advance, or when the applicant is notified that a certificate will be issued.

6. Persons desiring to take an examination, should file their applications with the secretary as soon as possible, so as to enable the board to determine as far as practicable the number to arrange for. It is preferred that the affidavit and letters of recommendation be submitted in due form to the secretary at Springfield before the examination.

Examinations will be held quarterly in Chicago, at the Great Northern Hotel, or, in exceptional instances, in the office of the board at Springfield.

At the same meeting the board adopted the following resolution:

WHEREAS: Section 2, of an Act to Regulate the Practice of Medicine in the State of Illinois, and to repeal an act named therein, approved April 24, 1899, in force July 1, 1899, gives the State Board of Health discretionary power as to granting certificates to graduates of legally chartered medical colleges in Illinois in good standing as may be determined by the board, and,

WHEREAS: It is evident, notwithstanding the discretionary power given the board, that the true intent and purpose of this Act is to require all persons to prove their qualifications to the State Board of Health by passing an examination; therefore, be it

Resolved: That all applicants for a state certificate to practice medicine and surgery in the state of Illinois, who are graduates of medical colleges in good standing, as may be determined by this board, shall, before receiving a certificate, be obliged to pass an examination such as contemplated in Section 2, of an Act to Regulate the Practice of Medicine in the State of Illinois, in force July 1, 1899.

Resolved: That the phrase "medical college or institution in good standing," in the first paragraph of Section 2, of the Act to Regulate the Practice of Medicine in the State of Illinois, in force July 1, 1899, is hereby defined to include only legally organized, properly conducted medical institutions, having a sufficient and competent corps of instructors and ample facilities for teaching, dissections, ambulatory and hospital clinics, which conform to the requirements relative to the preliminary education of matriculants, the course and period of study, the number, character and length of lecture terms, the duration of attendance on hospital and clinical instruction, which obtain in the majority of medical colleges in the United States.

The Illinois State Board of Health, however, will not consider in good standing, after Jan. 1, 1900, any medical institution which does not require of all students (excepting graduates of reputable colleges of arts and sciences, or reputable colleges of dentistry, pharmacy or veterinary medicine, to whom one year's advanced standing may be granted) as a condition of graduation, an attendance of four full courses of lectures of at least six months each, in four separate years, no two courses commencing or ending in the same calendar year of time.

Resolved: That no medical college issue a catalogue of announcement in which are contained misrepresentations respecting its teaching, clinical or hospital facilities, its faculty or its courses of study, or false representation as to the number of students matriculated or in attendance, will be regarded as in good standing.

Proper Subject of Autopsy.—Article 1024A of the Texas Code of Criminal Procedure authorizes the justice of peace, whenever an inquest is held to ascertain the cause of death, to call in some regular practicing physician, if he deems it necessary, and it is impracticable to secure the services of the county physician to make an autopsy in order to determine whether the death was occasioned by violence; and if so, "the nature and character of the violence used." Now what meaning is to be given to the words in quotation marks? Are they to be restricted to the ascertainment of the physical nature of the violence, or is their meaning to be so extended as to include the circumstances attending the act, which may disclose its moral quality? The broader sense is decided on by the supreme court of Texas: in the case of Polk County vs. Phillips. More specifically, it holds that the calling in of a physician for the purpose of determining whether the deceased was, at the time of the assault on him, lying down, as testified to by one witness, or whether he was on his feet, resisting his arrest with deadly weapons, as testified to by other witnesses, was a purpose contemplated by the statute. The sole object of

the statute which provides for an inquest on a dead body, the supreme court says, is to aid the enforcement of the law by the detection of crime, in case an offense has been committed. In accomplishing the purpose of the inquest, it is as important to determine the characteristics of an act of violence which has led to a death as it is to determine the fact that there was violence, and that death was its result. Hence, the liberal construction of the statutory provision in question.

Warranty Against Using Insurance and Intoxicants.—An applicant for life insurance agreed and warranted that he would not use intoxicating liquors to excess. When subsequently sued for the insurance, the company pleaded this as a defense, averring, as a breach of the warranty, that, after the to excess, until he became a physical wreck, and that such dissipation contributed to his death. The parties seeking to recover the insurance replied that, before the date of the application for the insurance, and before the issuing of the policy, the insured had used intoxicants to excess to such an extent as to render him diseased from such dissipation, which disease affected him at the time of said application, of which the company had knowledge at the time of application, and thereafter, before the issuing and delivering of the policy; that the diseased condition continued until his death, and his return to such dissipation was merely a recurrence of the disease, over which he had no control. Their counsel quoted from eminent writers on medical jurisprudence, showing that drunkenness is a disease, and that it is liable to occur periodically, and argued from these facts that the company, knowing that the insured was diseased, and the cause of it, having issued the policy, could not then honestly refuse payment. But the decision on this point, of the appellate court of Indiana, is with the insurance company. It pronounces the agreement a promissory warranty; holds that it contravened no rule of law, and that it should be enforced. The court says, Northwestern Life Assurance Company vs. Bodurtha, that it thinks it would be a dangerous precedent to hold that the deplorable conditions, physical and mental, which are likely to follow the immoderate use of intoxicants, should preclude business transactions with one who in the past may have been the victim of the habit, but who promises to be temperate in the future, and to release such party from the obligations of a valid contract because of his failure to keep his promise.

Varieties of, and Post-Mortem Findings in, Deaths from the Plague.—Since the plague has gained such prominence in the thoughts of the medical world it seems fitting to review somewhat the literature of the disease. From the reports, it might at first be thought that in all cases in which death occurs from the plague, there had been suppurating buboes present during life; but this does not necessarily occur. So far all the data regarding the disease has not found its way into the text-books on this side of the Atlantic, and any reliable information bearing on the subject becomes of considerable importance at this time. Probably one of the best and most satisfactory reports yet made is that of the Arthur Road Hospital of Bombay, 1897. The report is made by Khan Bahadur N. H. Chosky, Extra Assistant Health Officer of the Bombay municipality, and is based on a series of 939 cases of bubonic plague. The work is mainly the work of the hospital staff in conjunction with members of the Austrian Commission, consisting of Dr. Heinrich Albrecht, Dr. A. Ghon, Dr. Franz Muller (Privat-Dozent at the Klinik Nothnagel, Vienna), and Dr. R. Poch. The post-mortem appearances described were from a series of 54 autopsies, mostly conducted by Dr. Heinrich Albrecht and his assistant, Dr. Ghon.

The following types of the disease have been described: 1. Pestsis minor, or extremely mild plague. 2. Pestsis ambulans. 3. Pestsis simplex bubonica, or simple bubonic plague. 4. Pestsis septica or septic plague. 5. Pestsis pulmonalis, or pneu-

monic plague. 6. Non-typical forms of plague. Of the first variety, there were but few treated in the Arthur Road Hospital. It is ordinarily attended by a slight febrile reaction, and pain over the deep-seated glands—generally femoral or inguinal—which may be still enlarged, but without any exudation around them. Of the treatment, all that had been recommended was a general aperient and some fomentation, the patient usually being able to return to work within three or four days. The report further says: "It is needless to add that such glandular swellings subside and totally disappear within three to four days, and it is probable that this was the character of the majority of the 'early' cases so-called that gave such favorable results with Yersin's serum." Of the second variety, only a few cases were treated. The history is that of one suffering from sudden fever of short range, with glandular enlargement, pain and tenderness of the glands, the patient being confined to the bed for three or four days without much systematic disturbance. "He does not feel himself sufficiently ill to consult a medical man; perhaps takes rest and shakes off the fever, and then goes about with an indolent swelling for a few days." It is the simple bubonic and septic forms of plague that are so characteristic of the disease.

Of the 939 cases of plague admitted, 8.33 per cent. had no buboes. Most of the latter (8 per cent.) belonged to the pneumonia type. The regions affected by buboes were: femoral, 32.12 per cent; femora-inguinal, 23.36 per cent.; axillary, 16.35 per cent.; inguinal, 12.38 per cent.; cervical, 5.25 per cent.; multiple, 4.67 per cent. It is stated that the buboes present a characteristic appearance. In the early stages, if incised, free hemorrhage occurs, and on section the gland appears as a swollen mass of an intensely brownish-red, brick-red or purplish color, and occasionally a thick black streak has been observed running through it. Once the buboes form, they either resolve, or else end in suppuration and sloughing. On the first day of sloughing the bacilli were always found in the pus, gradually diminishing until finally the discharge becomes sterile. In pestis pulmonalis, or pneumonic plague, the lungs seem to be primarily infected, thus causing a primary pneumonia. At the autopsies, deep-seated axillary buboes were nearly always found. In this form the sputum is usually laden with bacilli.

The non-typical forms of plague generally occurred during the subsidence of the epidemic. This type was generally manifested by a slight rise of fever, diffuse swelling mostly confined to the region of parotid and cervical glands, absence of glandular enlargements or pain, and gradual subsidence under the administration of cold applications, and of calcium chlorid internally. The post-mortem findings were very complete. This report begins as follows:

If it were possible to convey in one word the principal post-mortem changes that are found in the system, that word would be *hemorrhage*—hemorrhages in every conceivable and inconceivable part of the body, hemorrhages in the dura mater, larynx, mediastinum, pleura, pericardium, lungs, stomach, intestines, kidneys, liver, spleen, bladder, intima of the vena cava and jugular vein, hemorrhages around the buboes, subcutaneous tissue of the neck, arm, forearm, thigh, and retroperitoneal connective tissue. These hemorrhages were observed in all the fifty-four autopsies that were made. The brain meninges, spinal cord and esophagus showed few changes other than congestion. The pharynx in many cases was covered over with a false membrane, as was also the larynx, the latter often being edematous. The thyroid was generally normal, the lungs were generally "blood full," and in most cases when there was not much extensive pneumonia, greatly edematous. On section a large amount of serosanguineous fluid flowed out of them—in fact they seemed to be thoroughly soaked in like a sponge. The mucus in the bronchioles was blood-tinged. If pneumonia existed it was the characteristic lobular type, in isolated patches, having a mottled gray appearance. The heart muscle showed evidences of acute degeneration, generally fatty. The cavities were generally dilated. Hemorrhages were found on the pericardium, epicardium, and endocardium. The stomach was hardly ever normal, the mucous membrane being bile-stained and showing hemorrhages which were extremely characteristic in that they were always punctate, as those along the entire intestinal tract. The liver generally appeared slightly swollen.

"blood full," and in a state of acute infective degeneration, occasionally fatty. Its substance was soft, and the capsule at times adherent. In one case emboli of plague bacilli were found. The spleen was generally enlarged, but not usually to such a degree as to be detected during life. It was usually in a state of acute degeneration. Hemorrhagic infarcts were noticeable on its surface beneath the capsule, and occasionally small abscesses and cysts were present. On section the color was of a deep chocolate brown. The Malpighian bodies were swollen and could occasionally be distinctly seen, and so also the trabeculae and fibrous structure. In cases that had suffered from malaria, the peculiar dark pigmentation due to it was also noticed. The kidneys were in a state of acute parenchymatous degeneration, the capsule adherent and stellate. In the substance hemorrhages and hemorrhagic infarcts were found. Small cysts and abscesses were also observed. The suprarenals were normal. In the mesentery hemorrhages were found, also in the retroperitoneal connective tissue and in the loose connective tissue in the abdomen, surrounding the various organs. The mesenteric glands were not often very much enlarged or infected. Hemorrhages were also noticed on the ovaries, and in the intestines, small and large punctate ones. The mucous membrane was usually inflamed. The marrow of the long bones, as the femur, was often noticed in a state of acute red degeneration, and the synovial fringes of the knee-joint distinctly infected. The buboes were quite characteristic, and such as are not met with in any other affection. They were swollen, enlarged and surrounded by serosanguineous or hemorrhagic exudation. On section they appeared of a dark purplish color and "blood full."

In no case was the plague attributed to ratbites, either immediately or some time previous to infection. And as regards flies and fleas, ants, bugs and even mosquitoes, however enticing the theory appeared as tending to solve the difficult problem, it was more fanciful than real, appealing as it did more to the imagination than to common sense.

Apert from the above mentioned modes (1, through the skin; 2, from the contents of buboes; 3, sputum), it is but reasonable to assume that the plague epidemic which progresses like a regular wave from one end of the country to the other, either slowly or rapidly, generally the former, infects those susceptible to infection through the atmosphere, as in influenza and other similar infections, and in acute infection of this kind, pervading so insidiously and so widely, atmospheric agency must be a potent factor."

Philadelphia.

SAFE-GUARDS AGAINST DISEASE.—J. Lewis Good, chief of the Bureau of Health of Philadelphia, has been quite active of late in making provision for the prevention of yellow fever or any other infectious disease. After a thorough inspection of the Federal Quarantine station and its equipments, at the Breakwater and Reedy Island, it is believed that any sporadic case which comes to those places will be speedily detected and placed in quarantine.

MORTALITY STATISTICS.—The number of deaths during the past week was 435, an increase of 15 over last week, and a decrease of 285 over the corresponding period of last year. Of the total number, 189 occurred in children under the age of 5 years. The principal causes were: Apoplexy, 13; nephritis, 30; cancer, 7; cholera infantum, 52; tuberculosis, 46; heart disease, 27; pneumonia, 21; appendicitis, 1; marasmus, 18; rheumatism, 4; paralysis, 2; suicide, 4.

WATER FILTERS FOR PUBLIC SCHOOLS.—The Committee on Hygiene, of the Board of Education, have for some time been investigating the different varieties of filters to be placed in the public schools of Philadelphia. Since it is known that many children drink the water as it comes from the hydrants, even in a spirit of defiance to the restrictions, it becomes evident that such a safe-guard is very essential in preventing the spread of typhoid fever. A filter has been selected which is supposed to be 95 per cent. germ-proof. The sum of \$37,000 will be expended in placing the filters in the schools.

ROOF GARDEN FOR CHILDREN'S HOSPITAL.—In memory of his sister, Dr. T. W. Wilson has recently presented the Children's

Hospital with a roof garden, provided with all the necessary arrangements for obtaining fresh air and sunshine for the invalids of that institution. It is believed that this provision will be instrumental in lowering the infant mortality, especially during the summer months. The new addition costs about \$5000.

"GLORIOUS FOURTH" IN PHILADELPHIA.—From a medical standpoint the nature of the injuries and the weapons by which wounds were inflicted in July 4 celebrations, in Philadelphia, are of interest. The small toy pistol and the toy cannon, while innocent looking, are almost as dangerous as the fire cracker. The three injuries most frequently met with were burns of hands and fingers (53); burns of the eyes (43); burns of the face (35); and gunshot wounds of the hand (30). Of these injuries it is supposed that at least four people will partly, if not totally, lose their eyesight, while in many instances amputations have already been made.

Queries and Minor Notes.

MEDICAL PRACTICE.

MORESONVILLE, ILL., July 29, 1899.
To the Editor:—Some time ago I saw in the JOURNAL an article giving the medical practice acts or legal requirements of the States. I wish to know the law or legal requirements in Colorado or California and can not find that article. Respectfully,
R. W. R.

ANSWER:—The article referred to is the notice of the report of the Illinois State Board of Health published in the JOURNAL of Nov. 12, 1898. There have been, so far as we are aware, no changes in the laws of California or Colorado since that date, a law which passed the legislature in the latter State having been vetoed by the Governor. In each the presentation of a diploma from a recognized medical college suffices to obtain a certificate from the Board of Examiners; in Colorado, adding a diploma, a successful examination will also admit to practice.

"APPENDICEAL" OR "APPENDICULAR"?

CHICAGO, ILL., July 14, 1899.
To the Editor:—Of late I have several times noticed the use of the word "appendical" as an adjective relating to conditions of the appendix. Having "consulted the authorities," and vainly, for its origin or sanction, I seek the columns of the JOURNAL in the hope of being enlightened. Is "appendiceal" a proper term, or is "appendicular" the correct thing? W. B. H.

The Public Service.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., to and including July 6, 1899:

Charles Norton Barney, acting asst.-surgeon, from San Francisco, Cal., to Manila, P. I., by the *Para*, July 12, 1899.

Frank W. Dudley, acting asst.-surgeon, to Manila, P. I., by the *Para* July 12, 1899.

Basil H. Dutcher, lieutenant and asst.-surgeon, U. S. Army, relieved from present duty to proceed to San Francisco, Cal., for service in the Department of California.

Julius A. Escobow, acting asst.-surgeon, from Washington, D. C., to Havana for duty in the Division of Cuba.

Charles E. B. Flagg, captain and asst.-surgeon U. S. Army, to San Francisco, for duty in the Department of California.

Frank W. Foxworthy, acting asst.-surgeon, to Manila, P. I., by the *Para*, July 12, 1899.

S. J. Fraser, acting asst.-surgeon, to Manila, P. I., by the *Para*, July 12, 1899.

Louis L. Gilman, acting asst.-surgeon, from Rochester, New Hampshire, to Fort Ethan Allen, Vermont.

Henry S. Greenleaf, lieutenant and asst.-surgeon U. S. Army, to San Francisco for duty in the Department of California.

Stevens T. Harris, acting asst.-surgeon, from Carrollton, Georgia, to San Francisco, Cal.

Edward P. Hayward, acting asst.-surgeon, to Manila, P. I., by the *Para*, July 12, 1899.

Denise C. Howard, captain and asst.-surgeon U. S. Army, detailed temporarily as a member of a retiring board convened in New York City.

S. Chase de Kraft, acting asst.-surgeon, from Cambridge, Md., to San Francisco for duty in the Department of California.

Julius C. LeHardy, acting asst.-surgeon from Savannah, Ga., to San Francisco for duty in the Department of California.

Henry Lippincott, lieutenant-colonel, deputy surgeon-general U. S. Army, president of a board convened at Denver, Colo., to examine persons designated for appointment as second lieutenants in the army.

Willard S. H. Matthews, major and surgeon Vols., from the general hospital at San Francisco, Cal., to Manila, P. I., for assignment.

John R. McMill, acting asst.-surgeon from Milwaukee, Wis., to San Francisco for temporary duty in the Department of California.

Clarence B. Millhoff, lieutenant and asst. surgeon U. S. Army, from Camp Meade, Middletown, Pa., to Manila, P. I., accompanying the 19th U. S. Infantry.

Curtis E. Munn, major and surgeon U. S. Army, member of a board in Denver, Colo., to examine persons designated for appointment as second lieutenants in the Army.

George Nawlove, acting asst.-surgeon, from Somertown, Philadelphia, Pa., to Fort Leavenworth, Kans., for duty.

Oway W. Rash, lieutenant and asst.-surgeon, U. S. Army, to San Francisco for duty in the Department of California.

Robert F. Robins, acting asst.-surgeon, from Philadelphia, Pa., to duty in the Department of California.

Ernest C. Schultze, acting asst.-surgeon, from New York City, N. Y., to the Department of California.

Gilbert E. Seaman, acting asst.-surgeon, from Milwaukee, Wis., to the Department of California.

Engene L. Swift, captain and asst.-surgeon, U. S. Army, from Fort Sherman, N. Y., to San Francisco for temporary duty in the Department of California.

James W. Van Dusen, acting asst.-surgeon, from Norwalk, Ohio, to duty in the Department of California.

Richard Wilson, acting asst.-surgeon, from the Department of Porto Rico to duty in the Department of California.

Ezra Woodruff, major and surgeon U. S. Army, from Fort Trumbull, Conn., to Camp Meade, Middletown, Pa.

Appointment of Surgeons and Assistant-Surgeons of Volunteers.—On July 7, 1899, announcement was made by the War Department of the names of the medical men selected by the President as the surgeons and assistant-surgeons of the Volunteer regiments that are to be raised for service in the Philippines. Only two of these appointments are promotions of medical officers of the regular medical corps. The following are the names in order of rank:

Surgeons with the rank of major:—Ogden Rafferty, captain and asst.-surgeon, U. S. Army, late brigade surgeon, Ohio. Charles F. Mason, captain and asst.-surgeon, U. S. Army, late brigade surgeon, Vols. John R. McMill, late brigade surgeon Vols. Frank C. Armstrong, late surgeon 21st Kansas. Thomas W. Chalmers, late surgeon 12th New York. Charles L. Z. Anderson, late asst.-surgeon U. S. Army and at present an acting asst.-surgeon. B. Albert Lieberman, late surgeon 6th Missouri. Joseph N. Henry, late surgeon 4th U. S. Vol. Infantry.

Assistant-surgeons with the rank of captain:—John B. Hereford, late surgeon 1st Missouri. James C. Minor, late surgeon 1st Arkansas. Frank W. Foxworthy, late asst.-surgeon 160th Indiana. Abram L. Haines, late surgeon 204th New York. James J. Erwin, late asst.-surgeon 10th Ohio. W. E. Parker, late acting asst.-surgeon. James E. Shellenburger, late surgeon 3d Ohio.

Assistant-surgeons with the rank of first lieutenant:—William H. Coon, acting asst.-surgeon. Lomax S. Anderson, late asst.-surgeon 3th U. S. Vol. Infantry. Leonard K. Graves, late asst.-surgeon 201st New York. Ralph S. Porter, late asst.-surgeon 2nd Illinois. John A. Metzger, acting asst.-surgeon. Patrick J. McKenna, late asst.-surgeon 2nd U. S. Vol. Engineers. Albert H. Eber, late asst.-surgeon 35th Michigan. John E. Boyd, late captain 2nd South Carolina.

Movements of Navy Medical Officers.—Changes in the medical corps of the U. S. Navy for the week ending July 8, 1899:

June 30.—Asst.-Surgeon Ralph W. Plummer, appointed asst.-surgeon from July 1, 1899.

July 3.—Medical Inspector J. C. Wise, granted sick leave for three months.

Marine-Hospital Changes.—Official List of Changes of Station, and Duties of Commissioned and Non-Commissioned Officers of the U. S. Marine-Hospital Service, for the seven days ended July 6, 1899.

Surgeon R. D. Murray, to defer departure to Key West, Fla., as directed by Bureau letter of May 15, 1899) until further orders, and to proceed to New Orleans, La., for special temporary duty.

Surgeon Eugene Wasden, to proceed to Norfolk, Va., and assume temporary charge of the Service at that port not later than July 17, 1899.

Asst.-Surgeon W. K. McAdam, Bureau letter of May 15, 1899, relieving Asst.-Surgeon McAdam from duty at Key West, Fla., revoked and directed to resume command of the Service at Key West.

Asst.-Surgeon D. E. Robinson, relieved from duty at Chicago, Ill., and directed to proceed to Mobile, Ala., and report to the commanding officer for duty and assignment to quarters.

Acting Asst.-Surgeon G. H. Altrea, granted leave of absence for four days.

Acting Asst.-Surgeon L. C. Bean granted leave of absence for two days.

Fred C. McLean appointed acting asst.-surgeon, U. S. Marine-Hospital Service, for duty at Evansville, Ind.

RESIGNATION.

Sanitary Inspector W. F. Brunner, resignation accepted as tendered, to take effect June 30, 1899.

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended July 1, 1899:

SMALLPOX—UNITED STATES.

Georgia: Savannah, June 18, 5 cases.

Illinois: Chicago, June 24 to 30, 2 cases.

Indiana: Evansville, June 24 to July 1, 6 cases.

Kentucky: Louisville, June 24 to 30, 4 cases.

Louisiana: New Orleans, June 24 to July 1, 2 cases, 1 death; Shreveport, June 24 to July 1, 1 case.

Massachusetts: Boston, June 30 to July 2, 2 cases, 1 death; Fall River, June 27, 1 case.

New York: New York, June 24 to July 1, 7 cases.

North Carolina: Charlotte, June 24 to July 1, 2 cases.

Ohio: Cincinnati, June 23 to 30, 1 case; Cleveland, June 24 to July 1, 2 cases.

Oregon: Portland, June 29 to date, 4 cases.

Pennsylvania: Allegheny Co., June 3 to 26, 11 cases; Belle Vernon, June 3 to 26, 1 case; Browville Township, June 3 to 26, 34 cases; Cambria Co., June 3 to 26, 22 cases; Clearfield Co., June 3 to 26, 1 case; Fayette Co., June 3 to 26, 10 cases; Jefferson Co., June 3 to 26, 5 cases; Philadelphia, June 3 to 26, 40 cases; Somerset Co., June 3 to 26, 9 cases; Washington Co., June 3 to 26, 11 cases; Westmoreland Co., June 3 to 26, 1 case; at Penn Station, several.

Virginia: Norfolk, July 2, 1 case; to date, 255.

Washington: Wallawalla, June 29, 8 cases.

West Virginia: Beewood, July 1, 1 case.

SMALLPOX—FOREIGN.

Belgium: Antwerp, June 10 to 17, 3 cases, 1 death.

Brazil: Bahia, June 10 to 17, 1 case; Rio de Janeiro, May 19 to 26, 16 deaths.

China: Hongkong, May 4 to 27, 5 cases, 2 deaths.

Cuba: Havana, June 29, 4 deaths.

England: Liverpool, June 10 to 17, 1 death; London, June 10 to 17, 1 case; Gibraltar, June 5 to 11, 1 case.

Greece: Athens, June 10 to 17, 82 cases, 7 deaths.

India: Bombay, May 27 to June 4, 4 deaths; Calcutta, May 13 to 20, 1 death.

Mexico: Mexico, June 3 to 25, 25 cases, 16 deaths.

Russia: Moscow, June 10 to 11 cases, 11 deaths; Odessa, June 10 to 17, 7 cases, 1 death; St. Petersburg, June 3 to 17, 36 cases, 12 deaths; Warsaw, June 3 to 10, 1 death.

Scotland: Glasgow, June 10 to 17, 1 death.

Strait Settlements: Singapore, April 1 to 30, 13 deaths.

Turkey: Smyrna, June 11 to 18, 8 deaths.

YELLOW FEVER.

Africa: Grand Bassa, Ivory Coast, reported present.

Brazil: Bahia, June 3 to 17, 70 cases, 36 deaths; Rio de Janeiro, May 19 to 26, 10 deaths.

Columbia: Panama, June 16 to 23, 3 cases, 3 deaths.

Cuba: Havana, June 15, 6 cases, 12 deaths; Matanzas, June 17 to 24, 1 case death; Santiago, June 3 to 10, 11 cases, 20 deaths, principally among troops.

Mexico: Cardoba, June 21, 23 cases, 14 deaths; Merida, July 1, 1 case; Mexico, June 3 to 25, 2 deaths; Vera Cruz, June 22 to 29, 35 deaths.

San Salvador: San Salvador, June 20, reported present.

CHOLERA.

India: Calcutta, May 13 to 27, 46 cases; Kurrachea, May 10 to 17, 29 cases.

PLAQUE.

China: Hongkong, May 6 to 27, 319 cases, 93 deaths.

Alexandria, June 16 to date, 35 cases, 10 deaths.

India: Bombay, May 30 to June 8, 66 deaths; Calcutta, May 13 to 27, 10 cases; Kurrachea, May 14 to 16, 10 cases; Mauritius, May 4 to 22, 5 deaths.

On Japanese steamship *Nippon Maru*, from Hongkong, and Japanese ports, for San Francisco, May 20, 1 death.

CHANGE OF ADDRESS.

Brown, P. W., from Atlar to Fish Hook Hill.

Clark, R. C., from 8227 to 6204 Peoria Ave., Pittsburg, Pa.

Bacop, J. E., from Waukesha, Wis., to Enid, Oklahoma Territory.

Bradley, H. M., from Riverside Hospital to 400 W. 57th New York City.

Chase, O. E., from Ann Arbor to Travers City, Mich.

Conrader, H. D., from Ann Arbor, Mich., to 154 Washington St., Elmira, N. Y.

Cross, E. D., from 3141 Indiana to 3142 Prairie Ave., Chicago.

Clark, from 305 7th Mo. to Elms, Ill.

Conrad, George, from 347 S. Main St. to Univ. Hosp., Ann Arbor, Mich.

Cunningham, from 1285 to 1271 Van Buren St., Chicago.

Clarke, J. T., from 411 Michigan to 503 S. 14th St., Toledo, Ohio.

Parsons, A. R., from 414 Indiana to 100 State St., Chicago.

Dittmore, J. H., from Troy to Axtell, Kans.

Flynn, J. C., from Philadelphia to Box 36, Salem, N. J.

Griffin, O. A., from 1929 Deming Court to 901 S. Chicago.

Griffin, O. A., from Ann Arbor, Mich., to Fayette, Ohio.

Hawley, E. R., from 3614 Lake Ave. to The Lorraine, 36th and Ellis Ave., Chicago.

Hawley, E. R., from Ann Arbor, Mich., to Fairmount, Ind.

Hardy, J. J., from Wittville to Cayana, Indian Territory.

Hitt, A. W., from 95 E. 51st to 147 E. Lake St., Chicago.

Hunt, E. F., from Lexington Hotel to 100 State St., Chicago.

Holladay, F. S., from Detroit to Club House, Les Cheneaux Islands, Mich.

Hering, E. R., from Cross Plains to Manawa, Wis.

Leahy, E. R., from 230 Commerce Building, Kansas City, Mo.

Litvin, A., from 291 W. 14th St., to 350 E. North Ave., Chicago.

Mitchell, J. M., from Pontiac to 687 Jackson Boulevard, Chicago.

Murray, H. D., from Thomson to 100 State St., Chicago.

Nichols, C. M., from Philadelphia to Delaware Water Gap, Pa.

Norris, R. W., from Philadelphia to Eleanor, Pa.

Owen, D. W. C., from 3864 Park to 1509 S. Vandeventer, St. Louis, Mo.

Randolph, A. G., from Monroe St. Hosp. to 323 W. Van Buren St., Chicago.

Richmond, W. B., from Ann Arbor, Mich., to Mt. Pleasant, Iowa.

Ross, E. R., from Chicago to 111 Milwaukee, Wis.

Sepp, C. E., from Mt. Vernon to South Omaha, Neb.

Shannon, L. W., from 713 Harrison to 228 Maxwell St., Chicago.

Stephen, J. T., from Kosciusko to Zilpha, Miss.

Stearns, E. E., from 186 Winchester Ave. to 716 Congress St., Chicago.

Spencer, N. W., from Walnut, Iowa, to Montrose, S. D.

Thornton, J. W., from Earlring, to Lansing, Iowa.

Wilson, A. L., from 1327 N. Illinois St. to 1520 N. Capitol Av., Indianapolis, Ind.

Wiley, H. H., from Detroit to Utica, Mich.

Wright, J. H., from Richmond, Va., to Coharie, N. C.

The Journal of the American Medical Association

Vol. XXXIII

CHICAGO, ILLINOIS, JULY 22, 1899.

4

Original Articles.

THE UTERUS*

WHY VAGINOFIXATION, VENTROFIXATION AND VENTRO-SUSPENSION THEREOF SHOULD BE AVOIDED IN CASES THAT RETAIN ANY CAPACITY FOR CONCEPTION.

BY ALBERT GOLDSPOHN, M.D.

Professor of Gynecology Post-Graduate Medical School; Senior Gynecologist to the German Hospital; Attending Gynecologist to the Post-Graduate and Charity Hospitals.
CHICAGO.

1. They are "unnatural, unsurgical and unscientific." The aggregate normal effect of the healthy and properly developed supports, attachments and guy-ropes of the uterus is to hold it in a state of stable equilibrium, in a sufficient degree of anteversion to secure the supporting aggregate impact of intra-abdominal pressure upon its posterior surface. This, the greatest of all forces in the abdomen and pelvis, then maintains that forward obliquity of the body and fundus of the uterus which experience has abundantly demonstrated to be not merely essential, as a rule, to maintain a normal balance in its circulation and in that of the adnexa, but also to be the most benign safeguard against descensus of the uterus or ovaries, or both. While the entire organ has a considerable but very variable degree of mobility in all directions, its principal portion—the body—has a very large range of normal mobility, like an inverted pendulum in an anteroposterior direction. This wide range of motion of its body, which is so necessary in view of the bladder, and its general freedom to expand and contract, and to rise untrammelled in pregnancy from the pelvis into the abdomen, are secured chiefly by the total absence of all connections or attachments to its vertex and its anterior or posterior surfaces. Therefore, the thought of opening the abdomen from any direction and inflicting fixations upon any one of these surfaces which are destined to be free, and thereby limiting the normal mobility or expansibility of the body of the uterus in some degree, is repugnant to every rational instinct; especially as it is done or proposed for conditions that are never serious, that may cause an *indicatio quod valetudinem* but never *quod vitam*. These operations effect at best a substitution of one abnormal condition for another. They are a loan from the domain of pathology, that we need to make exceptionally when the proper supports of the uterus are very seriously deranged or defective, as in those cases of marked descensus uteri in which hysterectomy seems still more objectionable or less effective. Pronounced cases of the so-called prolapse of the uterus, especially those of the genuine type in which there is not merely an elongation of the supravaginal cervix, but an actual descent of the entire uterus, are not radically curable by any kind or degree of plastic proced-

ures upon cervix, vagina and perineum, singly or combined; but they require either a shortening of the broad and sacrouterine ligaments or some ventral fixation of the uterus as a supplementary act to the plastiques upon the pelvic floor. But, fortunately, these cases are mostly beyond the period of their life in which pregnancy is possible or probable, and if they are not, they should be sterilized, at the time of the operation, by removal of the Fallopian tubes alone, which should be excised from the uterus and the resulting wounds sewed up. Otherwise a cure of such marked cases of descensus should not be attempted by the help of an auxiliary ventrofixation, if attempted at all.

2. The essential features in the technic of these operations that give them any stability in good results that they may or are intended to do are in every detail directly antagonistic to the interests of the uterus in gestation and labor. There is no parallelism of functions here. Any choice of technic that is intended to avoid serious complications in labor correspondingly sacrifices the certainty or durability of the principal purposes of the operation; and vice versa. So, in ventrofixation, in order to avoid obstetric complications, the point of fixation on the uterus dare not be taken upon its posterior surface nor upon its vertex, but as low down upon its anterior surface as is likely to do any holding. The point of attachment to the abdominal wall should not be taken low down, so as to enable the uterus to rise into the abdomen in gestation; and to permit the deeper muscular strata in the uterine wall to slide by—the fixed point caught in the ligatures² in gestation, these should be passed as superficially in the uterine wall as is likely to do any good, while, on the other hand, if a complete and lasting result in holding the displaced organs in an improved position—not to speak of a perfect one—is the aim of the operator, he must of necessity do very differently and in an opposite direction in each of these features. He cannot serve both masters in the same act.

Thus, vesicofixation alone, or intraperitoneal vaginofixation—making seroserosus junctions—do not interfere with labor; but, pregnancy and labor also uniformly destroy the fixations. On the other hand, extraperitoneal vaginofixation—creating a serosofibrous or fibrofibrous junction—holds the uterus as a rule, but it also, quite as certainly, presents obstacles to gestation and labor which are so serious that this operation has already been practically discarded. What is true of this operation is also true, to a milder degree, of the direct and firm fixation of the fundus uteri to the abdominal wall by a serosofibrous or by a fibrofibrous junction, without any intervening band—the ventrofixation of Leopold³ and Czerny⁴. This operation is of real service for some cases of extreme descensus uteri, as before mentioned, and in other rare and extreme conditions with which the round ligaments can not be made to cope successfully, and it is permissible then, because sterility either exists or it is readily accepted and secured at the same time.

*Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1898.

But as examples of the obstetric complications that it has otherwise induced, the following should be kept in memory: Out of Milander's² collection of 54 cases of pregnancy and labor after this operation, 11 cases, or 20 per cent., required severe operative delivery; † in Noble's American collection of 43 cases, or 16.25 per cent. and 18 in Noble's⁴ foreign collection of 133 cases, 13.5 per cent. W. A. N. Dorland⁷ collected 179 cases of pregnancy following this operation, in which 111—62.01 per cent., or nearly two-thirds of the whole number—experience some uncommon abnormality in gestation or in labor, or in both; and in 37.99 per cent. of the cases these disturbances occurred as complications of labor, which are more serious. Disorders during gestation that are recorded are, among others, excessive vomiting, abortions, interference with the bladder and many traction pains so severe as to make the recumbent posture necessary, or to require the induction of premature labor. Leaving aside the disasters following extraperitoneal vaginofixation as an obsolete operation, the following are some of the serious or fatal complications of parturition after ventrofixation alone: Gubaroff,⁸ Veldi¹⁹, Mackenrodt¹¹, Norris¹², C. P. Noble¹³, Michaelis¹⁴, Krim¹⁵ and Guerdard¹⁶, Strassman¹⁷, Gottschalk¹⁸, Ols-hausen¹⁹ and Edebohl's²⁰, each report one case, while Bidone²¹ publishes four instances in three patients out of six total cases of pregnancy following ventrofixation. This operator advises an abdominal section for the removal of the fixation two months before term, in every case of this kind. In all these cases together four Cesarean sections were made and were followed by recovery; and two Porro operations ended fatally, and in the remaining cases other severe and uncommon operative aid was required.

It is true that these obstetric disasters are usually avoided by a mediate fixation—the so-called ventrosuspension, in which the uterus becomes hitched to the abdominal wall by one or more bands that allow it a variable degree of mobility. But what is gained in this direction is largely lost in another regard, from the imminent liability to intestinal obstruction and to the suffering of more frequent and unavoidable abdominal pains due to smaller interferences with the intestines that cling to all such unnatural and intruding bands, bridges or clefts, spanning from one viscus to another, or from any viscus to the abdominal parietes. Notwithstanding some nice names that are calculated to obscure their heinous nature, they are always pathologic, whether arising spontaneously from disease or from misdirected efforts of a surgeon. And the latter would usually regard an operation for their removal at some convenient time as proper, when such menacing bands have originated otherwise than by his voluntary act.

The reports of cases of ileus following at variable periods after ventrosuspension, have only begun to appear. But I have chanced to notice the following without any exhaustive search: Ruchl²², Jacobs²³, Ols-hausen²⁴, and A. L. Smith²⁵ each publish a case; while Rufus B. Hall says he has dealt with three cases and thinks the operation of ventrosuspension has had its day. In a second abdominal section for severe disabling pain in the abdomen, on account of which the patient could not walk nor stand erect, Professor Fitsch²⁶ found the omentum so engaged between the uterus and bladder, after a former ventrofixation by Ols-hausen's method—attaching the uterus at its cornua or the origins of the round ligaments—that he had to reset a large portion of it.

Furthermore, Fihling's statistics show a mortality-

rate of 5 per cent. after all these operations²⁷ (Stein-thal²⁷) and ventral hernia has followed these, as other abdominal sections, in the hands of many men, more frequently than that. And finally, the rate of recurrence of retroversion, etc., after this operation, is so high, when the operation has been carefully done so that it will not create serious obstetric complications, that no intelligent patient will accept it if the truth in regard to it is honestly stated by the doctor.

Again, everything about these so-called artificial ligaments is very uncertain and ungovernable, whether they be constructed by the use of the urachus, or a strip of parietal peritoneum sewed to the uterus or drawn through a slit on its surface, whether they be developed by the pulling out of an exclusively peritoneal parietal fixation of the fundus or of the cornua, or whether they be formed by sewing the round ligaments of the uterus into a median ventral incision or against or into the abdominal wall at points laterally from the median line, so that clefts or pockets for the omentum or intestines result. No operator knows with any reasonable certainty what will be the strength of his newly-made attachments for desirable service or for occult mischief; he does not know how soon nor how long they will pull out, nor how long these enemies to nature and its efforts will last. This entire matter is made ungovernable by the uncertain and incalculable degree of peritoneal reaction upon the sutures of any kind of material—as foreign bodies—and by the frequency of slight infections that nature overcomes readily enough, but does so by throwing out an amount of exudate and by forming a volume or depth of adhesions that were not bargained for by the operator. This fact has been repeatedly impressed upon me in doing second abdominal sections upon various cases. A striking one was a few weeks ago: In doing a vaginal hysterectomy only for a large metritic uterus and septic tubo-ovarian conglomerate and ovarian cyst of one side, I was surprised to find two short and very dense fibrous bands close together and nearly a centimeter in thickness, attached to the fundus and holding it high up against the upper vesical boundary. Nothing but actual cutting would sever them; and in case of pregnancy they would have done mischief certainly. These resulted, as my records show, from a mere auxiliary vesicofixation with finest silk and a round milliner's needle, that I had made two years previously to supplement an intra-abdominal shortening of both round ligaments for a retroverted metritic uterus, after curettage and removal of adnexæ of one side, while at that time I could not expect that more than a slight seroserosous union would result, that would not embarrass any uterine function.

3. But another most commanding reason why these *denier* operative resorts to things pathologic in gynecologic surgery are not only not necessary but out of order in all possibly fruitful females is, that there are other surgical expedients quite generally available, that are entirely within the domain of normal anatomy and physiology, that help nature and are assisted by nature because they exercise a parallelism and no antagonism of forces. The only normal structures that exist and can be consistently made use of upon this declaration of principles, for the purpose here intended, are the round ligaments of the uterus. They are the only things that, as a part of the uterus, keep pace with it in its physiologic changes and migrations. They grow with it approximately in thickness and length during gestation. They participate with it in involution after parturition. They may be dealt with: 1, by median ventral celio-

omy; 2, by anterior median, vaginal celiotomy, and 3, by way of the inguinal canals. By the first route they can be shortened or can be made to hold the uterus, anteverted only by intra-abdominal methods which consist exclusively of looping them upon themselves or upon each other, or upon the anterior or posterior surface of the uterus; and this is only possible by means of sutures that are in danger of cutting off the circulation partly on the one hand and of cutting out on the other; so that the extent and permanency of the desired adhesions that are necessary to maintain the loops or other transformations in the ligaments is uncertain; and they do not stand the test of pregnancy and labor, although they do not present any obstacles to these functions. Substantially the same intra-abdominal shortening of the round ligaments can be made by the vaginal route with a good result, in the absence of pregnancy, especially when supplemented with a seroserosus vesicofixation. Furthermore, vaginal fixation of the round ligaments is ideally a creditable procedure and is recommended by several good gynecologists—Bode, Wertheim and others. I have no experience with it. But all these operations either do positively not stand the test of normal child-birth or they have a great burden of proof yet to bring that they can stand it. Far better are the results from shortening the round ligaments by way of their natural channels—the inguinal canals. Here no dependence is placed upon light suturing or slight adhesions. The ligaments are not distorted, and no sutures or plastic junctions of any kind are needed within the peritoneal cavity, as in shortening these ligaments by every other possible route. On the other hand, the strong central half of the ligaments alone is made use of, additionally reinforced by a strip of firmly attached peritoneum, and untrammelled by any kinks or sutures. Thus alone can they be expected—and in this manner alone have they been proven—to fulfill their ideal function, i. e., to grow, *pari passu*, with the uterus in gestation, to become involuted with it in the puerperal period and to guide and guard it in anteversion thereafter.

The original Alexander operation greatly modified and improved is the only operation practiced or proposed that not only does not borrow from things pathologic and antagonistic to nature—as do all ventral attachments—and does not create obstacles to gestation or labor, but also guarantees against a return of the retroversion afterward, provided that the operation is properly performed. And this means a very much greater conception as to its technic and requirements than was entertained by Alexander himself, or is entertained now by those who speak of one-inch incision, of not laying open the inguinal canal, of not opening the peritoneal cavity and similar perile vagaries. This, the modern procedure, which resembles that of Bassini for hernia far more than it does the operation introduced by Alexander, is the only operation that has been proven, or is likely to be proven, to stand the crucial test of pregnancy and labor. All others, according to all evidence so far available, either create obstacles to these functions, or the good that they offer or were intended to do is ended by their supervision.

And when this modern Alexander is combined with inguinal celiotomy* by way of the temporarily dilated internal inguinal ring, for the severing of adhesions, for the resection or removal of diseased appendages and for

the permanent restoration of descended ovaries to their normal locations, it most nearly fulfills the highest ideals now entertained.

This combination originated with the writer accidentally and was executed by him completely for the first time, Sept. 18, 1893, when he removed a diseased tube and ovary via the left internal inguinal ring, in the course of an Alexander operation. From Jan. 1, 1897, to May 29, 1899, inclusive, I performed these combined operations, called by me the "Improved and Extended Alexander Operation," sixty-five times; twelve times with simple digital exploration, or examination or freeing of the adnexa of both sides, which I never omit; 19 times with resection of one ovary; 13 times with removal of one ovary and tube; once with removal of both ovaries and tubes that were unexpectedly found to be tubercular, very adherent and moderately distended, with cheesy pus; 11 times with removal of tube and ovary of one side and resection of the other ovary. Seventeen times a descended ovary was suspended by shortening its proper lateral suspensory ligament, and in five or six cases salpingostomy was done. One of the simple cases was pregnant two and one-half months, and the uterus remains now in normal position, some four months after a normal labor.

In one instance a tubal pregnancy, which was just beginning to rupture, was removed with the tube entire, and the ovary—the only one—left in. Although I have always done one or more other operations—such as curettement, Schroeder cervix operation, colporrhaphy or perineorrhaphy—in conjunction with this extended Alexander, in every case except the pregnant one I can join a number of other operators in declaring that even this extended Alexander operation, in careful and competent hands, has practically no mortality; for after a total number of over 170 cases of all Alexander operations—old and new—I have yet to experience the first death. And the results in the last 100 cases, in most of which not merely the retroversion but also the other half of the indications, i. e., that pertaining to the appendages, was attended to, are so satisfactory that they distinctly emphasize the importance of the extension feature of the operation. And by cutting nothing but skin and fat and severing all the other structures—all the supporting ones—bluntly by splitting, in making the wound; and by following the principles and technic of the Bassini hernia operation always in closing it, we not only avoid the supervention of hernia, but incidentally cure a number of inguinal hernia that are impending or are fully developed.

REFERENCES.

- McGannon: *Am. Gyn. and Obst. Jour.*, August, 1896, p. 197.
- Sippel: *Chl. f. Gyn.*, 1897, s. 1179.
- Leopold: *Sammli Klin. Vortrage*, No. 338, Sec. 12.
- Göerz: *Beiträge z. Klin. Chirurg.*, 1888, Bd. iv, s. 164.
- Milinder: *Zeitsch. f. Geb. u. Gyn.*, Bd. xxxiii, s. 464.
- Noble, C. P.: *Am. Gyn. and Obst. Jour.*, 1886, vol. ix, p. 543.
- Dorland, W. A. N.: *Am. Jour. Obst.*, Jan., 1897, pp. 113, 114.
- Cameron, J. C.: *Am. Gyn. or Obstet. Jour.*, vol. ix, pp. 543, 544.
- Gubaroff: *Meditsina*, St. Petersburg, vol. vii, pp. 130 and 169.
- Yeld: *Berlin. Klin. Woch.*, 1895, s. 793.
- Macbronn: *Monats. f. Geb. u. Gyn.*, 1885, B. ii, s. 355.
- Norris: *Amer. Jour. Obst.*, vol. xxxii, p. 939.
- Noble, C. P.: *Amer. Jour. Obst.*, 1896, vol. ix, p. 543.
- Michaelis: *Amer. Medico-Surg. Bulletin*, Mar., 1896, p. 346.
- Krim: *Cincin. Med. Jour.*, 1886, vol. xi, p. 323.
- Guerrard: *Chl. f. Gyn.*, 1897, No. 20.
- Strassmann: *Archiv. f. Gyn.*, Bd. i, s. 473.
- Gottselink: *Chl. f. Gyn.*, 1891, No. 8.
- Albison: *Zeitsch. f. geb. u. Gyn.*, Bd. xxxii, hft. 1.
- Macbronn: *Wash. Obst. and Gyn. Society*, Dec. 2, 1894.
- Bidon (Bologna): *Atti della Soc. Ital. di ost. ginec.*, 1867.
- Kuehl: *Sammli. Klin. Vortrage*, N. F., Nos. 180 and 186.
- Noble: *Zeitsch. f. geb. u. Gyn.*, Bd. xxx, s. 250.
- Albison: *Ibid.*, Bd. xxxii, s. 17.
- Smith, A. L.: *Amer. Gyn. and Obst. Jour.*, Sept., 1897, p. 325.
- Fritsch: *Chl. f. Gyn.*, 1897, No. 33.
- Staubin: *Berlin. Med. Woch.*, 1896, s. 773.
- Hull, R. B.: *Amer. Jour. Obstet.*, 1896, vol. xxxvi, p. 389.

* For the technic of this combined operation, named by me the "Improved and extended Alexander operation," see *American Gynecological and Obstetrical Journal*, February, 1898; *Medical Record*, Oct. 8, 1898; and *American Journal of Surgery and Gynecology*, November, 1898.

UTERINE RETRODISPLACEMENTS.*

A NEW OPERATION FOR THEIR CURE.

BY C. E. RUTH, M.D.

Professor of Surgical and Descriptive Anatomy, Keokuk Medical College;
Professor of Clinical Surgery, St. Joseph's Hospital,
KEOKUK, IOWA.

Had the older plans always been satisfactory, I should not present this one, hence no apology is required for obtruding yet another method upon you. It may probably be more properly called a new application of an old principle, and has for its object the replacing of the round ligaments or their temporary substitution by efficient means until they are again able to hold the uterus forward enough to entirely prevent retrodisplacement.

It is equally applicable to retroflexion and version. It can be used almost equally well in the lean and obese. It requires little time, usually not more than five or ten minutes of intra-abdominal work. An incision is made at or near the median line above the pubes, the length of which depends upon the thickness of the abdominal walls, skill of the operator and the intra-abdominal and pelvic pathology and will usually not need to be more than two or three inches in length.

The uterus is brought forward and a large ordinary full curved needle, or, if the operator prefers, a needle may be used with the eye at the point, armed with a full-sized kangaroo tendon, which is passed under the peritoneum, directly across the anterior surface of the uterus, then along the interior of the round ligaments, or, when they are absent or practically so, the needle simply passes along the interior of the peritoneal fold which represents the course of the round ligament. When the abdominal ring is reached, the needle no longer follows the round ligament, but pierces the abdominal wall directly opposite the ring and emerges through the skin in contact with Poupart's ligament, near its middle on one or the other side.

The needle is now unthreaded, the end of the tendon split, say two inches, one half is again threaded into the needle and passes under Poupart's ligament to the opposite side of the same and the ends are next tied together over the ligament. This fastening of the end of the tendon to Poupart's ligament may be done through a small incision down to the ligament or subcutaneously, as the operator may desire. The other end is dealt with in like manner, enough tension being made to bring the uterus as far forward as may be desired and retain it in position. A little care is required to have the tension the same on each side, or the uterus will be drawn to one or the other side, as the large kangaroo tendon does not run readily for so great a distance. It will be noticed that the long round ligaments will thus be thrown into numerous folds and convolutions as it is taken up on the running thread.

The life of this material is at least two months and if it were necessary it might probably be made longer. At the end of two months the tendon has practically disappeared and its place has been taken by exudation material which has become for the most part a strong fibro-intestinal cord which has little tendency to relax under any ordinary tension.

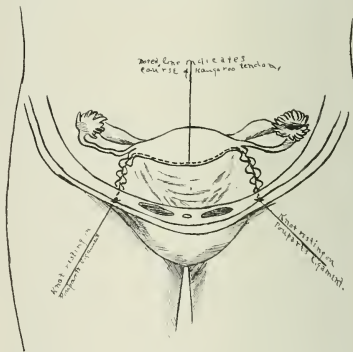
In January, 1899, I operated on Jennie M., aged 17 years, for retroflexio uteri. I first made the usual incision on the right side for an "Alexander's operation" and found no round ligament in the inguinal canal. As it was necessary to open the abdomen I concluded to open in the median line that I might the more readily

deal with any ovarian or tubal pathology, should it exist. I found the abdominal portion of the round ligaments almost entirely absent, being represented by little more than folds of peritoneum, extending from the point of normal uterine attachment of the round ligaments to the abdominal rings.

As my patient was but 17 years old, with healthy ovaries and tubes, I did not feel justified in doing a ventrofixation or suspension, nor had I any confidence in the ordinary intra-abdominal methods of shortening the round ligaments, being long successful in ligaments so attenuated or rudimentary as these.

I was of opinion that I would obtain a better immediate and remote result in far less time by using the kangaroo tendon in the manner already referred to than by doing any of the ordinary intra-abdominal operations for shortening the round ligaments. Dr. T. J. Maxwell, professor of surgery in the Keokuk Medical College, was present at the time and noted the case with which the uterus was brought and held forward to any desired position by means of the tendon, whose ends were fastened around the middle of Poupart's ligament.

The uterus was not absolutely or rigidly fixed, as one



might suppose, but yielded to the pressure upward and tension downward by virtue of the fact that the tendon did not pass in a straight line from one side to the other, but in a slightly irregular segment of a circle. Again a slight give was to be obtained from the attachment of the tendon ends to the middle of Poupart's ligament. A Hodge pessary was introduced and worn two months. On its removal the uterus remained in perfect position, or rather in the antevruted position in which it was placed at the time of operation.

Three and one-half months after the operation, the uterus is still in position, with no discomfort from it whatever, and no apparent tendency to relaxation of the round ligament supports. I am aware that one case is not enough to prove an operative procedure thoroughly, especially in three and one-half or four months' time, but it may teach us some things.

The following points may be said to be worthy of consideration:

1. It exposes no denuded traumatized surface to contract troublesome adhesions.
2. It does not permanently introduce any foreign material.

*Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

3. It enables the natural supports to take up the work successfully.

4. It gives the desired position of the uterus.

5. It leaves the uterus with ample mobility.

6. It does not interfere with the development of any part of the uterus in performing its normal physiologic functions.

7. It is as quickly done as any operation having for its object the accomplishment of the same ends, and can be done in much less time than some of them.

8. It gives every opportunity for dealing with any ovarian, Fallopian or uterine pathology, with but a single wound, for the abdominal wall is in no sense weakened, except at the central incision, as nothing is cut over Poupard's ligament except the skin and superficial fascia. The skin cuts may be entirely obviated by substituting the cutaneous incisions with needle punctures only.

DISCUSSION ON PAPERS OF DRs. GOLDSPOHN AND RUTH.

DR. THOMAS J. MAXWELL, Keokuk, Iowa.—I saw Dr. Ruth perform the operation he has described. He did it easily, and he has very well represented it. Of course, it was an experiment. I did not know how it would terminate at the time, but it seems to have ended successfully. The operation is not a difficult one to do. It is a little more complicated than a simple suspension of the uterus, but if it should prove successful by further operations, it will be a great advancement in the fixation or correction of this common condition of retroversion of the uterus.

DR. ALBERT GOLDSPOHN, Chicago.—I wish to say in a few words that the value of all operations for rectifying retroversion of the uterus should be determined by one crucial test, that is, they do not create complications in gestations or obstructions to labor; and, on the other hand, that their results will also not be wiped out when those physiologic phenomena supervene, and on that test I do not have much faith in the procedure described by Dr. Ruth. Furthermore, anything calculated to assist the contraction or growing strong of the round ligaments that is done outside of the post parturient period is not likely to be successful. The only time when we can expect such a contraction of the round ligaments to take place is when involution is in progress in the uterus and the round ligaments. That time is limited to a couple of months after labor. And outside of that period, all surgical or mechanical measures that serve temporarily only, with the expectation that the round ligaments will contract because of the rest that is given them, are not successful; they will not be found to be successful in the end, when a large number of cases are observed for years; because the round ligaments will not usually become short and strong, permanently, at any other time, even if they are believed of duty for a number of months.

DR. B. SHERWOOD-DUNN, Boston.—I recently operated on a case in which the uterus was fixed forward by the vaginal route, for disease of the ovaries, and I found a ligamentous band six inches in length. My personal experience has led me to adopt one of two courses in fastening the uterus forward, that is, intra-abdominal shortening of the round ligaments by the Gill-Wylie method, or the Alexander operation to maintain the physiologic relations. It does not interfere with the physiologic performance of the duty of the round ligaments, and it does not give rise to the subsequent complications which the essayist has brought forward. I have followed Dr. Goldspohn's writings for years with great interest; he has devoted much time and attention to this subject, and I have gathered the impression in my own mind that there is no man in our profession in this country who has written more, or who has paid as much attention to this particular subject as the essayist, and I am glad to have heard his paper to-day.

DR. CHARLES E. PADDOCK, Chicago.—I wish to thank Dr. Goldspohn for his excellent paper. It is a great help to those who are giving obstetrics considerable attention. In my own practice I have encountered ease after ease of ventrofixation, and these operations must be looked upon as being only of temporary benefit. As a rule, many women abort after these operations, and they are left in a deplorable condition. These women go through pregnancy nervous wrecks; they suffer during their entire pregnancy. I have seen very few cases that went on to term after operations for ventrofixation of the uterus; many of the women have aborted. Intestinal obstruction is also a factor to be considered.

Intestinal obstruction is also a factor to be considered.

DR. WILLIAM H. HUMISTON, Cleveland, Ohio.—I was very much interested in the Alexander operation when it was first brought to the attention of the profession. I visited Alexander, saw him operated by his method, and I did many operations by his method after I returned home, and I find that in order to make a success of shortening the round ligaments you must have normal adnexa. If you have not normal adnexa and you have a retroversion of the uterus to deal with, the operation is not indicated. You can cure these cases, where you have a simple endometritis, by a curettement, placing the uterus well forward, with the woman in the knee-chest position, and supporting it with a pessary. It has been my experience that where we have diseased appendages, shortening of the round ligaments will do no good. I do not do ventrofixation unless there is a diseased condition of the appendages which will require their total removal on both sides, then I make it. But in the simple cases of retroversion of the uterus without diseased appendages, I have not failed to obtain a good result by an ordinary curettement, with replacement of the uterus and keeping it in position from six to twelve weeks.

DR. C. C. FRIEDERICK, Buffalo.—After having had considerable experience with ventrofixation, I have discarded it because I feared the results, from the experiences of other men; but in reply to Dr. Paddock, with reference to women aborting as the result of ventrofixation, I will say that I have had six cases of pregnancy out of seventy-five ventrofixations that I performed about five or six years ago, and none of them aborted; some were pregnant twice, and they went through labor without any pain or distress. Because some women have distress following ventrofixations it does not follow that all of them do. Some have difficult labors, others comparatively easy ones. I never do ventrofixation unless it be to suspend the uterus in a case of prolapse, or in a case where I have removed the tubes entirely and there is no chance of the woman becoming pregnant again, or in a case in which I remove both tubes and ovaries, or in a woman who has passed the menopause; I either do internal shortening of the round ligaments, or Gill-Wylie's, or Dudley's, or the Alexander operation as modified by Edebohls. I never did but two Alexander operations, and was not pleased with them. I have done seventy-five after the method spoken of by Dr. Goldspohn, all being successful with the exception of one, which recurred after a severe labor and a very hard pull.

DR. JAMES F. W. ROSS, Toronto, Ont.—I have some pronounced views on this subject, and I feel somewhat diffident in speaking on account of being a guest. However, I am pleased to have been called upon. I never do ventrofixation; it is an operation for which I have no use. It is anatomically and physiologically unsound, as Dr. Mann of Buffalo said years ago. The experience of Dr. Frederick may be well and good; but the statistics of Dr. Goldspohn convince me positively that my own views on the subject have been correct. A large number of cases have been brought forward in which a difficulty in labor has been found as a consequence of this abnormal condition in which the uterus has been placed. The miscarriages that have been produced, and the intestinal obstruction which has followed in some cases show conclusively that if the Creator intended the uterus should have a ligament in that place he would have put it there. The Alexander operation has been too highly overrated, in my estimation, by Dr. Goldspohn. There are other well-known operators in the country who have given us decidedly adverse opinions regarding its benefits. A considerable number of cases have been reported in which the uterus has gone back again to its original condition; cases in which hernia has followed as a consequence of the operation, and cases in which it was impossible to find the ligaments. The only method that meets with any approval is the intra-abdominal shortening of the round ligaments. Within the past year I have had one melancholy experience with it. I shortened the round ligaments intra-abdominally, and the patient during the act of vomiting tore a large rent in the left broad ligament. I was called out of town that afternoon, and did not return home until the next morning. I opened the abdomen and found it full of blood. A colleague operated on a woman in Pittsburg last year, I assisted him, and she bled to death the next day in consequence of a similar accident. I have fastened the uterus by ventrofixation in one or two cases for prolapse, but the next day the uterus was down between the legs. So the operation is of no service in those cases.

The gentleman who read the first paper gave us an admirable drawing, and I only hope his method may be of more service than those operations that have been fully described. I cannot understand why kangaroo tendon should not allow the uterus to come back after absorption has taken place; we have nothing left but a certain amount of cicatricial tissue, and we all know from our experience with abdominal hernia that after

the use of a drainage-tube, cicatricial tissue will stretch to a very great extent. Dr. Pancoast a few years ago showed a specimen before the Philadelphia County Medical Society, of a uterus with a ligament about two and a half inches long after ventrofixation. If this adhesion is produced and the uterus allowed to have a ligament two and a half inches long it is bound to go back and rest in its original place over the sacrum and sacrum nerves, and again produce pain. Many women can be treated by the old-time methods, and their condition can be improved, and I consider many of the young girls operated on need no operation at all. Their symptoms are not due to flexion of the uterus, because there are many women going around with retroflexion of the uterus, unmarried women, who suffer nothing whatever, and show no symptoms of the condition. If they become nervous and hysterical and neurasthenic, and we examine the uterus and find it is turned backward, we are apt to jump to the conclusion that it is the flexion of the uterus which is producing the trouble. A number of cases require no operation, and the ideal operation has not yet, in my opinion, been reached.

DR. JOSEPH EASTMAN, Indianapolis.—For the past five or six years I have been pleased in operating upon cases of prolapse of the uterus, retroverted uteri, etc., by the Mackenrodt operation, opening up through the anterior cul-de-sac into the peritoneal cavity, bringing the uterus forward, stitching it firmly, going well up toward the urethra, using the uterus as a splint at the anterior vaginal wall, thus overcoming the chronic spasms and distress which are an annoyance to women who have passed the menopause, adding to this a complete Emmet's operation upon the perineum, and I have succeeded in relieving a larger number of women than I have in those cases where I have made complete extirpation of the uterus by the vagina. While this operation is objectionable in case pregnancy should take place by changing the axis of the uterus, the operation of Mackenrodt has given satisfaction in cases where there is a possibility of pregnancy occurring.

DR. RUFUS B. HALL, Cincinnati.—I was not here in time to hear all the paper of the essayist, but with reference to ventrofixation, I can recall a number of cases operated upon by myself, where the operation was not made for retroversion, but for disease of the adnexa on one side, a tumor, or what not, with, at the same time, possibly a retroverted uterus. For a number of years I practiced fixing the uterus forward in cases where I could leave a healthy ovary, or an ovary that I could leave at all. I can recall half a dozen or more women who have borne children since those operations, and, with one exception, not a single one has aborted. I have reason to believe that abortion was induced in that one case. This woman has since borne two living children. I mention these cases as a matter of justice. I have no doubt that many of these women suffer greatly, and that they not infrequently abort; many women abort much easier than others. But this is not the most serious objection to this operation. In my experience the uterine ligament is a greater reason why we should not do the operation than any other. I claim we have no right to do an operation which places a patient in this additional risk to jeopardize life hereafter. I have had three cases of intestinal obstruction containing a coil of ileum around this little ligament left afterward. Two of the cases I have operated on, the other having declined operative measures. In these two cases the obstruction was not great, but enough to require great care to tide them over several attacks. The case in which operation was refused died. Autopsy revealed a simple case of intestinal obstruction which could have been relieved by operation, and life undoubtedly saved.

DR. C. R. REED, Middleport, Ohio.—In 1870 I treated cases of retroversion and retroflexion of the uterus by certain methods, and I have continued to treat them since that time, and I believe that the operations that have been described to-day are unnecessary in healthy conditions of the uterus and adnexa. I have treated hundreds of cases of retroversion of the uterus, as well as cases of retroflexion of this organ, have seen the women fifteen years later and they have declared themselves to be in perfect health. They have borne children since. I fear that we do not make a distinction between a healthy uterus with slight displacement and a simple retroversion or retroflexion, which does not necessarily cause a morbid condition aside from displacement. I have found trouble in managing those cases in which there was a roomy pelvis. Now, there may be cases in which fixation or suspension of the uterus, after the manner suggested in the papers, may prove successful, and it may be a proper operation to perform; but I rise to protest against resorting to suspension or fixation of the uterus in cases where simple means will accomplish the same or a better purpose.

DR. RUTH, closing the discussion on his part.—No member

respects the opinions of Dr. Goldspon more than I. It is not worth while to take up all the objections of the different forms of operations that have been devised and practiced for the relief and cure of uterine displacements. We must recognize the fact that only about 15 or 20 per cent. of the cases of retroflexion are cured by any method of either medical or mechanical treatment. This, I believe, we are all willing to grant. A mere displacement of the uterus, a retroversion or reflexion, does not necessarily mean that the patient needs any sort of treatment. I have had a little experience with the different forms of ventrofixation and suspension, and with me they have been so unsatisfactory in the main that I have practically abandoned them. I do not believe in the case of a woman who may possibly become pregnant, that we should substitute one pathologic condition for another. The normal uterus must be a mobile uterus, and the principal point in connection with my paper was the fact, as I have found in my experience, that we cannot expect. Dr. Goldspon may say that he never finds a case in which we can find sufficient strength, when he has folded the parts together in the abdominal portion far enough, that they will give sufficient strength to hold the uterus forward and be able to carry the individual through the period of pregnancy, and yet maintain the uterus in its anterior position. That may be his experience. I do find attenuated ligaments which give me much trouble in a few cases, so that I have devised this simple plan which you have heard me describe. I hope further experience will demonstrate its usefulness and success.

DR. GOLDSPOHN, closing the discussion.—Answering my friend from Cleveland (Dr. Humiston), and Dr. Reed, I will say that I saw things as they see them, and used their weapons just as they do, up to five years ago. At that time I sacrificed the appendage in toto of a much greater number of women in proportion than I do now. I will say further, that I have good cause to believe that they would sacrifice the appendages entirely in one-half the cases in which I do this combination of operations and save the patient's fertility in every case, and also get them well. You cannot handle with pessaries the cases in which I do this operation. It must be understood that I am not speaking of simple cases. The old Alexander operation is not competent to deal with these cases. But, when I stretch the small openings in the peritoneal cavity, that are necessarily made if the round ligaments are shortened properly, by introducing a pedicle forceps and separating its blades, I can introduce my index finger into the cul-de-sac and sweep it over the entire posterior surface of the uterus and liberate the appendages, draw them out of the opening on either side, and trim or remove them. I care very little about the extent of adhesions. But I must have insured myself by repeated bimanual palpation, when the bladder and intestines are empty, that there is no pus, etc., there that could be squeezed into the abdominal cavity. I have my finger in there just as well as I do in a vaginal section, and as a skillful surgeon can deal with the adhesions through a small median ventral incision. The old Alexander operation, without this extension or combination with inguinal celiotomy by way of the dilated internal inguinal ring, is utterly out of question.

I agree with what has been said with reference to slender ligaments. But the part of the round ligament that lies within the broad ligament, is, alone, made to serve. And in drawing out this portion of the round ligament (illustrating) that lies within the broad ligament, you will find the peritoneum intimately adherent to it on one side. We should guard against stripping this off; I always preserve it and a wider strip of the layer of peritoneum, if possible, to reinforce the ligament. After separating the adhesions of the uterus and ovaries, I bring the ligament out far enough by loosening it from the lateral end of the broad ligament, so that when we pull upon it we pull from the fundus uteri, and not from the attachment in the broad ligament, and then bring the uterus far enough forward. When the round ligaments are developed by the operator in this manner, I have not yet found that they would not hold. I attach the ligaments, not to movable and elastic muscles, but to the under surface of Poupart's ligament, which is unyielding.

In regard to the technic of doing this, and how it can be done so as not to cut off the circulation in the round ligament, let me say that by grasping some muscle tissue in each suture before passing the needle through or around the round ligament, the ligament becomes cushioned in vascular muscle, which guards against cutting off its circulation; and the bunch of muscle which we draw down against the under surface of Poupart's ligament at the same time also secures the guarantee against hernia. (Dr. Goldspon went into further details connected with the method described by him, by drawings on the blackboard.)

CEREBROSPINAL MENINGITIS.*

SOME UNUSUAL FEATURES IN THE EPIDEMIC FORM.

BY GEORGE LOUGHEAD EYSTER, M.D.

ROCK ISLAND, ILL.

The writer makes report of the following two cases of epidemic cerebrospinal meningitis with regret that they do not carry with them any original research or new matter in the etiology or pathology of this disease, but with the idea that they emphasize one of the theories as to the access to the meninges of the pathogenic micro-organism now generally recognized as its exciting cause, viz., through the nasal chambers, and secondly, that they rather uniquely illustrate the markedly intermittent type of the disease, with the accompanying lesson that unless great caution is used by the observer, he may readily confound apparent therapeutic results with coincidents in the course of the disease.

It is thought by a large number of authorities that the infection atrium of this disease is the nasal chambers. Indeed Strumpell early pointed out that the disease is frequently preceded by an intense coryza, and Weichselbaum and other bacteriologists following him find the diplococcus intracellularis meningitidis in the nasal discharges of a large proportion of those affected by epidemic cerebrospinal meningitis.

In both the following cases there was history of preceding coryza, the presence of mucopurulent discharges from the nose, cultures from which developed a coccus with all the characteristics of Weichselbaum's diplococcus. In both, the disease was markedly intermittent, assuming in one the tertian type, and in the other the quotidian.

CASE I.—T. B., a saloonkeeper, aged 46 years, gave a negative family history; had always been a healthy, robust man; had never been seriously sick; drank moderately, but never to excess. He was attacked by violent chill and rigor at 4 p. m., February 26, 1899. When first seen by the writer, five hours later, he was very restless, continuously tossing from one side of the bed to the other. The face was livid, with extreme anxiety depicted upon it. There was diffuse and uniform redness of the conjunctiva. The pupils were unequal, the right much dilated, the left contracted; the tongue was heavily coated. The head was retracted; there was convulsive contraction of the muscles of the arms and legs. The temperature was 105.3; pulse 130, respiration 28. There was a mucopurulent nasal discharge, which it was learned had existed for several days previously. He complained of the most intense pain throughout the whole head, and of shooting, stabbing pains radiating from the upper portion of the spine. These pains were much aggravated by pressure upon the spinous processes of the cervical and upper dorsal vertebrae.

There was marked hyperesthesia of the skin, rendering it extremely painful to the slightest touch. Any attempt to flex the head evoked outcries of agonizing pain. There was marked delirium, which rapidly increased until it became maniacal and he had to be restrained to be kept in bed.

Twelve hours after the chill there was a herpetic eruption about the lips, and petechiae appeared upon the abdomen and chest. At this time the symptoms began to decline, and at 8 p. m. of the second day the temperature was normal; pulse 72, respiration 18; delirium had disappeared; pain in the head and about the spine had much subsided, so that the patient complained only of slight

headache. The tongue cleared, and during the following twenty-four hours there was some appetite for food. There were some hours of refreshing sleep. Forty-eight hours after initial chill, there was a return of pain, with some vomiting. Temperature was 101, pulse 120, respiration 32. Delirium, head retraction, convulsive muscular contraction appeared which rapidly developed into marked opisthotonos. This condition lasted for several hours, gradually subsiding until in about twelve hours the patient appeared in comparatively normal condition. Temperature 98.3, pulse 80, respiration 20.

On the fourth day the patient felt quite well, was rational, and complained but little of any discomfort. This condition continued until the evening of the fifth day, when he became comatose, with stertorous breathing, and clonic spasm of the muscles of most of the body. Temperature 102, pulse 112, respiration 28. There was involuntary urination and a duration of this condition for twelve hours.

On the morning of the sixth day temperature was 97.8, pulse 62, respiration 20. Patient's condition was good during the sixth day, and until evening of the seventh day, when there was a recurrence of the symptoms of the third day; with return on the morning of the eighth to an apparently normal state.

The evening of the ninth day there was another recurrence of opisthotonos and delirium, but the temperature was 97.2, pulse 48, respiration 26. The delirium and convulsions were of shorter duration, subsiding in about four hours, and it was observed that there was paralysis of both lower extremities, and the patient appeared somewhat dull, was slightly deaf, but would respond rationally when spoken to.

At 8 p. m. of the eleventh day, he went into a comatose state, with stertorous breathing. Temperature was 100.2, pulse 42, respiration 24. He remained in this condition for fifteen hours, when he again became conscious, and partially rational; there were involuntary dejections from the bowels and bladder; temperature 97, pulse 34, respiration 26. This continued until 6 p. m. on the seventeenth day, when he again became comatose—temperature 96.5, pulse 32, respiration 24—and continued in this state until death, which occurred at 7 a. m. on the eighteenth day. Urinalysis was made several times after the third day, and albumin in considerable quantity with numerous casts was found upon each examination.

A specimen of the mucopurulent nasal discharge from the nose was taken at the first visit made, and again, about forty-eight hours later. Lumbar puncture was made on the fifth day, and about half an ounce of fluid withdrawn. Cultures from all three of these specimens were made on blood-serum agar and colonies of micrococci developed which appeared in diplococcus form of two hemispheres, separated by an unstained interval, and were readily decolorized by the Gram method of staining, and were undoubtedly the diplococcus intracellularis meningitidis of Weichselbaum.

Autopsy was made six hours after death. The dependent portions of the body exhibited extensive livid areas. On opening the calvarium the dura was found congested, and thickened, and at a number of points adherent to the arachnoid. The entire pia was infiltrated with a thick purulent fluid, especially marked about the posterior regions of the cerebellum, with numerous deposits of fibrinous lymph throughout the meninges, and especially along the course of the larger vessels. There were several foci of softened semipurulent tissue in the brain substance. The membranes of the cord were in much the same condition as those of the brain.

*Presented to the Section on Practice of Medicine, at the Fifteenth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

The dura was separated from the vertebrae at several points by extravasated blood. The cord was almost imbedded in a thick fibrinopurulent exudate. The roots of the spinal nerves were bathed in pus. Numerous points of myelitic softening were found in the cord. The lungs were hyperemic and edematous. The heart was soft and flabby, containing some soft coagula. The liver was congested, and its tissue soft and friable. The kidneys were flabby and congested, and the renal tubules were filled with fat granules and fibrinous casts.

Cultures made from the cerebral and spinal fluids developed the diplococcus intracellularis meningitidis.

CASE 2.—J. M., a female aged 9 years, came home from school at 3 p. m., February 20, complaining of severe headache, some chilling and vomiting. When seen, one hour later, there was general clonic spasm, retraction of the head; pupils were extremely dilated; temperature was 106, pulse 150, respiration 42. There was intense coryza, with mucopurulent discharge, which was said to have been in existence for three days; there was delirium, which was succeeded after about six hours by a semicomatose condition from which the patient could be aroused only to complain of intense pain in head.

Temperature gradually declined until 8 a. m. February 21; the temperature was 99, pulse 90, respiration 22. The pain in the head was greatly relieved, though there was still some retraction which, on attempt at flexion, gave rise to pain in neck.

At 5 p. m. there were again clonic convulsions. Temperature was 103, pulse 130, respiration 34. There were also delirium, head retraction, and later semicoma.

Third day. Morning temperature was 99, pulse 92, respiration 24. She was rational, had slight headache, feeling fairly well. At 6 p. m. there was recurrence of convulsions, severe headache, and delirium—temperature 102, pulse 120, respiration 32—followed by slight coma and gradual decline of symptoms, until morning, when the child was found quite deaf, and displayed difficulty in swallowing.

This condition continued for fifteen days, with morning remission or intermission, and evening accession; the accession growing of milder nature each evening, until on the sixteenth day no seizure occurred, and the evening temperature was normal. On the fifth day lumbar puncture was made, and two drams of fluid withdrawn. Cultures from this and from the nasal discharge were made, and developed the diplococcus intracellularis meningitidis.

The child went through a protracted convalescence, suffering for a time complete loss of voice, distortion of vision, difficulty in swallowing, and albuminuria, but at the present writing has regained her normal condition, with the exception of partial deafness.

CEREBROSPINAL MENINGITIS.*

BY T. N. MILLER, M.D.

ROCKFORD, ILL.

Cerebrospinal meningitis is probably a microbial disease. Recent researches prove that the diplococcus intracellularis meningitidis of Weichselbaum is the active causative agent in producing the disease. Cerebrospinal meningitis has appeared at different times and in widely separated regions in an epidemic form, remaining in the same regions as an endemic disease, and manifesting itself in sporadic cases. There was such an epidemic in Northern Illinois in 1878 and 1879, and to

the sporadic cases following that scourge and coming under my own personal care this paper will be devoted.

It is not my purpose to enter exhaustively into the history of cerebrospinal meningitis, which must be familiar to you all. It will suffice for our purpose to say that preceding the beginning of the nineteenth century we have no clearly defined and sharply outlined picture of this disease. Visseux of Geneva gave, in 1805, the first clear clinical record of the disease. Then, American writers at Medfield, Mass., in 1806, took up the history. From this time we have a series of epidemics occurring in groups from 1805 till 1816; from 1837 till 1860, and then 1856 till 1864. Since that time we have had scattered epidemics of the disease, which, indeed, may be said to have become endemic in most of our large cities, so that the yearly mortality statistics of most of them show some victims of this disease. Its history shows clearly that cerebrospinal meningitis appears simultaneously in widely separated communities having no common means of communication and under entirely different hygienic surroundings. It attacks both sexes alike, and may appear in homes of luxury as well as in the abodes of poverty. It is usually said to be more severe when overcrowding and filth abound, still Scotland has never been visited by it, although "crowd-poisoning" is as great there as in any country. Its history also shows us that cerebrospinal meningitis occurs most frequently in the winter months.

In 1887 Weichselbaum described the diplococcus intracellularis meningitidis, which he found in six cases of cerebrospinal meningitis, though he did not consider it is the cause of the disease, but only as associated with the pneumococcus, the causative microbe. In 1895 Jager found the same diplococcus in twelve cases, and Huebner found it in nine. In the remarkable monograph by Councilman, Mallory and Wright of Boston on the 111 cases of an epidemic occurring there, the diplococcus was demonstrated in 31 cases of the 35 examined post-mortem, hence, as Prof. Sydney Thayer says, "There is now no doubt that it"—the diplococcus intracellularis—"is the cause of this disease."

This microbe, hidden in the cellular bodies of the polymuclear leucocytes, is demonstrated with difficulty. It is best grown on Loeffler's blood serum and is stained by Gram's method. The cocci are coffee-bean shaped and appear in pairs or tetrads. The usual point of entrance into the system is given as the nasal mucous membrane, though this is not clearly proven. In some cases its presence in the nasal cavities of well people, as well as those suffering from the disease, has been demonstrated. It is quite probable that in cases complicated with dysentery, it may gain entrance to the blood by the lesion in the bowels. In experimental research, pure cultures injected subcutaneously will not produce the disease, but when thrown into the serous cavities of the susceptible animal they will always produce it. The difficulty of cultivation and the low vitality of the microbes have rendered the disease one of the most difficult of experimental investigation and the hardest to decide as to the mode of entrance into the system as well as to the means of propagation outside the human body.

That cerebrospinal meningitis is contagious is held by but few writers at the present day, though doubtless many of you may have read in the JOURNAL of this year a series of articles by Dr. W. J. Class of the Chicago Health Department and recall his conclusions "that epidemic cerebrospinal meningitis is to be classed among contagious diseases, belonging in this respect to the same category as phthisis pulmonalis"; and, again,

*Presented to the Section on Practice of Medicine, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus Ohio, June 6-9, 1896.

"persons affected with this disease should, whenever possible, be isolated and all evacuations rendered sterile by the use of antiseptics." I think these conclusions are hardly justified by the cases cited in the article and certainly not in the history of epidemic cerebrospinal meningitis. All contagious diseases spread by contact of the well with the sick or along the usual avenues of travel. This disease does neither. J. Lewis Smith says of the epidemic in New York in 1871: "Cerebrospinal fever, previously unknown in New York, began, as stated above, in 1871 among the horses in the large stables of the city car and stage lines, disabling many and proving very fatal, while among the people the epidemic did not properly commence till January, 1873. Although a few isolated cases occurred in December, 1871, no evidence existed as far as I am aware that the disease was in any instance communicated by these animals to man. Those who had charge of the infected horses, as the veterinary surgeons and stablemen, did not contract the malady, certainly not more frequently than others who were not exposed."

Professor Osler says: "The disease is not directly contagious; it is probably not transmitted by clothing or the secretions." Wood and Fitz, in the "Practice," say: "It is not contagious; the attendants of the sick are rarely affected, and there is no evidence that the disease passes directly or indirectly from man to man. It is not known to be caused by fomites." Loomis' "Practice" says: "Cerebrospinal meningitis is in no sense a contagious disease." Professor Whitaker remarks: "The fact that the disease occurs at the same time in places so remote from each other speaks decidedly against the theory of contagion." L. Emmet Holt says: "It is not contagious in the ordinary acceptance of the term."

So we might continue to cite from other well-recognized authorities, but sufficient has already been given to show that in the opinions of the best writers cerebrospinal meningitis is not contagious. To appeal to our own personal experience, we all have treated cases without enjoining isolation and we have no cause to regret our action in this respect. I have never known a nurse or attendant to contract the disease by caring for the sick. Can we say this of any contagious disease?

It is extremely difficult to give a clear pen picture that will cover the multiform symptoms of cerebrospinal meningitis. It will help us in our task to describe it as it appears under the different forms of the fulminant or malignant, the ordinary type, and anomalous forms.

The malignant type presents the awful picture of rapid descent from apparent robust health to death in a few short hours or days at the longest. Almost like a stroke of lightning from a clear sky, its victim is hurried into eternity. There is evidence of great shock; chill or chilling sensation; acute agonizing pain in the head and back of neck; pupils usually contracted and irresponsive to light; pulse small, thready and often irregular; cutaneous circulation sluggish, and surface often mottled or spotted; delirium that is soon followed by swift oncoming coma, preceded by convulsions or convulsive movements and death soon closes the scene. The poison, as is shown by the profound alteration in the blood, the comatose condition, the convulsive movements, and the swift coming of the end, has rapidly and surely done its deadly work.

In the ordinary form the onset is more gradual. The patient often complains of not feeling well for a day or two, with chilly sensations, rarely a regular chill, with more or less pain in the head and neck and sensitive

places along the spine; there is always more or less hyperesthesia of the cutaneous surface; the pulse is almost always accelerated and the cutaneous circulation sluggish. The temperature is very irregular, seldom above 103, and has no regular daily curve, as in typhoid fever. The characteristic stiffness of the muscles of the back of the neck develop in a day or two and may go on to complete opisthotonos in the second week, at which time tonic convulsions are very frequently produced. Dysphagia may also develop to such an extent as to hinder the patient's taking medicine or sufficient nourishment. Delirium is very common in the severe cases, requiring constant watchfulness to prevent the patient from injuring himself. The ability to apparently converse rationally, and yet to have no distinct knowledge of passing events, so that when convalescence is established, the patient will take up the work engaged in on the day taken sick, is a characteristic in many cases of this disease. In those recovering, the rigidity of the muscles of the neck gradually grows less, pain is less constant, the mind becomes more rational, the rest more quiet and refreshing, the temperature approaches the natural, and thus convalescence is fully established; while in fatal cases the patient is either racked with pain by frequently recurring convulsions which exhaust the strength, or the pulse becomes more rapid and weak, until he sinks into coma, the forerunner of death. The duration of cerebrospinal meningitis is from two weeks to two months.

Of the anomalous forms I wish to speak of but a few of the many types. The abortive may begin like the ordinary attack, only with less fierceness and with all the characteristic symptoms, as chill, hyperesthesia, headache, stiffness of muscles of neck, sensitive spots along the spine, and yet all these subside in a few days and soon complete restoration to health takes place.

The intermittent type has much in common with intermittent fever, though it may develop many of the characteristic symptoms of the true disease and yet have an intermission of a week or more, with a complete return. This is the form which leads to the use of large doses of quinin for its cure.

Pathology.—In the fulminant type, where death occurs in 24 to 48 hours in the majority of cases, an intense hyperemia of brain and cord and an effusion of bloody serum in the ventricles of the brain may be the only manifestations visible to the naked eye, though the microscope will reveal the beginning of fibrinous deposit over the basilar surface of the brain and crinated red blood-corpuscles. There is also visible a profound alteration of the blood, characteristic of intense systemic poisoning, as shown by its dark color and soft clots.

In the cases where death occurs later in the disease we have the clear evidence of the profound alteration of the blood with added evidence of local inflammation, with patches of purulent matter in the ventricles over the base and in the sulci of the brain. The brain tissue is much softened, especially in the cerebellum and the posterior surface of the cerebrum. There is not usually a large amount of effusion in the ventricles or the spinal canal. The microbes found—by cultivation—are the diplococcus intracellularis meningitidis of Weichselbaum, the pneumococcus, and various pus-producing bacilli. There are no characteristic lesions found in other parts of the body. There is often hypostatic congestion of the lungs, bronchitis, pleuritis, and pericardial effusions, as well as effusion of blood beneath the skin, which gave rise to the name of "spotted fever," sometimes applied to the disease. In a word, there is evi-

dence of systemic poison and consequent congestion in other organs than the brain and spinal cord.

Diagnosis.—When cerebrospinal meningitis occurs as an epidemic with the clear-cut characteristic symptoms of chill, intense pain in head and back, stiffness of muscles in back of neck, irregular fever and pulse, and hyperesthesia of skin, there is usually little difficulty in diagnosis, taking the whole history into consideration. It has not the slow on-coming, the gradual rise and regular curve of temperature of typhoid fever, nor the intense persistent fever and the intense mottling of the whole surface peculiar to typhus. In malignant scarlet fever we may have the intense headache, vomiting, chill, and the convulsions which characterize fulminant cerebrospinal meningitis, but there the parallel ends, as in one the high temperature continues unabated and the scarlet rash may appear, while in the other the temperature varies and only spots, not a rash, are shown. In all doubtful cases that live long enough the diagnosis may be cleared up by Quinke's lumbar puncture and cultivation of the fluid obtained from the spinal canal. The presence of the diplococcus intracellularis of Weichselbaum puts at rest our diagnosis and stamps the disease as epidemic cerebrospinal meningitis.

Prognosis.—Cerebrospinal meningitis is justly regarded as a most fatal disease, both from its intense nature and the vital parts it involves in inflammation. It is usually fatal in the very young as well as those beyond 50 years of age. The death-rate varies in different epidemics from 20 to 79 per cent. The fatality of sporadic cases varies at different times. Of my own cases, nine in number, only one resulted fatally, and that was in a woman over 60 years of age. Of those who survived, not one was left with any infirmity or impairment of any organ. Several were of more than the average degree of severity and take in the range of age from the infant of one month and four days to the grandmother of over 60 years. I can hardly believe that this result was due merely to chance nor to the fact that the disease was lighter, but rather to the systematic and faithful use of remedies to avert disaster.

Treatment.—To treat this disease symptomatically, as we are sometimes advised, when the symptoms change so radically and in such a short time, seems to me the height of medical folly, and there is just as much foolishness in trying every remedy that has been advocated for it, even when sanctioned by high authority. The discovery of the microbe that causes the disease leads us to the hope that the day is not far distant when an antitoxin or serum will be found which will give us complete control of this dread disease. In the meantime we must use the remedies that have stood the test of time and experience. In the earlier stages we clearly need to lessen the congestion of the brain and spinal cord, and at the present time we know of no better remedies than ergot and calabar bean pushed to full physiologic results. In the bromids we have a less efficient agent, but more valuable in children than for adults. In this stage of a disease that is so depressing on the system and so debilitating, to say that we should avoid bleeding or even the local application of leeches seems almost axiomatic. With the strong bounding pulse, the pulsating carotids, the flushed face, the active delirium, and the stertorous breathing, the temptation to bleed may be very strong, but beware of the delusion: the reaction is sure to come—and that swiftly—when we will need all the vital forces intact to overcome the tendency to fatal collapse.

While I cannot call the opiates "the sheet anchor of hope" in this disease, yet I can see how they are of great aid in all stages of the disease—in the earlier to relieve shock, and in the latter stages to procure the rest and quiet which is so essential to overcome its depressing effects.

The early, and by that I mean within the first three days of the beginning of the disease, and continued use of the iodids I consider of paramount importance, from their well-known power to prevent supuration and effusion into the ventricles of the brain and also softening of the brain tissue. For it seems to me that the paralysis which is so often fatal is due to softened and disintegrated brain tissue rather than to effusion pressing upon the nerve centers.

To assist these remedies I have used counterirritants in the form of mustard plasters or mustard-oil liniment to the spine. In more than one case and instance I have witnessed the strong mustard liniment applied and seen the little patient cease its moaning and tossing and fall into a quiet refreshing sleep. I have never used cold applications or the ice coil, for fear of the distressing effect upon the general circulation and the stagnation of blood when applied.

That cerebrospinal meningitis demands the best care and nursing, and most judicious feeding during the whole course of the disease is clearly self-evident. But I will not weary your patience further than to say that we must secure the best ventilated room possible, free from extra noises, and a nurse who will see that the patient is properly cared for without undue disturbance, and who will watch the many changing phases of the disease and meet the many emergencies that arise, with promptness and tact.

DISCUSSION ON PAPERS OF DRs. EYSTER AND MILLER.

Dr. J. C. WILSON called attention briefly to three points. The first is the importance of Kernig's sign in diagnosis. This sign consists in a condition of spastic contraction of the flexor muscles of the thigh which prevents the extension of the leg when the thigh is flexed at right angles to the long axis of the trunk. This sign has been found to be present in almost all cases of cerebrospinal fever, and has been especially studied in this country by Herrick of Chicago. It is of diagnostic importance at a time like this when cerebrospinal fever, and enteric fever are prevalent.

The second point relates to the contagiousness of cerebrospinal fever. While the direct transmissibility of the disease has not yet been established, there are many points in its clinical history and in its epidemic prevalence that indicate some form of transmissibility, and until the matter is finally settled it is better to assume the possibility of direct transmission and carry into effect such measures as isolation and the disinfection of localities.

The third point relates to the treatment. Recent observations are in entire harmony with the experience of the older practitioners as regards the use of opium in full doses in the management of this disease.

Dr. DIBAMA of Syracuse.—A few years ago at Syracuse there was an epidemic of cerebrospinal meningitis. The attacks were like those mentioned here, very severe. I saw patients perfectly well, and the next day they were dead. The treatment given consisted in large doses of bromids, without any effect whatever. Word came to us that Dr. Wilson of Pennsylvania had decided that this was cerebrospinal fever, and that the successful treatment was by the use of opium alone. We resorted to the opium treatment immediately. The cases so treated got well, while the cases under other treatment died.

Dr. J. H. MUSSER of Philadelphia.—I wish to speak of the value of the lumbar puncture as a diagnostic procedure and as a therapeutic measure. It has been my fortune to see a number of cases of this disease recently, and I cannot reinforce too strongly what has been said upon the necessity of lumbar puncture in making a diagnosis. This should be resorted to in order to confirm those who are suspicious of the nature of the case. The procedure is not dangerous. I have performed it in a number of cases, and never have I seen any ill results following. However, as a therapeutic measure, there is no doubt that in some cases there is great relief. It is a

relief to the headache and to the irritative symptoms that occur in the early period of this disease. Often when we have the stupor coming on relief follows the withdrawal of the fluid.

I wish to call attention to the operation of laminectomy that was first performed by Dr. Rollinson of London, which was successful; my cases were not so relieved. I am satisfied that laminectomy is a rational procedure. Where perfect asepsis can be obtained, and where there is great pressure, then laminectomy is indicated. In a case treated by Dr. Martin he removed the lamina of the lumbar portion of the cord. In many cases where the pressure is small it will be impossible to get any fluid unless you aspirate. In other cases where there is much lymph you plunge your needle into a mass of the consistency of butter, and so you get no fluid. Three such cases occurred under my care. I do not wish to take away the importance of opium; outside of the mechanical procedure opium is the only drug in the treatment of cerebrospinal meningitis.

DR. T. B. FUTCHER of Baltimore.—I was in charge of an epidemic of cerebrospinal meningitis during the past year in Maryland. In 1892 there was an epidemic in the northern part of the state, but since then there has been no epidemic in the state until during the last twelve or thirteen months. During the past year 17 cases were admitted to Dr. Osler's wards in the Johns Hopkins Hospital. Of these 17 cases, 8, or 47 per cent., terminated fatally. I wish to confirm Dr. Musser's statement regarding lumbar puncture, from a therapeutic and diagnostic standpoint. If all the cases were obtained early enough one would be enabled to make a positive diagnosis in a large percentage of these cases. Well-known organisms die out in the spinal fluid readily. At the end of two weeks the examination of the cover-slides may prove negative, but if lumbar puncture be done before this, in a great percentage of cases the diplococcus will be found. In many cases this procedure is done from a therapeutic standpoint with temporary results only. I regret to say that no cases recovered in which lumbar puncture was done as a therapeutic remedy. In one case it was performed, and twelve hours after the puncture there was a marked relief in the symptoms, the stupor and the rigidity diminished, and in several instances there was a rise of three to four degrees in the temperature. I have not the slightest doubt that the patients' lives were markedly prolonged in two or three cases.

In regard to Kernig's sign, it was present in all cases in which it was looked for. In regard to the symptomatology of the disease, in a small percentage of the cases one of the earliest symptoms was development of a severe arthritis. In one case the arthritic symptoms appeared on the third day of the disease. There was a marked swelling of the joints, pain, and a purpuric appearance of the joints. In one case, on the second day after admission there was a distinct fluctuation in the knee-joint. This was aspirated, cultures taken, and germs were found in the cultures. This is the first case in which the organism has been found in the joint in arthritis associated with cerebrospinal meningitis, and the first case in which it was found in the general circulation of the blood. This case in which the organism was found in the joint cavity throws some light upon the character of the arthritis in infectious diseases and lesions of the spinal cord. It is distinctly due to organisms in the particular case, and here it is fair to assume that the arthritis may be considered as secondary to the spinal lesions of a trophic nature.

DR. SCOTT of Iowa.—I wish to speak of the contagiousness of the disorder. I also believe that it is often impossible in many cases to trace every infectious disease to some previous case. I believe that there must be some source at large outside of the body. For that reason I believe that the origin of infectious diseases is decomposing animal and vegetable matter. I believe that if cerebrospinal meningitis occurred in the throat and as the germs occur there it would be contagious. I believe that if it occurred in the alimentary tract it would be contagious. If it did not occur in closed sacs it would be scattered and eliminated from the body, and the contagion scattered by the atmosphere or some mechanical means.

DR. E. WATSON, Ft. Madison, Iowa.—In a disease, the pathology of which is obscure, the therapeutic indications must of necessity be of an empiric character. And as far as its contagious or noncontagious character is concerned, whether we find Weiselsbaum's bacillus or the pneumococcus intracellulularis present or not, or whether we have the disease on account of or independent of these germs does not matter so much in our management of its contagious or noncontagious character. Better consider this dangerous and terribly mortal disease dangerous to all concerned and isolate your patient if for no other reason than that of rest. In a severe and unusually prolonged case of mine, following la grippe, I kept the patient isolated, and observed what Dr. Wilson of Pennsylvania tried to emphatically bring before you, namely, to give this contagious

character the benefit of a doubt. I gave her gelsemium, opium, belladonna, bromids, chloral and ergot, as well as several other things that the symptoms called for; made hot applications for prolonged periods, which relieved her of pain, and when sufficiently recovered sent her to Albuquerque, N. M., whence she returned splendidly recovered.

Some gentlemen emphasize the use of opium alone, but it does not matter which of the remedies you use, or even the surgical procedures mentioned by Dr. Musser—spinal puncture and laparotomy—they are all, every one, sedative measures. I think that where we fear organized processes we may with benefit give our patients iodids in the late stage to carry off morbid accumulations through the absorbents. I doubt if opium, so emphatically insisted on by some of my confrères, can be used at all in the younger children.

DR. BRADWELL of St. Louis.—During the past winter there were 34 cases of epidemic cerebrospinal meningitis in the wards of St. Luke's Hospital, where an opportunity for studying the disease was had, especially from the bacteriologic and pathologic standpoint. In 33 cases was the diplococcus demonstrated. In the other case the clinical signs were the same as the rest, and it was practically a sporadic case. The previous reports of the disease show the diplococcus lanceolatus to be the specific microorganism. It is mentioned that Gram's method of stain is the differential test between the diplococcus lanceolatus and the diplococcus intracellulularis meningitidis; in experience it is a poor means of diagnosis. In one decolorize, in the other not. In the coverslip preparations some color deeply and others very feebly.

I also wish to reiterate the value of the lumbar puncture as a means of diagnosis. It is interesting to find this microorganism. In one particular class where there occurred a bad exudation great improvement followed this procedure. As for the clinical aspects of the case, the sign of Kernig was invariably present. It was present in 34 cases. One case was of especial interest, as it was one of intrauterine cerebrospinal meningitis. The case occurred in a woman who was in the hospital, and was at the seventh month of pregnancy. She was sick two days; the disease was of the fulminant order. The fetus was dead. The woman lived one day. The autopsy showed a meningitis of both mother and child, which was confirmed by bacteriologic methods. The diplococcus was found in both mother and child.

DR. RABOLD of St. Louis.—I am interested in the last case reported, which is the only one on record of the microorganism passing from the mother to the child. In the midst of the St. Louis epidemic there was one death a week from it. Statistics show that during 1896 there were 18 cases and 17 deaths; during 1897 13 cases, with 10 deaths; this year there have been 141 cases, with 81 deaths. At the time of an epidemic in the city we sent out two physicians who asked a series of questions from the physicians, and there were 43 answers received. Among the questions asked was that of Kernig. Many of them did not know what Kernig's sign was. We described it thus: The patient is laid over on the bed; then the leg is extend and relaxed. If the patient then be raised to a sitting posture the legs are drawn up on the abdomen and the legs are crossed over each other. It is a remarkable sign. In the histories received it appeared in 95 per cent. of the cases, and appeared early, always within forty-eight hours.

Regarding the contagiousness of it, there were only two cases that gave evidences that the microorganism was conveyed from one patient to another. One was a woman who contracted the disease and left her husband and went home. The physician begged her husband not to go near her, but he disobeyed; the result was that he contracted the disease and died within five days. In the other instance there were three children in one house, and one after the other contracted the disease.

DR. J. M. ANDERS of Philadelphia.—During the past winter I was called to see a case of this disease. The patient was in a house that might be described as a small tenement, with about six families in it, and the children numbered about thirty. As I entered I found the door of the bedroom wide open and the children in the hall. No precautions had been taken, and the children had free access to the sick-room. The patient had reached the sixth week of illness. No other case of this nature happened in this home. In leaving Philadelphia I was told that none had developed, which shows it to be a noncontagious disease. I concur fully with the views expressed regarding the diplococcus intracellulularis; that it can be shown to have the specific requirements of the disease and fulfill the requirements of Koch's law.

I was also going to mention a case illustrating the value of the lumbar puncture as a diagnostic measure. In another case where the symptoms were obscure the patient reached the fourth day of illness, and the only symptom that pointed to this disease was the severe headache. As there were other

cases in the vicinity, I suggested lumbar puncture, which was at once resorted to, and there was found the diplococcus intracellularis, and diagnosis was so made on that fact alone; on the day following rigidity of the neck muscles appeared. In obscure cases lumbar puncture should be resorted to to make a diagnosis.

In regard to the treatment, I was struck with the fact that many physicians regard ergot as the remedy of choice. I have seen six cases in consultation, and in four of them was ergot resorted to, to the total exclusion of opium.

DR. T. N. MILLER, closing the discussion.—There seems to be a wide diversity of opinion regarding the treatment of this disease. The line of treatment has proved successful in my experience, and also in the experience of many other physicians in that section of the country from which I come. Ergot is valuable. Opium should be used at all stages of the disease. I have never seen the necessity of using the heroic doses advocated by physicians.

APPENDICITIS.*

AS A CAUSE OF INFLAMMATORY DISEASE OF THE RIGHT OVARY AND TUBE,

BY A. J. OCHSNER, M.D.

CHICAGO.

During the past five years surgeons have frequently observed the fact that appendicitis may occur in patients suffering from an inflammatory condition of the ovaries and tubes. In reviewing the appendicitis literature, I found a number of articles treating directly of this feature, while it is referred to occasionally in articles discussing the etiology and diagnosis of salpingitis.

Most of these observers speak of the difficulty encountered in making a differential diagnosis. George R. Fowler¹ points out the fact that the proximity of the appendix to the adnexa may confuse both objective and subjective symptoms, making differential diagnosis especially difficult.

Sonnenburg² points out the frequency with which the two conditions are confounded, as well as the fact that they may occur together, but does not place appendicitis in a casual relation to inflammation of the adnexa with sufficient emphasis. Dr. Krueger³, Sonnenburg's assistant, describes twenty-one cases in which his chief found the appendix and the ovary and tube simultaneously involved, giving an abundance of valuable experience especially in the direction of diagnosis. Deaver⁴ says that if the appendix is very long and overhangs the brim of the pelvis, it may lead to disease of the pelvic contents. He cites a case in which "the right ovary was the seat of an abscess which had evidently been infected by the perforated appendix"⁵. Delagénière⁶ considers the disease of the appendix secondary to the inflammation of the uterine appendages, in case they occur in the same patient. M. Borchardt⁷ shows that there is a relation between the two conditions. C. Bernaribeig⁸ reports an interesting case in which an appendicitis due to a foreign body in the organ coexisted with double salpingitis. Charles Polle⁹ has written fully on this condition. H. Barnsby¹⁰ shows that appendicitis may be caused by inflammation of the adnexa. J. M. Brooks¹¹ as early as 1895, in the discussion of a paper by Robert Morris, stated that he had found both conditions in the same patient. A year ago an interesting paper by T. J. Rhoads¹² brought out the same fact. Richelot¹³ reports six cases in which the differential diagnosis was impossible. Dr. Coe of New York¹⁴ states that appendicitis occurs as a complication of disease of the adnexa, and that the latter condition is sometimes secondary to the former. Howard Crutcher¹⁵ points out the likelihood that the appendix has much to do with inflammation of the adnexa. Lennander¹⁶ says that whenever appendicitis re-

sults in peritonitis in the iliac fossa and in the pelvis, it is plain that disease of the adnexa may result. Vautrin¹⁷ points out the similarity between appendicitis and pyosalpinx and their intercurent effect, but does not state clearly the effect of one upon the other.

It is impossible to review everything that has been written upon the subject of appendicitis, because the past few years have averaged over three hundred articles each upon this subject, but, so far as my investigation of the literature has extended, no author seems to lay sufficient stress upon this source of inflammation of the right ovary and tube.

A number of years ago, during an abdominal section which I performed for the removal of an inflamed ovary, my attention was drawn to the fact that inflammatory disease, especially of the right ovary and tube, is caused by affection originating in an appendicitis, and as my experience has increased, I have become more and more convinced of the fact that this condition occurs very frequently, and it is the object of this paper to point out this fact and its importance, and to substantiate these ideas by a number of histories.

At first it seemed difficult to explain how the right ovary and tube could become implicated except in case of perforation or gangrene of the appendix, or the formation of an appendiceal abscess but since the description of the appendiceal-ovarian ligament by Clado it can readily be understood how an affection can progress from the appendix to the right ovary, because the lymphatic and vascular supply of the two organs is in a measure common. Nothing can be more simple than the infection of the right Fallopian tube in case of the formation of an appendiceal abscess, because the fimbriated extremity is most perfectly constructed for this end. There are other facts which indicate that inflammation of the right ovary and tube is frequently due to appendicitis.

Ribbert¹⁸ in examining the appendix in 400 cases, found fecal concretions in 38, and they were found as often in women as in men, which would indicate that appendicitis is as common in one sex as in the other, notwithstanding the fact that operators in general seem to agree that it is much more frequent in men. This, as well as my own observations, has convinced me that the difference is due to the fact that in women the right ovary and tube is so frequently infected secondarily that these cases are supposed to suffer from the latter condition alone, and that in the treatment of these cases the real cause of the inflammation is entirely overlooked.

It is a generally recognized fact that at least 15 per cent. of all cases of appendicitis occur in children under 15 years of age, and that in these the number of girls equals the number of boys. This is also confirmed by my observations. Later in life, if there is a recurrence it is at once diagnosed in the male as an appendicitis, while in the female a certain number of those cases are diagnosed as ovaritis or salpingitis.

In many of these patients in whom there is but a catarrhal appendicitis, possibly complicated with the presence in the appendix of a fecal concretion, the patient is not disturbed except during the period of menstruation, when the temporary congestion is sufficient to increase the irritation in the appendix, as well as in the Fallopian tube, giving rise to a pain of greater or less severity, which is usually looked upon as dysmenorrhea due to the presence of salpingitis.

A number of my patients showed this symptom when the operation demonstrated the presence of catarrhal appendicitis, with or without a foreign body in the lumen of the appendix, or there were severe adhesions

*Presented to the Section on Surgery and Anatomy, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

showing that at some previous time a portion of the appendix had become gangrenous, or there was partial or complete obliteration of the lumen of the appendix—appendicitis obliterans of Senn. Whenever the pain in dysmenorrhea is entirely or mostly on the right side, especially if it is quite high, it is well to suspect the presence of an appendicitis in connection with the disturbance of the ovary and tube.

In giving the histories of my cases, I will give the one which drew my attention to this fact in full, and then all the cases which I treated the past year—1898—consecutively, and in abstracts only, as a review of all my cases of this class would make the paper unnecessarily long and correspondingly uninteresting.

CASE 1.—Miss Lillie H., aged 19 years, the daughter of healthy parents, had enjoyed good health until four years previous to the operation, when she was attacked with a very sudden, severe pain in the right hypochondriac region, accompanied with nausea and vomiting. At first a diagnosis of intestinal obstruction was made, but later this was changed to circumscribed perityphlitic peritonitis.

The treatment consisted of hot fomentations and hypodermic injections of morphia. She was confined to her bed for three weeks. During the next year she had a similar attack which was now supposed to be due to inflammation of the ovary and tube. Later in the same year she had another attack, and was treated by means of tonics, rest in bed and electricity. One year previous to the operation she had another attack, which again yielded to treatment by means of sedatives and hot fomentations. At this time the attending physician, a man of excellent ability, found a prolapsed uterus, an ante-flexed cervix, and an extremely tender prolapsed right ovary. She was now treated with counterirritation over the abdomen, local treatment of the cervix and the vaginal vault with tincture of iodine and warm douches. Cotton tampons were tried, but the right ovary was so tender that the patient could not endure the pain.

Her menstruation had always been painful and scanty. She had constantly suffered from constipation. Her appetite had been insufficient, and she had not slept well. During all this time the hygienic surroundings of the patient were excellent. Still she had constantly lost in strength. For several months she had been a confirmed neurasthenic, confined to her bed the greater part of the time.

Physical examination revealed a fairly well nourished girl of medium size, with masculine features, dark hair and eyes, skin rough, upper lip and chin covered with hair, and facial expression indicative of severe suffering. Lungs, kidneys and heart were normal; there was a slight anemic murmur. The uterus was prolapsed, the right ovary prolapsed and so extremely tender that it was impossible to determine the extent of adhesions. A diagnosis of chronic ovaritis was made, and an abdominal section recommended.

On Oct. 18, 1888, a median incision was made, extending from the symphysis pubis to within an inch of the umbilicus. This disclosed the following condition: The omentum was adherent about the cecum, the lower end of the ilium and the appendix and also to the parietal peritoneum, indicating that what I supposed to be a perityphlitic abscess had existed during the first attack mentioned in the history, and that the other conditions were secondary. The right ovary and tube were adherent to the uterus and to a mass consisting of the cecum, appendix and omentum, being held by strong cicatricial adhesions, which accounted for the extreme tenderness of the right ovary. I removed the right ovary

and tube, loosened the adhesions which bound down the uterus, but did not dare to disturb the adhesions about the cecum. The wound was closed without drainage.

The patient made a normal recovery. Her neurotic condition vanished, her skin became clear, and she developed into a very beautiful young woman. For two years she had not been able to attend school at all, and for the two years previously only a small portion of the time. Two months after the operation she entered school again and attended regularly for the remainder of this and the next year, when she married. She has since borne five healthy children, and has constantly been in excellent health.

I saw her again in September, 1898, ten years after her operation, and fourteen years after her original attack of appendicitis, and found her in a most excellent condition.

In this case it is plain that an abscess had formed about the appendix, making the latter organ harmless, but that a portion of the infectious material had been carried down to the right ovary and tube, causing an infection of these organs, which caused the severe suffering. Being a virgin, the infection must have come from the appendix.

ABSTRACTS OF HISTORIES OF SIMILAR CASES OPERATED AT AUGUSTANA HOSPITAL DURING 1898.

CASE 1.—No. 4677, Miss E. H., aged 16 years, entered the hospital March 1, 1898. The patient has always enjoyed good health, having grown up in the country. She menstruated at 13 years of age, without pain until one year ago, when she suffered from a typical attack of appendicitis. Since then she has suffered severely during each menstrual period. She has had four typical attacks of appendicitis during the past year: the last one began one month ago, and she is just now recovering. Her present condition is that of a very well nourished girl, evidently unusually strong and vigorous when in good health; she is somewhat anemic, tongue clear, appetite good previous to recent attack, now absent; heart, lungs and kidneys normal. A slight swelling is perceptible over the region of the appendix, also slight dulness on percussion, vaginal examination cannot be made, as patient is a virgin. She has been nauseated, but has abstained from food almost completely during attack.

Diagnosis.—Acute appendicitis; fourth attack.

Laparotomy showed the appendix perforated, imbedded in the midst of adhesions, being surrounded with about half an ounce of pus containing a fecal concretion. The right ovary and fimbriated extremity of the tube were strongly adherent to the surrounding tissues, and helped to form the abscess wall.

CASE 2.—No. 4679, Miss H. M. B., aged 20 years, was admitted March 1, 1898. Aside from the ordinary children's diseases patient has had no severe sickness. Menstruation began at 15 years of age, being regular and only very slightly uncomfortable, and not painful until two years ago, when she began to feel a sharp pain in the right inguinal region during the greater portion of the period. She was able to control this by taking acetanilid, viburnum and whisky. During the last three periods the pain has been excruciating, necessitating the use of morphia hypodermically. The pain is always located precisely in the region of McBurney's point. During the interval this portion of the abdomen is somewhat tender under pressure. The patient has lost several pounds in weight during the past year.

Her present condition is that of a slightly built girl; her facial expression indicates that she has suffered severely of late; tongue coated; appetite bad; bowels regular; heart, lungs and kidneys normal; tenderness over region of appendix.

Diagnosis.—Acute catarrhal appendicitis.

Laparotomy showed the appendix to be severely congested, club-shaped and containing fecal concretion five-eighths of an inch in length and a quarter of an inch in diameter—too large to escape into the cecum on account of the constricted condition of the proximal end of the lumen. The right ovary is also severely congested and more than twice the size of the left one.

CASE 3.—No. 4716. This patient, a married woman 20 years of age, came under my care March 14, 1898, giving the following history:

She was always healthy until two years ago, when she experienced a very severe instrumental labor, lasting sixty hours, during which she suffered a severe laceration of the cervix and perineum. She has not been well since; her menstruation

has been irregular, the discharge being profuse and somewhat prolonged. During the past year she has had several attacks of severe pain in the right inguinal region, usually lasting from four to five days, and recurring every four to ten weeks. Two weeks ago her present attack commenced with severe pain in the region of the appendix. She has suffered from nausea but has not vomited. The lower part of the abdomen has been exquisitely tender. She has had no chills. The temperature has not been observed.

Her present condition is that of a fairly well nourished woman, tongue coated, appetite poor, constipated; heart, lungs and kidneys normal. There is considerable yellowish vaginal discharge; the lower portion of the abdomen is tender and tense; perineum and cervix are lacerated; there is a fluctuating very tender mass to right of uterus.

Diagnosis.—Right-sided pyosalpinx, involving vermiform appendix.

A laparotomy demonstrated the presence of an abscess involving the right ovary, tube and appendix, probably, though not positively, of tubal origin.

CASE 4.—No. 4766, Mrs. E. H., 26 years of age, married about two years, was admitted March 25, 1898. She gave the following history:

She had scarlet fever, diphtheria, pleurisy and typhoid fever as a child. Menstruation began at 18; always regular and painless until three years ago. She has one living child, 5 months old; had rather hard instrumental labor; and has suffered considerable pain in lower portion of abdomen ever since. She has had a few chills, some rise of temperature, and had a fetid vaginal discharge for several weeks after child was born. She was compelled to cease nursing the child when it was two months old, on account of weakness; has menstruated normally twice since, six and two weeks ago. Three months ago, while sitting perfectly still, she had a severe sudden pain in the region of the appendix, lasting two hours, then pain became more profuse and lasted for two days. She had a chill, followed by a fever; vomited once; was constipated. Six weeks and two weeks ago she had slight but similar attacks. One week ago she had a very severe attack; vomited several times; had chills, fever, headache; pain extended in the direction of the umbilicus.

Her present condition is that of a fairly well nourished woman; tongue coated; soft and flabby; appetite fair; bowels constipated; pulse 110; strong, compressible; heart, lungs and kidneys normal; tenderness over region of appendix and right ovary.

Diagnosis.—Acute attack of recurrent catarrhal appendicitis, implicating right ovary and tube.

This was confirmed by the laparotomy, the primary trouble being in the appendix.

CASE 5.—No. 4794, Mrs. J. B. H., aged 26 years, married one year, was admitted April 5, 1898. As a child she was well. She began menstruation at 14 years of age; was never regular, and usually painful; the period varying from four weeks to three months. She has had two typical attacks of appendicitis; one four months ago, lasting two weeks, the other six weeks ago, lasting three weeks, and has been out of bed a little over a week since the last attack.

Her present condition is that of a well nourished but slightly anemic woman, showing the effects of her recent illness. There is considerable tenderness in the region of the appendix. Both ovaries are tender upon vaginal examination.

Diagnosis.—Recurrent appendicitis complicated with ovaritis.

A laparotomy demonstrated a universally adherent appendix, the distal three-quarters of an inch being almost completely destroyed, probably by an attack not recorded in the history, as the patient's parent could not be consulted, and she was unable to give a history of her childhood, although she thought that her health had been generally good. The lumen of the appendix was almost completely obliterated near its attachment to the cecum, preventing the escape of a quantity of pus and mucus and fecal concretions in its lumen. Both ovaries showed old adhesions, probably resulting from infection at time of destruction of the distal end of the appendix. Both ovaries, but especially the right one, and the right tube were acutely congested.

CASE 6.—No. 4823, Mrs. M. D., aged 38 years, married seventeen years, the mother of five children, was admitted April 8, 1898. She does not remember her childhood's diseases. She began to menstruate at 15; had an attack similar to the present one at the age of 26; a second one at 35, and several slighter attacks which she cannot locate accurately as to time. Two weeks ago she suddenly felt a severe pain in the right inguinal region, which was especially severe upon trying to extend the thigh. She has felt slightly chilly several times, but has had

no real chill, and has been nauseated but has not vomited. Her complexion is slightly yellowish, but no distinct icterus.

Her present condition is that of a fairly nourished woman, with heart, lungs and kidneys normal. She has pain and tenderness in the region of the appendix, and the right ovary is tender.

Diagnosis.—Recurrent appendicitis, implicating right ovary and tube.

The laparotomy demonstrated an appendix bent upon itself at an acute angle about its middle on account of strong adhesions, due to an inflammation long past. The enlarged distal end contained a quantity of septic material. A marked congestion and recent adhesions demonstrated the presence of a recent inflammation. The right ovary contained a cyst as large as a hen's egg. The right tube was severely congested, showing a recent irritation; it was very tortuous and the fimbriated extremities were agglutinated to a considerable extent. The gall-bladder contained two very sharp gall-stones, as large as a bean.

CASE 7.—No. 4950, Miss E. B., entered hospital May 10, 1898.

She was very healthy until about one year ago when she acquired a right femoral hernia, which was relieved by an operation seven months ago. This, however, had no effect upon the pain in the right inguinal region, from which she still suffers. The patient is a virgin and consequently the examination is made entirely by external manipulation. There is severe tenderness upon pressure in the region of the appendix and the right ovary; other organs are normal. Menstruation is painful.

Diagnosis.—Chronic appendicitis.

Laparotomy shows appendix 10 inches in length containing a number of fecal concretions, the largest one the size of a pea; proximal end constricted but not obliterated. The distal end of the appendix was strongly adherent to the ovary and tube, the fimbriated extremity of the latter being also obliterated.

CASE 8.—No. 4989, Miss J. F., a saleslady, aged 33 years, was admitted to hospital May 28, 1898.

She has always been well until two months ago; began to menstruate at 17 years of age, suffering very slight pain at times. Eight weeks ago she began to suffer from severe pain distributed over the entire abdomen; this became more and more circumscribed during the first three weeks, when it became permanently located in the right inguinal region. She suffered from nausea and vomiting, but had no chills. During the first week the pain was severe; during the second week the patient was up a little; during the third week she menstruated and immediately after had a relapse. From this time on she had chills repeatedly. A week ago she menstruated and suffered more pain than usually. The pain and tenderness in the right inguinal region have persisted. Her present condition is that of a slightly emaciated woman; complexion not clear; tongue coated, appetite fair, bowels regular, pulse 100, fairly strong, has temperature of 100 in the afternoon. Lungs and kidneys are normal; heart sound over mitral valve is not perfectly clear, otherwise heart is normal. A large, rather firm, mass is found in the lower portion of the abdomen, on the right side, extending to the median line and nearly up to the umbilicus. The mass can be felt through the vagina.

Diagnosis.—Pelvic abscess probably of tubal origin.

The laparotomy demonstrated the presence of a universally adherent ovarian cyst, to the upper portion of which was attached a long inflamed perforated appendix. The cyst had evidently caused neither pain nor inconvenience until it became infected from the appendix.

CASE 9.—No. 5137, Mrs. Wm. D., 32 years of age, married at the age of 29, was admitted July 9, 1898.

As a child she was delicate. She had pneumonia several times; menstruated at 11; suffered from an attack of peritonitis as a child. From 23 to 28 years she suffered from dyspepsia, since then from constipation. At the ages of 24 and 25 she suffered from cholera morbus during the summer for a week at a time, and about three years ago from intestinal obstruction. She was confined to bed for two months, then she slowly improved, until one year ago, when she seemed quite well. Shortly after this she suffered from pain in the region of the appendix and from nausea and vomiting. Nine months ago she had a similar attack, confining her to bed for six weeks. Since then she has improved slowly, having several slight attacks of a similar character but less severe, and lasting only a few days at a time.

Her present condition shows her to be about twenty pounds below average weight; her tongue is coated; her appetite fair; starches and carbohydrates cause eructations. She suffers from nausea occasionally; is constipated; lungs, heart and kidneys are normal. There is tenderness over the appendix and right ovary, and a swelling the size of a small hen's egg

is perceptible upon digital examination, in region of right ovary and tube.

Diagnosis.—Recurrent appendicitis with secondary infection of right ovary and tube.

Laparotomy showed the proximal end of the appendix obliterated, the latter being the size of a thumb, thoroughly distended with mucus. The Fallopian tube was in precisely the same condition, being about twice the size of the appendix, perfectly closed at both ends and filled with the same material. The appendix, ovary and tube were surrounded by a mass of adhesions.

Case 10.—No. 5145, Mrs. F. P., 25 years of age, was admitted to hospital July 11, 1898.

The patient enjoyed good health until shortly after her marriage, three years ago, when she began to suffer from severe pain in the region of both ovaries and tubes. Two and a half years ago she had a severe attack of peritonitis, resulting in a large pelvic abscess, from which over a quart of extremely fetid pus was evacuated by a vaginal incision. Drainage was established, and the patient became apparently well until ten months ago, when the abscess refilled and was again evacuated in the same manner, again apparently resulting in recovery.

Her present condition shows her to be badly nourished; tongue thickly coated; appetite poor; constipated; pulse normal; menstruation regular but painful and too profuse; heart and lungs normal; urine contains blood, pus and albumin, is strongly acid, is loaded with urates, and has a specific gravity of 1030. Pain and tenderness exist in the right inguinal region. Bimanual examination shows presence of an inflammatory mass in the right inguinal region.

Diagnosis.—Pyosalpinx probably implicating appendix.

Laparotomy demonstrated the right tube to be distended to the size of three fingers and closed at both ends; the appendix constricted but not completely obstructed at proximal end, and contains large fecal stone also mucus and detritus. The appendix, ovary and tube are adherent to each other as well as to omentum and cecum.

Case 11.—No. 5235, Mrs. M. L., aged 31 years, entered the hospital August 8, 1898.

The patient had the usual children's diseases, but does not remember having been severely ill. She had suffered from indigestion and constipation for a long time—cannot tell how long. For several years she has had a heavy feeling in the region of the appendix, which became quite painful at times. Six months ago, immediately after her confinement, she suffered from acute pain in the right inguinal region. At this time she had a slight chill followed by a little fever. This became more diffuse, but later again circumscribed. There is now a constant dragging pain in the right inguinal region. The right thigh cannot be fully extended without pain. This condition has not changed during the past month.

Her present condition is that of a poorly nourished woman, anemic, with tongue coated, appetite insufficient, bowels constipated, pulse weak. There is tenderness upon pressure in the right inguinal region. Bimanual examination determines a small mass in the region of the right Fallopian tube, but extending too high to be confined to that organ.

Diagnosis.—Doubtful, probably recurrent catarrhal appendicitis with secondary infection of tube and ovary.

Laparotomy disclosed a small mass in the right inguinal region bound together by strong adhesions, containing a club-shaped appendix which had at one time been perforated, an ovary covered with connective tissue and containing several small cysts, the largest the size of a hen's egg, and the right tube $\frac{3}{4}$ of an inch in diameter closed at both ends and containing a clear fluid.

Case 12.—No. 5453, Miss E. W., 21 years of age, was admitted October 4, 1898.

She had the usual diseases of childhood, but has otherwise been well. Menstruation began at 16, being regular but very painful, especially on the right side. About a year ago patient experienced pain and tenderness in the right inguinal region, which has persisted ever since. Four months ago a sudden exacerbation compelled her to remain in bed for three weeks. At this time she suffered from severe pain, chills and fever. Nine weeks ago she suddenly experienced the same symptoms, together with vomiting. For three weeks she has been better.

Her present condition shows her to be well nourished; tongue clean; appetite good; bowels regular; heart, lungs and kidneys normal; moderate bilateral enlargement of thyroid gland; abdominal walls thick; pain and tenderness over McBurney's point; no abnormal dullness. Vaginal examination is negative except for tenderness in region of right ovary and tube; no accumulation; no perceptible enlargement.

Diagnosis.—Recurrent appendicitis, possibly involving right ovary and tube.

Laparotomy demonstrated the following conditions: The dis-

tal half of the appendix was completely destroyed by an inflammation, evidently many years past, and not determined in the history; the proximal half the size of a thumb, in an inflamed condition, the walls being greatly thickened. An adhesion extended from the end of the obliterated appendix in the direction of the right ovary, which was covered with cicatricial tissue. The right Fallopian tube was very tortuous and severely congested, both ovary and tube having evidently suffered as a result of secondary infection from the inflamed appendix.

Case 13.—No. 5458, Miss D. F., aged 28 years, entered the hospital October 5, 1898.

The patient was healthy until 13 years of age, when she suffered from what was supposed to be typhoid fever. She is said to have had a very sudden attack of the fever, with severe pain over the entire abdomen, later confined to the right inguinal region. She vomited, had intestinal obstruction and in fact all the symptoms of a gangrenous appendicitis wrongly diagnosed as typhoid fever. Since this time the patient has never been well, has constantly suffered from indigestion, constipation, severe dysmenorrhoea and general abdominal pains. She is now a confirmed invalid.

Her present condition shows her to be badly nourished; her facial expression is that of a patient who has suffered severely for years; her heart is normal but rather weak, respiration is shallow, kidneys normal; pain and tenderness over entire abdomen but especially over appendix and right ovary.

Diagnosis.—Adhesions following extensive peritonitis due to appendicitis.

Laparotomy demonstrated only the proximal portion of the appendix as present, held down by strong, old adhesions, the distal portion being recognizable as a band of connective tissue. The right tube is club-shaped and adherent to the ovary and remnant of the appendix by means of strong, old adhesions.

Case 14.—No. 5534, Miss R. P., aged 24 years, was admitted Oct. 30, 1898.

She was always unusually vigorous and well, and able to work until six months ago, when she suddenly experienced an excruciating pain in the region of the appendix, followed by severe tenderness in the entire abdomen, which later became confined to the right inguinal region. She was nauseated, and the pain was so severe that morphia had to be used hypodermically to secure relief. Since this time each menstrual period has been very painful, and she has suffered from two acute attacks since the first one. The last attack, which occurred a week ago, was especially severe.

Her present condition is that of a fairly nourished young woman, normal in every respect except that she suffers from pain in the right inguinal region, which is increased upon pressure. The abdominal walls are tense, and the right hip cannot be fully extended without giving rise to pain.

Diagnosis.—Recurrent appendicitis, probably involving the right ovary and tube, on account of the increased pain present during menstruation.

Laparotomy demonstrated the appendix to be constricted near its middle and bound down at this point by a strong adhesion, which evidently existed for a considerable time. The distal end contained mucus and detritus and was considerably distended. The right ovary and tube were severely congested, and the right tube quite tortuous.

Case 15.—No. 5535, Miss J. A., 24 years of age, was admitted to the hospital Oct. 30, 1898.

She had children's diseases, but was otherwise strong and healthy, having spent her youth on a farm. Menstruation began at 15, being regular and normal. Three years ago she first experienced dull pain in the right inguinal region; about the same time she began to suffer frequently from nausea. From this time on she has felt some pain in this region during each menstrual period. This has increased very greatly during the past year, so that she scarcely recovers now from the effects of one period before the next one begins. Her former vigorous appearance has disappeared, and she has now the look of an invalid.

Her present condition is that of a fairly well nourished, strongly built young woman; tongue coated; appetite not satisfactory; bowels constipated, heart, lungs and kidneys normal; complaints of pain in right inguinal region, which is considerably increased upon pressure. She has received local treatment of uterus. The right ovary is tender, but not perceptibly enlarged.

Diagnosis.—Chronic catarrhal appendicitis.

Laparotomy disclosed that the appendix contained several concretions, varying in size from a grape seed to an orange seed. The mucous membrane showed a catarrhal inflammation. The right ovary was found in a condition indicating chronic inflammation.

TABLE OF APPENDICITIS CASES OPERATED AT AUGUSTA HOSPITAL DURING THE YEAR 1908.
I. Children 15 years of age and younger; five boys, six girls.

No.	Record No.	Date of Admission.	Age.	Diagnosis.	Condition found during operation.
3	4612	Feb. 8.	14	External fistula, appendiceal abscess.	Perforated appendix communicating with fistula.
3	4613	Apr. 28.	15	Recurrent appendicitis, four attacks.	Grossly thickened suppurating appendix, old adhesions.
3	4912	May 1.	15	Recurrent appendicitis, acute attack.	Strongly adherent appendix, abscess at extremity.
3	5374	Sept. 13.	8	Recurrent appendicitis, second attack.	Perforated appendix containing concretions, abscess.
3	5555	Nov. 6.	4	Acute perforative appendicitis.	Gangrenous appendix about to perforate.
3	5675	Apr. 25.	11	Recurrent appendicitis, four attacks.	Gangrenous perforated appendix.
3	5254	Aug. 1.	11	Perforative appendicitis, diffuse peritonitis.	Gangrenous perforated appendix, general peritonitis.
3	5305	Aug. 29.	8	Perforative appendicitis, large abscess.	Gangrenous perforated appendix, large circumscribed abscess.
3	5369	Sept. 18.	11	Perforative appendicitis.	Gangrenous perforated appendix, many concretions.
3	5389	Oct. 25.	13	Recurrent appendicitis, mild attack.	Adherent club-shaped appendix, constrictions; abscess in end.
6	5523	Oct. 26.	10	Perforative appendicitis, abscess.	Perforated gangrenous appendix, circumscribed abscess.
II. Adults suffering from appendicitis uncomplicated; thirty-four males, thirty females.					
2	4495	Jan. 4.	28	Recurrent appendicitis, five years.	Strong adhesions to omentum and cecum partly obliterated.
2	4385	Jan. 16.	31	Recurrent appendicitis, acute attack.	Catarrhal appendix, adhesions, appendix contains concretions.
2	4628	Feb. 22.	24	Recurrent appendicitis, in interval.	Perforated appendix, adhesions.
4	4684	March 3.	35	Recurrent appendicitis, violent acute attack.	Gangrenous perforated appendix, diffuse peritonitis.
4	4724	March 14.	35	Chronic appendicitis.	Tubercular appendicitis.
4	4875	Apr. 11.	36	Recurrent appendicitis, acute attack.	Appendicitis oolitarsis, abscess in end.
6	4885	Apr. 28.	19	Acute perforative appendicitis.	Perforated gangrenous appendicitis, abscess in pelvis.
8	4902	May 1.	29	Acute perforative appendicitis.	Perforated gangrenous appendix, abscess retrocaecal.
9	4952	May 10.	35	Acute recurrent appendicitis.	Catarrhal appendicitis, fecal concretions.
11	4952	May 15.	30	Acute perforative appendicitis.	Gangrenous perforated appendix, general peritonitis.
11	4991	May 29.	21	Recurrent appendicitis, in interval.	Adherent club-shaped appendix, had been perforated.
12	5002	June 29.	28	Recurrent appendicitis.	Adherent appendix, obliterans lumen proximal end.
13	5071	June 29.	17	Recurrent appendicitis.	Appendix curled up snail-shaped, strongly adherent.
10	4952	May 15.	28	Hernia following incision for appendicitis operation.	Adherent appendix, scar in place of gangrenous portion.
15	5112	July 3.	20	Recurrent appendicitis, gangrenous appendix.	Gangrenous appendix, about to perforate.
16	5141	July 10.	28	Chronic appendicitis, ten weeks.	Gangrenous appendix, leaving scar tissue and abscess.
17	5141	July 10.	28	Recurrent appendicitis, acute attack.	Partly obstructed appendix with large stone.
18	5179	July 19.	27	Acute appendicitis, fulminating.	Acute suppurative appendix, not circumscribed.
19	5182	July 21.	23	Recurrent appendicitis, in interval.	Partly obliterated, club-shaped appendix, enteroliths.
20	5192	July 26.	24	Recurrent appendicitis, in interval.	Partly obliterated, club-shaped appendix, enteroliths.
22	5201	July 27.	22	Acute suppurative appendicitis.	Severely congested adherent appendix, quantity free fluid in abdomen.
22	5201	July 27.	27	Acute perforative appendicitis, intest. and obstruct.	Perforated gangrenous appendix, general peritonitis.
23	5227	Aug. 1.	33	Acute perforative appendicitis.	Perforated gangrenous appendix, circumscribed abscess.
23	5227	Aug. 1.	33	Acute perforative appendicitis.	Perforated gangrenous appendix, circumscribed abscess.
23	5418	Sept. 25.	18	Recurrent acute attack, catarrhal.	Perforated gangrenous appendix, circumscribed abscess.
26	5424	Sept. 27.	32	Recurrent appendicitis, third attack in one month.	Severely congested appendix distended with mucus.
27	5466	Oct. 6.	47	Recurrent appendicitis, obliterans.	Cicatricial constriction, foreign body.
29	5539	Nov. 1.	20	Perforative appendicitis, gangrenous peritonitis.	Adherent appendix, abscess in distal end.
29	5539	Nov. 1.	20	Traumatic chronic appendicitis.	Strongly adherent partly obliterated appendix.
30	5542	Nov. 2.	44	Acute peritonitis, strangulated hernia.	Perforated appendix, cecum and omentum in inguinal hernia.
31	5652	Dec. 5.	21	Recurrent appendicitis, acute attack.	Adherent appendix, abscess in distal end.
31	5648	Dec. 11.	28	Chronic appendicitis.	Adherent appendix, cicatricial thickening, abscess in end.
33	5687	Dec. 27.	21	Recurrent appendicitis, in interval.	Adherent club-shaped appendix, had been perforated.
34	4861	Apr. 28.	25	Recurrent appendicitis, in interval.	Adherent club-shaped appendix, obliterans, abscess in end.
34	4861	Apr. 28.	25	Recurrent appendicitis, in interval.	Adherent club-shaped appendix, obliterans, abscess in end.
35	4624	Feb. 13.	19	Recurrent appendicitis, acute attack.	Adherent club-shaped appendix, cicatricial contractions.
35	4645	Feb. 17.	28	Recurrent appendicitis, chronic, in interval.	Adherent small shaped appendix, cicatricial constrictions.
4	4678	March 1.	17	Acute perforative appendicitis.	Gangrenous perforated appendix, partial strangulation of appendix.
4	4678	March 1.	24	Recurrent appendicitis, acute attack.	Adhesions causing partial strangulation of appendix.
6	4775	March 25.	36	Acute appendicitis.	Perforated appendix surrounded with fibrous exudate.
7	4840	Apr. 12.	39	Acute appendicitis, perforative.	Perforated appendix, abscess containing concretions.
9	4911	May 3.	21	Recurrent appendicitis, acute exacerbation.	Strongly adherent appendix with acute abscess.
9	4911	May 3.	21	Recurrent appendicitis, convalescent.	Adherent appendix obliterans.
10	4956	May 18.	30	Acute perforative appendicitis.	Perforated gangrenous appendix.
11	4966	May 22.	40	Chronic appendicitis.	Adherent appendix, mucosa ulcerated and cicatricial.
12	5002	June 29.	28	Recurrent appendicitis, during interval.	Strongly adherent, partly obliterated appendix.
13	5037	June 10.	23	Recurrent appendicitis, during interval.	Adherent appendix partly obliterated, contains concretions.
14	5068	June 29.	20	Recurrent appendicitis, during interval.	Adherent appendix partly obliterated, contains concretions.
15	5099	June 28.	41	Chronic appendicitis, in interval.	Gangrenous perforated appendix, surrounded with omentum.
15	5099	June 28.	41	Chronic appendicitis, in interval.	Strongly adherent appendix, had extensive peritonitis.
17	5082	June 26.	38	Chronic appendicitis, in interval.	Strongly adherent appendix, obliterans abscess in end.
18	5154	July 12.	40	Chronic appendicitis, in interval.	Strongly adherent appendix, cicatricial contractions.
19	5182	July 21.	23	Recurrent appendicitis, in interval.	Club-shaped adherent appendix, cicatricial contractions.
20	5169	July 29.	18	Acute perforative appendicitis.	Club-shaped adherent appendix with abscess.
21	5176	July 29.	49	Adhesions following appendicitis.	Strongly adherent appendix, fixing cecum.
22	5206	July 28.	32	Chronic appendicitis, in interval.	Adherent appendix, cicatricial constrictions.
23	5212	July 31.	34	Chronic appendicitis, recurrent.	Adherent club-shaped appendix, concretions.
24	5248	Aug. 14.	55	Tubercular peritonitis.	Tubercular appendix.
25	5258	Aug. 16.	20	Recurrent appendicitis, acute attack.	Severely congested appendix, containing mucus.
26	5267	Aug. 16.	15	Recurrent appendicitis, in interval.	Strongly adherent club-shaped appendix.
27	5296	Aug. 26.	17	Intestinal obstruction following app. operation.	Adhesions causing volvulus of ilium.
28	5411	Sept. 25.	39	Chronic recurrent appendicitis, in interval.	Partly obstructed lumen, large incarcerated enterolith.
29	5619	Nov. 29.	24	Acute septic appendicitis.	Severely congested acutely inflamed appendix.
30	5683	Dec. 18.	21	Recurrent appendicitis, acute perforative.	Perforated gangrenous appendix, abscess.
III. Appendicitis with secondary infection of adnexa; fifteen cases.					
1	4677	March 1.	16	Recurrent appendicitis, acute attack.	Perforated appendix, adherent to right ovary and tube.
3	4679	March 1.	20	Recurrent catarrhal appendix.	Severely congested right ovary and appendix containing stone.
3	4716	March 12.	21	Pyosalpinx, recurrent appendicitis.	Abscess involving appendix, right ovary and tube.
4	4766	March 24.	36	Recurrent appendicitis.	Appendix strongly adherent, evidence of perforation, adhesions involving right ovary.
5	4794	Apr. 3.	26	Recurrent appendicitis.	Appendix strongly adherent, club-shaped, distal extremity cicatricial, infected right ovary.
6	4823	Apr. 7.	38	Recurrent app. implicating r. ovary and tube.	Constricted distorted appendix, inflamed adherent cystic ovary and tube.
7	4950	May 15.	23	Chronic catarrhal appendicitis.	Long appendix containing concretions, adherent to ovary and tube.
8	4969	May 29.	33	Pelvic abscess, probably tubal.	Acute appendicitis with infected ovarian cyst.
10	5145	July 13.	25	Pyosalpinx, implicating appendix.	Appendicitis obliterans, secondary byrosalpinx.
10	5145	July 13.	25	Pyosalpinx, implicating appendix.	Constricted appendix, containing detritus and secondary pyosalpinx.
11	5225	Aug. 8.	31	Chronic catarrhal appendicitis.	Appendicitis obliterans, secondary infection of right ovary and tube.
12	5473	Oct. 4.	28	Recurrent appendicitis, in interval.	Chronic recurrent appendicitis, secondary ovaritis and salpingitis.
13	5488	Oct. 10.	28	Adhesions following appendicitis.	Chronic recurrent appendicitis, secondary ovaritis and salpingitis.
14	5235	Oct. 20.	24	Recurrent appendicitis, secondary ovaritis, salpingitis.	Constricted adherent appendix containing detritus, secondary ovaritis and salpingitis.
15	5535	Oct. 30.	34	Catarrhal appendicitis.	Catarrhal appendicitis, concretions, chronic ovaritis.
Patients suffering primarily from inflammation of adnexa and secondarily from appendicitis.					
1	4531	Jan. 12.	32	Pyosalpinx.	Hydrosalpinx, cystic ovary, adherent appendix.
2	4762	March 22.	27	Pyosalpinx.	Suppurating ovarian cyst involving appendix.
3	4811	Apr. 5.	45	Chronic appendicitis.	Salpingitis, adhesions of ovary, tube and appendix.
3	4811	Apr. 10.	45	Chronic adhesions after abortion.	Salpingitis, adhesions of ovary, tube and appendix.
5	4916	May 5.	23	Pyosalpinx.	Pyosalpinx with adhesions of appendix.
6	4940	May 12.	26	Ovaritis.	Gonorrhoeal infection both ovaries, tubes and appendix.
7	4943	May 14.	27	Pyosalpinx.	Double pyosalpinx involving appendix.
7	4943	May 15.	27	Pyosalpinx.	Double pyosalpinx involving appendix.
9	5067	June 21.	34	Pyosalpinx.	Suppurating ovarian cyst involving appendix.
10	5225	Sept. 4.	40	Pyosalpinx, chronic appendicitis.	Double pyosalpinx involving fecal concretions.
12	5454	Sept. 27.	26	Salpingitis.	Double pyosalpinx involving fecal concretions.
12	5454	Sept. 27.	26	Salpingitis.	Salpingitis right side, catarrhal appendicitis.
13	5500	Nov. 22.	85	Pyosalpinx.	Adherent right ovary, tubes and appendix.
13	5500	Nov. 22.	85	Pyosalpinx.	Double pyosalpinx involving appendix.

A review of the histories from which I have constructed the accompanying table which represents 103 cases at the Augustana Hospital, in which I removed the appendix, for inflammatory disease, during the year 1898, will demonstrate the following significant facts: There were 90 patients suffering primarily from appendicitis and 13 in which the primary disease was either in the adnexæ, or both appendix and tubes were so extensively implicated that it was impossible to determine the primary seat of the inflammation. Of the patients suffering primarily from appendicitis, 39 were male and 51 female. Of the latter 36 suffered from appendicitis alone, and 15 suffered from appendicitis with a secondary involvement of the right ovary and tube. Eleven patients were under 15 years of age, and of these 5 were boys and 6 were girls. All the children suffered from acute attacks, with either gangrenous appendices or perforations.

Judging from this year's experience, as well as from my very much larger former observations, I am certain that the matter of secondary infection, especially of the right ovary and tube, has been very much underestimated. The following conclusions seem to be borne out by this experience:

1. Appendicitis frequently causes inflammatory diseases of the right ovary and tube, and occasionally the left side is also involved.
2. This condition is especially likely to give rise to chronic invalidism, because of the periodic exacerbation resulting from the congestion due to menstruation.
3. In operating for the relief of pyosalpinx, the condition of the appendix should always be determined.
4. In operating for chronic or recurrent appendicitis in patients suffering also from dysmenorrhea, the right ovary and tube should be examined.
5. If the pain is limited to the right side in severe dysmenorrhea, the appendix is frequently primarily involved.
6. In catarrhal appendicitis in which there is a fecal concretions in the appendix, or in appendicitis obliterans, the pain is frequently most severe during menstruation.
7. In patients who have recovered from gangrenous appendicitis there is frequently no further disturbance from the condition of the appendix, except the digestive disturbance due to adhesions, while the secondary disturbance in the ovary and Fallopian tube may continue to be very great.
8. In young girls suffering from dysmenorrhea the history should be followed very carefully, in order to determine the presence of a previous attack of appendicitis.
9. The fact that many of these cases are mistaken for salpingitis accounts for the theory that appendicitis is more common in men than in women.

[The foregoing is one of a series of six papers on Appendicitis. The discussion will follow the last paper of the series.]

AUTHORITIES QUOTED.

1. Brooklyn Medical Journal, April, 1897.
2. Deutsche Med. Woch., No. 40, 1897.
3. A Treatise on Appendicitis, Philadelphia, 1896, p. 152.
4. Ann. Gynéc. et l'Obstét., December, 1897.
5. Mittheilungen a. d. Grenzgeb., vol. ii.
6. Normandie Méd., Rouen, 1898, xii.
7. Monograph, Paris, 1898.
8. Rev. de Gynéc. et de Chir. abd., Paris, 1898, xi.
9. N. Y. Medical Journal, May 18, 1895.
10. Philadelphia Medical Journal, 1898, ii, 796.
11. Le Gynéc., June, 1897.
12. The Physician and Surgeon, November, 1894.
13. Virchow's Arch., vol. cxxvii, H. 1, 1893.
14. Deutsche Zeitsch. f. Chir., vol. xlv, p. 401.
15. Buffalo Medical Journal, 1897-8, p. 255.
16. A Practical Treatise on Appendicitis, Chicago, 1897.
17. Rev. de Gynéc. et de Chir., 1898, p. 78.
18. Monograph. Wm. Braunmüller, Vienna and Leipzig.

APPENDICEAL PUS.*

COMPLICATIONS AND SEQUELÆ.

BY JOHN B. DEAVER, M.D.
PHILADELPHIA.

The experience of many years in treating the complications and sequelæ of appendiceal pus has led me to choose this subject as a proper and profitable one to bring to your notice, with the hope that both you and I may gain by the exchange of ideas and relation of experience. I am quite sure that many of you have seen and treated the various conditions which follow and complicate pus within the peritoneal cavity and, as a consequence, realize the peculiarly infectious and destructive nature of that variety which owes its origin to appendicitis. And from essential conditions, the case cannot be different. We have in the appendix a narrow, muscular tube, filled with lymphoid tissue; it possesses a blood-supply from a terminal artery; it is deficient in drainage; it is always in more or less intimate contact with the peritoneum; it is undergoing retrograde metamorphosis; and, finally, it is inhabited both in health and in disease by that protean micro-organism—the bacillus coli communis. As anatomical factors, we have in the right iliac fossa, or at least within reach of the appendix, the cecum, the terminal portion of the ilium and the iliocecal valve, coils of intestine, the omentum, the right kidney and ureter, the iliac vessels, the mesenteric and portal veins, and the bladder; in the female, the uterus, tubes and ovaries; the bernal openings, and beyond all, a great mass of lymphatics. With such circumstances as these in juxtaposition it needs only the application of the torch of inflammatory action to produce the ravages which we must so frequently encounter when inflammation of the appendix has been allowed to reach its limits—if, indeed, it may be said to have any. Aided, let us suppose, by the mechanical, i. e., ulcerative effect of a coprolith within its canal, there takes place a rapid invasion of micro-organisms through the mucous, submucous, muscular and peritoneal coats of the appendix; there is thrombosis of the arterial vessels, with partial or complete gangrene followed by rupture, and abscess formation—or it may be a stricture of the canal taking place after ulceration, with a small quantity of pus penned up at distal end of the appendix—or there may be simple follicular ulceration of the mucous membrane lining the appendiceal lumen; yet, whatever the condition, it is a source of danger, either local or general or both, only in so far as it represents the toxic action of bacteria. And it is in this connection that to the colon bacillus must be ascribed supreme importance, for either virulent in itself or rendered so by the chemical products or indigestion or by those of other micro-organisms, or even associated with the micro-organisms themselves, it adds by its mere presence especial threat to both the exudate and to the pus resulting from appendicitis. Though in most instances it is the only bacterium present, in the earlier stages at least, yet the colon bacillus is often accompanied and assisted in its infectious action by the staphylococcus pyogenes aureus, by the streptococcus pyogenes, or by both, by the bacillus pyocyaneus and the bacillus prodigiosus, by the micrococcus lanceolatus and some others. I have seen astonishingly rapid suppuration and infection from the combined action of the bacillus coli communis and the streptococcus pyogenes, and equally severe results from the poisonous presence of the bacillus pyocyaneus alone; but, however, often in

*Presented to the Section on Surgery and Anatomy, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June, 6-9, 1899.

a long series of cases we may meet with the deleterious influence of the various individual bacteria, it is to be remembered, nevertheless, that the bacillus coli communis gives the characteristic feature to appendiceal inflammation and pus collections resulting therefrom; this feature consisting in great virulence and an especial aptitude for transmission and pyogenic action.

We have, then, in the appendix a structure easily susceptible to high-grade inflammation and consequent destruction, not only of its own tissues but also those of the various important abdominal viscera with which, by its various positions, it may be in more or less close contact. We have in appendiceal pus a substance possessing peculiarly poisonous properties; we have about the appendix lymphatics and blood-vessels for the absorption and transmission of the toxins and transplantation of the micro-organism causing, or developing from, appendiceal inflammation. This is a combination from which only the direct results can be rationally expected, and unfortunately our experience merely confirms such expectations; for this condition exceeds even the invasion of the female pelvic organs by gonococci in risk of life by local or constitutional danger.

Of all the complications of appendicitis, peritonitis, that dreadful disease which has and is to-day carrying many a human soul into eternity, stands foremost in frequency and mortality. Now, a more or less severe inflammation of the serous coat of the appendix is of common occurrence in many cases of appendicitis, and within certain limits, is rather beneficial than otherwise, by the formation of adhesions; but, when, from infection or from extension or by rupture, the general peritoneum becomes involved in a suppurative process, the outlook is indeed unfavorable, if not hopeless. I need not enter into an extended discussion of this complication, but I shall merely say that my experience in both its operative and palliative handling has led me to believe that general purulent peritonitis is not amenable to successful treatment. I am quite aware that "successful" cases have been reported, but in such instances there has always been a doubt in my mind as to the extent or character of the inflammation. The peritoneum is so large and so full of nooks and corners that I have always felt that some parts of it must have been free from infection, and certainly no man at an operation can make an examination sufficiently thorough to enable him to prove this statement false. Personally, I have never seen a case of *genuine general purulent peritonitis recover*, and this despite hydrogen peroxid, salt solution, opium, or salts, operation or "expectant" treatment the results were the same and I have come to the belief that, when certain of the diagnosis, this condition is an absolute contraindication to operation.

Secondary abscesses of the peritoneum, more or less localized by adhesions in the vicinity of the appendix or its site, are not infrequent and are of the same importance as the original pus collection.

I may here mention that constitutional septic infection intoxication resulting from absorption of the poisons elaborated in some appendiceal pus cases, resembles in some respects clinically the appearance of typhoid, and it may present considerable difficulty in diagnosis; pathologically there may be simple follicular ulceration of the mucosa of the appendix lumen, or stricture formation with a small retention abscess as it were; or lastly a pericecal or retrocecal abscess. In these instances septic or even true croupous pneumonia is especially apt to supervene and induce a rapidly fatal termination. And in these same septic

states the occurrence of acute Bright's disease or acute endocarditis is by no means rare.

The hepatic complications arising from appendiceal pus are of extreme interest and importance. Thrombophlebitis of the mesenteric veins in a common enough process in appendix inflammation, and when we add to this a free anastomosis between these vessels and the radicles of the portal vein, the possibilities for infection of the hepatic structures by extension along the veins, or by septic emboli, are readily appreciated. Indeed, abscess of the liver, either single, or usually multiple, may so mask the symptoms of the primary affection that only by the post-mortem are we made aware of the pyogenic focus in the appendix. Formerly regarded as pathologic curiosities, pyelophlebitis and hepatic abscess are now recognized as among the most to-be-feared complications of appendicitis—and this is not only in cases with large pus collections, but also in those apparently less severe conditions, with small ulcerative or gangrenous processes taking place within the mucosa of the appendix. Sometimes, as an extension of the liver abscess through the diaphragm or as processes depending upon septic emboli from the appendiceal pus, purulent pericarditis and particularly, purulent pleurisy, may result, which, unless relieved by operation, may rupture externally through the ribs or into the bronchial tubes. Several of such cases I have personally seen.

Of nature and formation similar to the hepatic abscesses are those multiple metastatic abscesses in the kidney, lungs, and spleen, which post-mortem records prove to be of daily occurrence in acute appendicitis with circumscribed pus collections; seen in those cases especially in which operation is postponed for the favorable "interval," or where the golden hours are allowed to slip by while waiting to actually demonstrate the presence of that poisonous pus which so often robs the patient of vitality and life itself.

Having mentioned now some of the most frequent and important complications of appendiceal pus more or less remote from the source of infection, let me consider briefly the more localized manifestation of the intense activity and destructive power of this substance. Here besides the blood, and lymphatic supply, several other factors play an essential part. First of all is the position of the appendix itself, the risk of life and to the neighboring structures evidently depending upon its direction and the part affected, the danger being greater when the tip of the appendix points toward the spleen; when it points into the pelvis—in which cases I emphasize that the pain may be left-sided; or when it curls up over the ascending colon, the danger being least when the appendix lies beneath the ascending colon or when it points west. In addition we must recognize the influence of gravity, the effect of the recumbent or upright position—as it may happen—and the anatomical relations of the peritoneum, coils of intestine, etc. Ulcerative and gangrenous processes are the natural effects of both the mechanical and bacterial action of the appendiceal pus. This is often observed in the omentum, considerable areas of which are found partially or completely necrotic, and require extreme caution in their operative manipulation. Depending upon the position of the appendix or the pus from it, we may have iliac phlebitis; phlebitis with thrombosis of the iliac vein, and consequent edema of the leg affected; or one iliac vein may be the seat of a local gangrenous action severe enough to perforate and cause fatal hemorrhage. By the same means appendiceal pus, or the appendix itself

may rupture into one of the hollow viscera, the intestines, the bladder, or the pelvis of the ureter, causing a probably incurable internal fistula; or rupture may take place through the abdominal wall with the formation of an external fistula. These complications are especially prone to occur when the tip of the appendix, in close relation to one of the above-named structures, becomes gangrenous and involves its attachments. When the appendix, postcecal and pointing north, is the seat of abscess formation it is not unusual to meet with enormous collections of pus extending far up toward the liver. These retrocecal abscesses are probably the most numerous, and fortunately can be handled with less risk to the peritoneum than any other variety. I have seen cases where the gall-bladder formed part of the confining wall of an appendiceal abscess with subsequent infection and necrosis, resulting in biliary fistula. When in such instances the infective process involves the post-peritoneal connective tissue, we have the so-called lumbar phlegmon. In fact, in the absence of lesions of the spinal column, it is probable that the idiopathic perinephritic abscess of former days was invariably due to the retroperitoneal extension and septic infection of an antecedent appendiceal pus collection.

Of appendiceal pus in hernial sacs and purulent appendicitis complicating or complicated by pregnancy, I shall make mention only in so far as to state that in my opinion neither offer contra-indication to operation, as several successful cases testify. But I have left to the last, consideration of one particular of one aspect of this subject. I refer to the effect of appendiceal pus upon the pelvic structures, especially the reproductive organs of the female. When appendiceal pus occupies the pelvis it is usually the result of phlegmonous inflammation of an appendix pointing due south or southeast, of which merely the distal extremity, usually in close relation with one of the pelvic organs, is affected by an ulcerative or gangrenous process. The pain, as I have said, is commonly left-sided; the abscess formed is generally of only moderate size, so that there is more than the usual liability of confounding this condition with true pelvic disease, especially as adhesions are rapidly and solidly formed, confining the abscess along the sigmoid or the bladder, or between the two. The bladder wall and the sigmoid are often perforated, and two of the most distressing cases that have ever come under my care were of this character. One was a vesico-intestinal fistula in a young man from whom feces passed by the urethra; the other was a young girl with a similar condition, through whose urethra flatus was expelled. From the standpoint of the gynecologist, such pelvic lesions are claimed to have their origin in tubal or ovarian disease, with secondary involvement of the appendix attached thereto; from the standpoint of the surgeon, the appendix is responsible for the primary affection and its complications, causing first an infective salpingitis with later involvement of the sigmoid or bladder or both. The surgical idea seems to me to be much the more rational, because such widespread pelvic lesions are particularly encountered in young women and girls in whom no history or sign of external infection can be obtained; 2, because of the greater virulence of appendiceal pus and its especial faculty of setting up purulent processes in other organs; and, 3, because the initial symptoms point rather to appendiceal than to ovarian or tubal disease. In these cases, too, I have been impressed by the fact that there is frequently a tuberculous family taint, but without demonstrable lesions in the patient, so that the underlying condition may be not only a diminished power

of resistance to the influence of acute inflammation, but also, in some instances, at least, a mixed infection, dormant tuberculous elements being started into activity by fresh infection from appendiceal pus.

But whatever their etiology and precise formation, I would lay especial stress upon the clinical importance of these pelvic lesions in which both the ovaries and tubes, together with the appendix, are involved in phlegmonous inflammation. Surgically they offer difficulties that are at times insurmountable. The organs are covered by great quantities of exudate in which one or more smaller abscesses are to be found; dense adhesions are encountered which have so devitalized the attached organs that the slightest traction is liable to induce a rupture into the bladder or sigmoid. I have seen the pelvis practically one solid mass, and as if this were not enough, these adhesions have a particular tendency to recur beyond the power of human skill to prevent or even ameliorate. The most remarkable case of this character I have ever dealt with I shall briefly outline.

An attack of acute appendicitis in a young man was followed by apparent recovery without operation. Later his right chest filled with what aspiration indicated to be appendiceal pus; a rib was resected and he improved; this was probably a sub-diaphragmatic abscess. Still later the sigmoid was perforated and the pelvic abscess further evacuated itself by the rectum.

As far as the sequelæ of appendiceal pus are concerned we have to deal principally with the effects of adhesive inflammation and with fistula; as the result of adhesions, we may, and often do, have intestinal obstruction, the bowel having twisted itself about a ribbon-like adhesion; or the obstruction may be due to the mere contraction of adherent coils of intestine, or to the constriction exercised by the contracting wall of an abscess, especially if this has not been radically dealt with. Frequently the omentum becomes attached to the parietal peritoneum and by its efforts to free itself, as well as by certain movements—coughing, deep inspiration, etc.—intense pain is caused. Indeed in some cases only slight adhesions are necessary to be the source of considerable trouble, though, naturally, intestinal obstruction is the danger most to be feared from their presence—a danger which even operation at times can merely diminish, but scarcely remove.

As for fistula, I have already some mention of those conditions, by no means rare, in which appendiceal pus ruptures into the hollow viscera, especially the cecum, ilium, sigmoid, bladder, ureter or Fallopian tube, constituting an internal fistula. Such communications, as you know, show small tendency to spontaneous cure, and the operations necessary for their relief are apt to be so severe and so fatal that we are often obliged to withhold any surgical interference whatever. External fistula, however, offer more promising results, the simple fecal variety, seen after operations for evacuation of appendiceal pus, often healing of their own accord within a few days. However, an unhealed abscess may underlie any simple external fistula, or the fistula may be in communication with the appendix, in which event removal of this organ is absolutely necessary to effect a cure.

Of fecal fistulae two classes are commonly observed: 1, when the appendix connects with the sinus; 2, when the fistula is in communication with a part of the bowel—usually the cecum or ilium. Of these, the first variety is much the more favorable, a comparatively moderate operation sufficing for complete closure. But when the fistula involves the cecum, or ilium, a very extensive operation is required, which the weakened condition of the

person afflicted may render extremely dangerous, if not altogether impossible.

One, if not the most distressing, sequel of appendiceal abscess is a fecal fistula, the forerunner of which in not a few cases is practically an artificial anus. Can you imagine anything more capable of demoralizing, not only the patient, particularly if she be a young unmarried woman, but also the attending surgeon? When this follows the evacuation of an appendiceal abscess it usually occurs about the end of the first week. I know of nothing more distressing, not only to the patient, but the parents as well. The surgeon, too, is frequently held accountable for this terrible condition. I style it "terrible" for I know of no word that can better express it. It has fallen to the lot of the writer upon more than one occasion to account for this distressing condition, not only to the family, but their friends. In the majority of cases it is the result of a late operation we must admit, therefore why cry against the radical surgeon who practices, teaches, and begs his fellow surgeon to operate upon the advent of the initial appendiceal pain. While this is only one of the many arguments in favor of operative interference at the earliest possible moment, it alone is strong enough in the writer's opinion to influence any right thinking medical man that it is the only course of treatment to pursue.

I have apparently made a rather gruesome representation of the complications and sequelæ of appendiceal pus, but the picture has one virtue, it is an accurate one; for I have myself, together with every surgeon who operates in a fair proportion of such cases, met repeatedly with just these conditions.

I repeat, appendicitis with pus formation produces ravages of the worst description; the effects are often permanent and irremediable, and in my experience unequaled by any other affection occurring within the abdominal cavity. For me, the lesson taught by the widespread, disastrous lesions of appendiceal pus was long ago learned, in fact, these very complications but accentuate the necessity of early operation to usher in that prevention which is indeed cure.

Would that my voice were strong enough to sound the note of warning against the presence of appendiceal pus, its ravages, etc., from the Atlantic to the Pacific and far beyond the everglades of Florida to the glaciers of Alaska.

[The foregoing is one of a series of six papers on Appendicitis. The discussion will follow the last paper of the series.]

ACCIDENTAL HEART MURMURS.*

THEIR CAUSES AND DIFFERENTIAL DIAGNOSIS.

BY GEORGE W. WEBSTER, M.D.

PROFESSOR OF PHYSICAL DIAGNOSIS NORTHWESTERN UNIVERSITY
MEDICAL SCHOOL.
CHICAGO.

Every theory in physical diagnosis should be the realization, not the violation, of a physical law. Every theory in connection with the diagnosis of cardiac murmurs, to be enduring, must harmonize with the physical laws governing the mode of production, pitch, quality, intensity and conduction of sound.

It is the duty of the teacher to seek out and apply these laws and central essential truths, seeking particularly and insisting especially on those which are fundamental, at the same time giving due weight to those which are less palpable to ordinary observation and likely to escape indolent research, and to impress both upon those whom he

addresses with every embellishment that can be furnished by his knowledge, and every weight, emphasis and adornment attainable by his power.

Before considering the causes of accidental murmurs, it may be well to indicate what is meant by this term and also to indicate the purpose of this paper.

Murmurs were formerly classified as organic and inorganic or as organic and functional; the latter being again subdivided into anemic or hemic, and dynamic. The anemic or hemic murmurs were supposed to originate in depraved blood states, while the dynamic were ascribed to irregular or perturbed action of the heart muscles, quite independent of any abnormality of the blood.

This classification is faulty and inaccurate. A so-called functional or anemic or hemic murmur may be present when there is no anemia, and when important blood changes are not demonstrable and where proof of any inco-ordination or perturbed action of heart muscles is wanting. A murmur may be classified as functional, when the purist may maintain that a functional disturbance is the result of a pathologic change. Such a classification commits us to too much, as, by its terms it indicates the pathology, which is not yet a matter of agreement or is not supported by the evidence.

The chief objection, however, lies in the fact that such a classification, besides being simply a cloak with which we cover up our want of knowledge of the subject, is a bar to progress. This objection may be urged against the term "accidental," but this can be said in its favor; it commits us to no theory of causation and places no impediment in the way of investigation.

This want of uniformity in terminology, and lack of unanimity of opinion regarding the cause of accidental heart murmurs is very confusing to both students and practitioners, tending to envelop the whole subject in so much confusion that both are likely to be led to believe that out of so much contradiction and chaos, it is impossible to evolve anything practical, and that an accurate diagnosis is impossible.

This paper is not written because of the hope or belief that I can add anything new to the subject, but simply to make a plea for simplicity and uniformity of terminology, to urge the recognition of the teachings of physical science, and to attempt to show that notwithstanding our hazy, nebulous, discordant views in regard to etiology and pathology, an accurate diagnosis is, in the majority of cases, comparatively easy; and lastly, to make a plea for more careful, painstaking accurate diagnosis, because we should be more careful in condemning patients to a life of mental misery, by a wrong diagnosis.

By accidental murmurs I mean all those murmurs not readily recognized and classified as organic, but formerly classified as functional, anemic, hemic, spanemic, dynamic, etc., and would suggest the following classification.

Murmurs	{	Endocardial	{	Organic
		Exocardial		Accidental

Before taking up the accidental murmurs, a few words should be said in regard to the cause of those designated as organic.

The first satisfactory explanation of the mode of production of murmurs was made by Corrigan. He showed that when the blood flows through a constricted opening into a normal channel beyond, or flows through a normal orifice into a widened channel, or regurgitates through an orifice normally closed by valves, vibrations are produced which may ultimately reach the ear as sounds.

Chauveau supported the views of Corrigan, extending

*Presented to the Section on Practice of Medicine, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-8, 1898.

his observations and clearly demonstrating their correctness, also proving that friction caused by roughening of the interior of the tube cannot originate a murmur, and has no influence on the production of sound.

Heysius pointed out what is now generally accepted: that the murmurs have their origin in the fluid blood and are primarily vibrations in the blood itself, the vibrations being caused by the formation of Savart's "fluid veins." In other cases "eddies" are formed. The intensity and area of audibility seem to depend on the force of contraction, the quality probably depending on the rapidity of the vibrations. These vibrations are transmitted through intervening structures to the surface of the chest and may be perceived as sounds. These sounds are termed "murmurs," and are recognized as having a definite, physical cause.

It is quite generally conceded then, that organic disease is due to structural changes of a more or less permanent character, the theory being in accord with the teachings of physical science. It is quite otherwise with the accidental murmurs. Here theory, speculation and fancy have been allowed full sway, each writer or observer evolving his own pet theory accompanied by an argument more or less logical, attempting to explain the beauties of his own theory and expose the fallacies of others. The following are some of the advanced:

THEORIES OF CAUSATION OF ACCIDENTAL MURMURS.

1. The theory of Naunyn is that it is a murmur of mitral regurgitation, heard, not in the mitral area, but in the left second interspace outside the pulmonary area, just where the appendix of the left auricle comes up from behind, and as Walshe⁷ pointed out, lies in contact with the chest wall, and in some cases may even cover the pulmonary artery. This is the theory to which Balfour² gives emphatic endorsement. He says: "Naunyn's explanation is the only one consistent with the facts and is now universally received."³

"Now we know that the so-called functional murmurs of both kinds—hemic and dynamic—depend upon the dilation of the heart, due to residual accumulation from imperfect discharge of its function, by a heart, unable through debility, to cope with the blood-pressure, which is either natural or only slightly raised."

Stengel⁴ says of Naunyn's theory which Balfour advocates so warmly, "This view seems to be held by no one at the present time, and I refer to it only to express dissent."

Hoover⁵ also dissents from this view and says very pertinently: "If genuine regurgitation were the cause of a murmur in this region, the physical principles of the transmission of sound demand that the murmur should be audible at the apex of the ventricle as well as over the appendix of the auricle." He is a follower of Potain and is inclined to classify most of the accidental murmurs as cardiopulmonary, although he distinctly states that he does not wish to be interpreted as classifying all so-called functional murmurs under this head. In support of the theory of Potain, he cites the experimental evidence of Francois-Franck, who discovered, while operating on a dog, that there was a systolic murmur audible over the heart. "Without opening the pleural cavity, he introduced a tenaculum through the thoracic pleura, and withdrew a tongue of lung from the anterior aspect of the heart. Directly the murmur ceased; but the murmur returned when the tongue of lung was permitted to reoccupy its former position."

Quince⁶ relates six cases in which there was a pulmonary murmur with perfectly sound hearts and arteries, the only abnormality being retraction of the lung

from the base of the heart. He supposes that in these cases, the murmur is produced by the pressure of the heart upon the pulmonary artery during contraction, with formation of "fluid veins."

Russell and Hanford inclined to the view that the murmur heard in the pulmonary area and outside of it is caused by pressure on the pulmonary artery by a dilated auricle.

Allbutt⁷ says: "Arguments of weight seem to prove that these murmurs about the pulmonary orifice are not due to mitral regurgitation, as claimed by Balfour and Naunyn, and not due to pressure on the pulmonary artery, as claimed by Russell and Hanford."⁸

Stengel⁴ says that he is sure this is not the explanation and that the views of Naunyn and Balfour "are held by no one at the present time."

Potain⁹ maintains that the murmurs of anemia are of cardiopulmonary origin.

M. H. Sonlier¹⁰ maintains that inorganic murmurs are probably due to friction. He cites the experiment of placing the palm of the left hand over the left ear, and says that by scraping the back of the hand with the end of the finger in a rhythmical manner, a sound similar to a double cardiac murmur will be produced. He thinks that if the pericardium be dulled from any cause not necessarily inflammatory, a murmur may be induced. This is theorizing with a vengeance.

Thalma¹¹ calls attention to some experiments on dogs, made with a view of determining the influence of certain blood states. Oligemia was produced by bleeding, and hydremia by running warm saline solution into the femoral vein. He concludes that: 1, inorganic murmurs were rarely produced by oligemia; 2, hydremic plethora favored their production; 3, quinin produced a dilation of the heart with cardiac and arterial murmurs closely resembling those found in chlorosis; 4, infrequency of the heart's action, due to a marked filling of the cavities of the heart favored the development of murmurs.

At the meeting of the German Medical Congress in April, 1899, Dr. Winkler¹² of Vienna stated that sounds are sometimes heard over the mitral valve, for which no cause could be found post-mortem. This he attributed to a faulty action of the papillary muscle and a deficient insertion of the valve muscles. He impeded the action of the papillary muscles, and the post-mortem examination showed that he did not damage the valves. Both systolic and diastolic sounds continued to be heard, and mitral regurgitation occurred. He claims to have established a relationship between functional and organic mitral insufficiency.

Sansom¹³ says, "I cannot doubt that a systolic murmur, heard at the apex of the heart in anemia indicates a veritable regurgitation. The audibility of the murmur at the back fulfills the requirements of all observers for an organic mitral regurgitant murmur." He says that he cannot subscribe to the views of Balfour, Naunyn, Hanford and Sehrrwald, and that "no explanation of the systolic murmur heard over the site of the origin of the pulmonary artery can be satisfactory which does not recognize a nervous as well as a cardiovascular causation"¹⁴.

He concludes that the arterial systolic murmurs are caused by a tremor of the conus just below the valves. He also says, "it seems quite possible that the valves themselves may vibrate in the current"¹⁵. The pathogenesis is neuromuscular."

Osler¹⁶, in speaking of the heart in chlorosis says that "a murmur may be heard at the base or at the apex." He refers to Balfour's explanation when the murmur is at the pulmonary region, but offers no opinion regarding it.

Russell proposes two explanations. He suggests that in some cases it might be produced by dilation of the left auricle, which, pressing upward upon the pulmonary artery, gives rise to a narrowing of its lumen; while in other cases it is simply the systolic murmur of tricuspid incompetence propagated upward to the conus arteriosus.

Gibson¹⁷ formerly held to the opinions of his teacher, Balfour. He now repudiates his theories and states that he believes that Russell has disproved the theories of all observers previous to himself. Then he goes on to say that while Russell has disproved all previous theories, part of his own will not bear investigation. He also claims that Samson is "obviously in error." His own view here is that the systolic murmur heard in the pulmonary area is due to tricuspid incompetence, but admits that it is perfectly possible that for some of the cases, Hanford's explanation is plausible.

Anders¹⁸ seems to favor the hemic origin of these murmurs. He says, "soft blowing murmurs of hemic origin are not infrequently heard over the carotid arteries—hemic murmurs at the base of the heart in pernicious anemia." Again he says, "Keihl's work shows the dependence of the valves for their complete closure upon a normal state of the different portions of the heart muscles." And again, "the special conditions rendering these murmurs audible are the great dilatation, softening of the papillary muscle and abscess near the valves."

Musser¹⁹ says, "Anemic murmurs are generated at the pulmonary orifice or in the cone of the right ventricle." "Tricuspid and mitral valves often become relatively incompetent; mitral and tricuspid regurgitation ensues." "The vessels are dilated from artificial disease, the increased caliber favors a development of a murmur by the creation of a fluid vein." He also gives a classification of Drummond:

Functional	{	cardiohemic or anemic.
		cardiomuscular or neurotypic.
		cardiorespiratory.

Vierordt says in regard to these murmurs, "These are difficult of explanation. We think with others that the nature of the phenomena differs in different cases, and in many cases we apply Sahli's supposition that venous murmurs from the large veins in the thorax lie behind these heart murmurs."

Skoda²¹ says concerning hemic murmurs: "The opinion that they rise through any particular condition of the blood is hypothetical," and speaking of the venous murmurs, he says, "I have for many years looked upon it as a sign, neither of a watery condition of the blood nor of anemia." It exists even in the young and healthy." He was also familiar with the fact that no sound is produced by friction between the blood and the vessel walls, and freely credits Hamernik with having in 1847 called attention to this now well-known fact. Skoda also agrees with his explanation of the venous murmur: "The less the quantity of blood present in the vena cava, the more rapid will be the flow of blood through the jugular veins during inspiration, and the smaller the current of blood." "Now, the internal jugular vein is so attached at its lower part as of necessity to always retain a certain width; the diminished stream of blood can only fill this wide space by passing through it with an eddy movement." He also states that the conditions necessary for the production of the murmur exist only in the internal jugular vein, and in a much more perfect manner in the right than in the left. That he correctly appreciated the im-

portance of what we now call fluid veins is shown by these words: "A murmur also arises, when a rapid current of blood is directed against blood that is quiescent, or moves less rapidly, or in a contrary direction."²²

Whittier²³ classifies these murmurs as accidental, refers to the opinion of Sahli, who believes these murmurs are due to hydremia; to Durozies, who believes the venous murmurs may be conducted to the heart and simulate valve murmurs; also to the prize essay of Audeoud and Jacot-Descombres, who describe what they call a functional murmur of mitral stenosis in nervous irritable people affected with chloroanemia. These probably belong to the class so well described by Potain as cardiopulmonary, as do also the presystolic murmurs described by Flint and which led to the controversy between Drs. Flint and Balfour, the latter intimating that the former could not hear a murmur correctly. In regard to the cause, Whittaker says: "At the same time it must be admitted that many, perhaps most, accidental murmurs depend upon relaxation of the heart muscle, weakness of the papillary muscles, failure of adjustment of the orifice, producing or permitting a relative insufficiency with reflux of blood and eventually with some degree of dilatation."

Clifford Allbutt²⁴ calls attention to a lecture by Donald MacLain, published in 1882, in which he called attention to the diminution in size of the auriculo-ventricular orifice in complete, normal contraction, this being incomplete in muscular atony, in anemia, chlorosis, etc. In this connection it may not be amiss to recall the fact that Potain has shown experimentally that, post-mortem, the mitral valve will withstand an intraventricular pressure high enough to rupture the wall of the ventricle. On the other hand, the safety-valve action of tricuspid valves is quite generally recognized. He says again, however, "I lean to the belief that the solution will be found in some altered relation between the blood and the walls of the vessels, especially the pulmonary artery and conus arteriosus; so that an excessive vibration of the walls takes place," thus harmonizing with the views of the etiology of arterial and venous murmurs, which he believes to be due to "vibrations in the walls of veins, due to changes in the caliber of the tube at the root of the neck."

Inasmuch as these murmurs occur chiefly in chlorosis and other anemias any light on the actual condition of the heart in these conditions will be of aid in diagnosis.

Allbutt²⁵ says, in speaking of chlorosis: "The blood-vessels are slackened in tone, the beat is feeble and diffuse." "There is an increase of dullness to the right but not to the left." "The influence of respiration upon the murmurs is not constant."

Anders²⁶ says, "In chlorosis the heart is dilated." But he also says, "Murmurs are not rare and are not necessarily dependent upon dilatation."

Osler²⁷ says, in regard to the heart in chlorosis: "There is a slight increase in the transverse dullness."

Taylor²⁸ says: "The heart is dilated." "There may be fatty degeneration of the heart muscle." He also quotes the opinion of Goodheart, who says: "In the several conditions of anemia, the base of the pulmonary artery is morbidly dilated beyond the caliber of the orifice." Vierordt says: "The heart may be dilated." Musser says: "There may be dilatation, fatty degeneration or hypertrophy."

The next point to be established is the boundaries of the precordial space. In the adult, the right border of the area of complete flatness is at the left border of the sternum. The apex is in the fifth left intercostal space, two inches to the left of the sternum, or about one inch

inside the nipple line. In children, at birth and even up to 9 years of age, the apex is at or, in some cases outside, the nipple line. The apex limits the area of cardiac flatness on the left.

DIAGNOSIS.

The diagnosis of a case of organic disease of the heart is based upon the history of the case, together with an examination of the patient. The former usually reveals some antecedent disease, such as rheumatism, gonorrhea or some other infectious disease, the valvular lesion being recognized as a consequence, while the examination discloses certain constant pathologic changes, such as hypertrophy or dilatation or both, caused by the increased work of the heart, consequent upon the obstacle imposed to the onward flow of blood. In the diagnosis of a murmur we determine its character, rhythm, point of maximum intensity, direction of propagation, and area of audibility. Let us apply these methods in the investigation of the accidental murmurs.

History.—The history is that of the malady of which the murmur is at once the sign and consequence. It is that of chorea, some form of anemia, primary or secondary, some toxic condition, as alcoholism, wasting diseases, overexertion, as in young, untrained athletes or raw recruits, the febrile state, or after the loss of a considerable quantity of blood. The patient is more likely to be young than aged, and also to be of the female sex. Inspection confirms the history.

Palpation and Percussion.—These methods are of extreme value and should always precede auscultation. They show that the pulse corresponds well with the character of the cardiac impulse and is often of higher tension than would be expected, due, as Sansom believes, to the stimulation of vasomotor nerves by retained waste products. Thrills may sometimes be palpated. The cardiac impulse is commonly feeble and diffuse, the apex is not sharply defined and may be slightly out to the left, but not downward. There may be a slight increase in the dulness to the right, but there is wanting the pulsation and the impulse of a hypertrophied right ventricle at the lower end of the sternum. The left ventricle is not hypertrophied. In a word, there may in some cases be evidence of some dilatation, even of broken compensation, but not of hypertrophy, at least as a consequence of the disease of which the murmur is a sign.

Character of the Murmur.—It is usually soft and blowing, but may be harsh and rough, and is subject to considerable variation. It is claimed by some that it is influenced by posture, being louder in the recumbent posture, and thus contrasting with organic murmurs; also that it is louder during inspiration, and that sometimes it may be caused to disappear by holding the breath. Vascular murmurs may be associated with it.

Rhythm.—It is almost always systolic in time. The only exception is the one which is auricular systolic in rhythm and probably of cardipulmonary origin.

Point of Maximum Intensity.—An organic murmur usually corresponds to one of the cardiac areas, commonly has associated with it definite lesions of those valves whose normal sounds are heard in those areas, and which it either accompanies, replaces, obscures or follows. Accidental murmurs may be heard at any orifice or in any cardiac area, but usually at the base of the heart, and in the pulmonary area in the majority of cases.

Balfour emphasizes the statement that the murmur of pulmonary stenosis is heard with maximum intensity in the second left intercostal space, close to the sternum, while the accidental murmur is heard an inch outside of

this, where Walshe claims that the auricle comes in contact with the chest wall.

Area of Audibility.—Here there seems to be the widest diversity of opinion. Some observers claim that these murmurs have a very limited area of audibility, while others, equally competent, maintain that they have a wide area of audibility. Thus Sansom²⁹ says: "They are sometimes loudest at the apex of the heart, conducted into the axilla and heard at the angle of the scapula." Mackenzie says, "It is remarkable how loud and harsh the murmurs sometimes are." Again Sansom says: "The murmur of anemia can answer to all the criteria of one due to regurgitation from organic causes." However, it seems generally conceded that the murmurs heard in the pulmonary area as well as in the aortic area are limited in their area of audibility, gradually fading away in the vessels.

DIFFERENTIAL DIAGNOSIS.

In the differential diagnosis, let us apply the method of exclusion. At the four cardiac openings, eight murmurs may be generated. They are either systolic or diastolic. Let us consider the latter first. A diastolic murmur is perhaps the rarest of accidental murmurs, and for practical purposes it needs only to be differentiated from mitral obstruction. This may lead to some confusion because of the fugacious character of the murmur. In organic disease, it occurs in early life, is caused by rheumatic endocarditis, is usually harsh, rough or purring in character, may be high in pitch and is abruptly terminated by a distinct shock, the ventricular impulse and the first sound; and there is a distinct interval of time between the murmur and the second sound. There may be all the evidence of broken compensation, with hemoptysis, hematemesis, and embolism.

The left auricle is hypertrophied, the right ventricle always shares in the cardiac changes, there may be palpable auricular impulse and thrill, suddenly terminated by the ventricular systole. The pulmonic second sound is accentuated. Arrhythmia is present late in the case, and ascites may be present. When this evidence is borne in mind, a diagnosis should present no difficulties. The accidental murmur of articular systolic rhythm is probably a cardiopulmonary murmur.

The second point in exclusion is that in any case in which it can be clearly demonstrated that holding the breath stops the murmur, we are justified in concluding that we are dealing with an accidental murmur. The latter do not modify the heart sounds. This leaves us for consideration only the systolic murmurs, viz: aortic stenosis and mitral regurgitation in the left side and tricuspid regurgitation and pulmonary stenosis in the right. Mitral and tricuspid stenosis are apical murmurs, while aortic and pulmonary stenosis are basal. Of course if a murmur is heard with maximum intensity at the base, we can exclude mitral and tricuspid regurgitation.

Aortic Stenosis.—The history is one of infectious disease, atheroma, or strain, commonly in adult or late life and of the male sex. The pulse may be small, the pressure sustained, and is in strange contrast with the powerful cardiac impulse. The apex is out to the left and down, the impulse is heaving and thrusting in character and usually well defined, the pulse tracing is characteristic, the enlargement is all confined to the left ventricle, the murmur is heard with maximum intensity at the aortic interspace, is often harsh and rough, may spread laterally, is the only murmur that may be audible at a distance, or that may be perceived by the patient. The murmur is always transmitted into the great vessels. With such a condition no confusion can possibly arise.

Pulmonary Stenosis.—This is one of the most common of congenital defects, and the rarest of acquired lesions. It is the most frequent site of accidental murmurs. When a congenital defect, there is a history of having been a "blue baby," there is some cyanosis, hypertrophy of the right heart, which may here take place without dilation, murmur and the characteristic physical signs.

In addition, "arrested development, bodily and intellectual, prominent eyes, thick lips, distended veins, enlarged liver, defective development of the genital organs, clubbed fingers, cyanosis, liability to epistaxis, hemoptysis, convulsions, headache, somnolence or insomnia." (Whittaker.)

There is a strong tendency or predisposition to pulmonary and general tuberculosis, only 15 to 20 per cent. reaching adult life (Sansom), this being in marked contrast with the comparative immunity conferred by most other valve lesions. In accordance with Pascal's law, the right ventricle is hypertrophied, and may be dilated as well. The degree of the dilation determines the character of compensation, and the latter the symptomatology. When pulmonary stenosis is acquired, and due to endocarditis, it is nearly always secondary to other valve lesions, and the history, symptoms and signs will be that of the antecedent disease and the consequent valve lesion, the last link being the affection at the pulmonary valves.

The murmur itself furnishes no clue. In differentiating between pulmonary stenosis and accidental murmur at the pulmonary area, consider the foregoing, and remember Bishop Butler's advice that "probability is the rule of life."

Tricuspid Regurgitation.—Tricuspid incompetence is now rightly regarded as the most common heart lesion, and the "safety valve" action described by King is quite generally accepted. It is also generally conceded that the tricuspid regurgitation is a relative insufficiency and beneficent in its action and results, saving the valves themselves from injury, and protecting the pulmonary blood-vessels from rupture, and not generally due to endocarditis of the right side of the heart. In these cases, resistance to the flow of blood through the lungs induces tension in the pulmonary artery, distension of the right auricle and ventricle, with incomplete closure of the right tricuspid valve. At each contraction of the right ventricle, instead of the blood flowing forward into the overcharged pulmonary artery, a portion of it flows backward into the auricle, the large veins become distended, the accumulation of the blood induces and is relieved by the tricuspid regurgitation. Tricuspid regurgitation follows disease of the left side of the heart, and especially of the mitral valves, as consequence upon cause. The history will be that of an affection of the mitral valves, an acute endocarditis, emphysema, bronchitis or overstrain, and the symptoms and signs of the latter will be present. Sibson says of it: "It is a friendly sign; it warns you of inflammation elsewhere and relieves the ill effects of that inflammation. It is a danger signal, and a brake lessening the mischief."

When tricuspid regurgitation follows left-sided disease of the heart, it must be dilated in order to permit the regurgitation and the signs will be those of dilatation with broken compensation. When due to an acute endocarditis, as of gonorrhoeal origin, the murmur is a mere incident and these cases need not concern us here. Likewise in chronic bronchitis and emphysema, the disease usually dominates the cardiac lesion.

The concurrent signs will depend on whether the case

is one of acute endocarditis, relative insufficiency together with the cause of the latter; that is whether a pulmonary or mitral lesion.

In the latter the heart must be dilated in order that regurgitation be permitted. It follows therefore, that there will be the signs of that condition. The dulness is to the right of the base line, the apex is displaced, but the apex-beat cannot be felt, as the dilatation of the right ventricle prevents the left from coming anywhere near the chest wall. The cardiac impulse is diffuse and weak and will be best marked near the left sternal border. There may be systolic venous pulsation in the external jugulars and systolic venous pulsation of the liver. In regard to heart sounds, Balfour says: "The pulmonary second sound is always accentuated, as the increased pulmonary congestion which causes and maintains the regurgitation also keeps up the accentuation."

It should be mentioned in passing, that this is true in those due to relative insufficiency, but not true of those cases of acute endocarditis affecting the right side of the heart. In these cases, there is no accentuation of the pulmonary second sound. The symptoms will depend almost wholly on whether the case is of relative insufficiency or of acute endocarditis.

The murmur is systolic in time and heard best in the tricuspid area. An accidental murmur having the rhythm and point of maximum intensity of a tricuspid regurgitation, would exhibit a history of one of the conditions with which it is commonly associated, such as anemia, chlorosis, chorea, etc., there would be no antecedent conditions, such as pulmonary obstructions or mitral disease, and there are no consequent changes in the heart, with the exception already noted. It is the belief of many that this murmur of tricuspid regurgitation is the one heard in most cases of accidental murmur, when audible over the body of the heart.

Mitral Regurgitation.—This is the commonest form of valvular defect and is so familiar that a mere reference to it is sufficient.

The history of rheumatism, the hypertrophied and dilated right heart, the apex out but not down, the augmented impulse in the compensated cases, the accentuated pulmonary second sound, the apex systolic murmur with its wide area of audibility, all make up a clinical picture too familiar to need enlargement. And yet right here will be found one of the greatest difficulties. To positively distinguish between an accidental apex murmur with slight dilation of the right heart, and a slight organic lesion of the mitral valves with perfect compensation, is at times a matter of extreme difficulty and may occasionally be impossible. When an apex systolic murmur is present, together with a history of anemia, chlorosis, alcoholism, overexertion or the febrile state, with absence of history of rheumatism or other infection, characteristic appearance of anemia, want of increased relative value of the pulmonary second sound, absence of hypertrophy of the right heart, and with a fair pulse tension, we are justified in assuming that organic mitral regurgitation is absent.

In the febrile state especially, I have observed cases in which there was an apex systolic murmur, enlargement of the percussion flatness to the right, relative accentuation of the pulmonary second sound, the murmur having all the characteristics of quality, rhythm, point of maximum intensity and area of audibility of an organic murmur with compensation damaged, the impulse diffuse and weak, and I have seen these cases proceed to a perfect recovery and disappearance of the murmur; and I cannot escape the conviction that these are

cases of true relative insufficiency of the mitral valve, due to weakness of the myocardium, the auriculo-ventricular opening not being sufficiently contracted to allow the valve flaps to close, or else the distended walls cause enough tension on the chorda tendinae to draw the edges of the flaps apart, preventing perfect closure, "retraction into the ventricle of the leaflets of the valves from dilation of the cavity, thus serving to increase the distance between the point of origin of the muscles and the normal meeting place of the leaflets of the valves."³⁰

These are the cases of so-called curable mitral regurgitation. A correct diagnosis cannot always be made until the patient is cured.

CONCLUSIONS.

1. Accidental heart murmurs may occur when there is neither anemia nor fever, as in certain forms of intoxication.

2. Accentuation of the pulmonic second sound may occur in accidental heart murmurs.

3. An accidental murmur may be diastolic in rhythm.

4. The term "accidental" should be employed to designate all those cardiac murmurs which cannot, after careful examination, be clearly demonstrated to belong to the organic class, it being clearly understood that as our knowledge extends and increases, the number of "functional" maladies gradually diminishes. The latter term is simply a cloak which covers up our lack of knowledge. True, the same may be said of the term "accidental," and yet there is this to be said in its favor; it commits us to no theory of causation, indicates no pathology, avoids a discussion of the question whether functional disturbances occur without pathologic change, and above all, it erects no barrier in the way of progress.

5. While I do not believe that we are perfectly acquainted with all the physical conditions that can give origin to either cardiac or vascular murmurs, and while the error may be one of either observation or interpretation, I incline to the view that no single theory can be made to reasonably account for all accidental murmurs. I believe that there may be a relative insufficiency of either the mitral or the tricuspid valves, due to incomplete contraction of the heart, the latter due to degeneration, fatigue, or the effects of toxic agents, as in pyrexia, alcoholism, etc., and that under these circumstances, the murmur may not vary in any of its essential characteristics of quality, pitch and intensity or in point of maximum intensity and area of audibility, from regurgitation due to organic disease at the same orifice. The vibrations accord with physical laws. Tricuspid regurgitation is probably of much more frequent occurrence than mitral.

6. The theory of Potain in regard to cardiopulmonary murmurs seems a reasonable explanation of some of the accidental murmurs.

7. In all cases of organic disease, the vibrations originate in the fluid blood, due to the formation of "fluid veins." The theory that the accidental murmurs originate in vibrations in the walls of the vessels or of the conus, and are communicated to the moving column of fluid, and so not carried by it, does not seem quite reasonable but might serve to explain the limited area of audibility of some of these murmurs.

8. The wide diversity of opinion in regard to rhythm, point of maximum intensity and area of audibility would seem to indicate careful, accurate observations improperly interpreted or else an attempt to explain all accidental murmurs by one theory.

9. In many cases, especially of apex systolic murmurs, or in those heard over the body of the heart, a cor-

rect diagnosis cannot always be made without awaiting the results of treatment.

BIBLIOGRAPHY.

1. Walshe: Diseases of Heart and Great Vessels, 3d ed., 1862.
2. Balfour: Diseases of Heart and Aorta, p. 218.
3. *Ibid.*, p. 272.
4. Stengel: Cleveland Journal of Medicine, May, 1898.
5. Hoover: N. Y. Med. Jour., Aug. 6, 1898.
6. Balfour: Diseases of Heart and Aorta, p. 221.
7. Allbutt: System of Medicine, vol. vi, p. 506.
8. Stengel: Cleveland Journal of Medicine, May, 1898.
9. Potain: Bull. Gen. de Therap., 1895, p. 307.
10. Solnier: N. Y. Med. Jour., May 20, 1899.
11. Talma: Berlin Klin. Woch., Nov. 21, 1898.
12. Winckler: British Med. Jour., April 29, 1899.
13. Sansom: Diseases of Heart and Aorta, p. 274.
14. *Ibid.*, p. 285.
15. *Ibid.*, p. 286.
16. Osler: Practice of Medicine, p. 794.
17. Gibson: Diseases of Heart and Aorta, p. 633.
18. Anders: Practice of Medicine, p. 649.
19. Musser: Clinical Diagnosis, p. 385.
20. Vierordt: *Ibid.*, p. 197.
21. Skoda: Auscultation and Percussion, Markham's translation, 1854, p. 23.
22. *Ibid.*, preface, p. 23.
23. Whittaker: Twentieth Century Practice, vol. viii, p. 299.
24. Allbutt: System of Medicine, vol. vi, p. 507.
25. *Ibid.*, pp. 504-507.
26. Anders: Practice of Medicine, p. 243.
27. Osler: *Ibid.*, p. 794.
28. Taylor: *Ibid.*, p. 747.
29. Sansom: Diseases of Heart and Thoracic Aorta, p. 340.
30. Hall, J. N.: Journal Am. Med. Assn., vol. xxxi, p. 175.

THE UTERINE FIBROID.*

WHAT SHALL WE DO WITH IT?

BY D. TOD GILLIAM, M.D.

COLUMBUS, OHIO.

If brevity is the soul of wit, it is also the essence of propriety on occasions like the present, where there is so much to say and so many to say it. But before going any further I wish to say that I have allowed myself a little latitude of expression, which it will be readily understood is not intended to detract from the dignity, nor question the motives, of that class of the profession of which I am an honored member, but rather to emphasize the points which I desire to make conspicuous. The question which appears as a caption for this paper has been asked many times before and as frequently answered according to the light and spirit of the times. Years ago, when hysterectomy and its allied operations were little less than the equations of death, the answer was: "Let it alone," and there were few who had the temerity to take up the knife in the face of hostile opinion. Then came the apotheosis of abdominal surgery. Old methods were revived, new methods devised, the death-rate was scaled down. Down, down, down, went the death-rate until, it would seem, there was no longer need of circumspection. A sudden revulsion seized the profession and was communicated to the people. The cry now went up: "Exterminate, exterminate!" and our mothers, wives and sisters moved toward the operating-table. In every land and clime men stood at the table. A knife was in every hand; on each table a woman. There was neither noise nor turmoil, nevertheless the knife went in and lives went out. It was a silent and stupendous tragedy! But many survived, and in surviving regained more than life. It was a blessed and broadcast beneficence! It was neither, it was both, we shall see by and by. At this stage a fibroid tumor to the surgeon was as a red flag to a bull; large or small, lobulated or smooth, it was odious to his senses and the signal for a furious, uncompromising onslaught. A diligent search was instituted for the

*Presented to the Section on Obstetrics and Diseases of Women, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

offender, and when one was found the unhappy possessor of it was doomed. From that moment her ears were assailed with the most harrowing and blood-curdling tales, and before her eyes a picture was held—a picture as black and revolting as ever came from the pencil of Doré, until at last the poor victim was fain to fly to the operating-table in sheer desperation.

This mighty crusade was not the offshoot of vice, neither did it betoken recklessness nor cupidity; it was the natural corollary of enthusiasm, an enthusiasm born of undreamed of success and grounded in the highest philanthropy. Was it a mistaken enthusiasm? Let us see: I give you two pictures taken from life. Mrs. P. discovers that she has a little menstrual disturbance, and being an intelligent woman, decides to call on Dr. X. for advice. Mrs. P. is a young matron of about four and thirty, and is the proud mother of two very interesting children. She has never had any sickness, in fact, has never been confined to her bed except at childbirth. She is well-formed, bright-eyed, rosy-cheeked, walks with a firm, elastic step, and enjoys a sense of perfect well-being. Dr. X. is a fashionable gynecologist, who commands a large following, does much surgery, and has an eye on the end of his index finger. In due time Mrs. P. is ushered into the cosy consulting-room and Dr. X. proceeds to explore the pelvis with that ocular finger. Suddenly he rolls his eyes upward, and with an air of extreme gravity says: "Madam I am sorry to inform you that you have a fibroid growth in the womb." "Do you think so, doctor? The doctor smiles, but deigns no reply. "Excuse me, Dr. X, I did not intend to question your skill, but the fact is I have been so well and felt so well all my life that it is hard to believe that there is anything much wrong." "Is it of much consequence?" "Of the utmost consequence." "What will have to be done?" is the anxious query. "There is only one thing to do and that is to remove the uterus." "An operation? I will never consent." "Wait until you have heard me. You evidently do not understand the significance of a uterine fibroid. You are well now, but it will not be for long. Soon you will be having hemorrhages and these will grow in volume and in frequency. Soon you will begin to suffer from pressure symptoms, the growth will impinge on and injuriously affect the bladder and the bowels. It will also press upon the ducts that carry the secretion from the kidneys. Later it will affect the liver, kidneys and stomach. The kidneys will become diseased, the heart will become diseased, the brain and nervous system become implicated, and not infrequently melancholia and insanity follow in the wake. When once these organic changes take place in these important organs there will be no redemption." "I will never consent; if I am to die, I will die a natural death, but I will never have an operation." "Very well; I felt it my duty to lay the matter before you, and now you have a duty which you owe to yourself and family which, unfortunately, I can not assume. It will not be long until your eyes are opened, but I cannot promise you that it will be in time. You will be tortured with pain and drained of blood, and will become distorted and unsightly, you will be tormented with a discharge which will not only make life miserable, but place a barrier between yourself and husband, you will grow old and haggard—" She puts out a hand appealingly and simply says: "I will go," but her lips are compressed and the color has fled from her face. In one week from that day she lies on the table, beautiful in her sleep. A red line followed the knife over the gentle swell of a faultless abdomen and

through the gaping wound the offending organ was removed. A little nodule not larger than a pigeon's egg marred the symmetry of an otherwise perfect specimen. In thirty-six hours there were two motherless children and a distracted husband. There was also desolation in one of the finest of homes. "Secondary hemorrhage" was the laconic inscription on the hospital card and the doctor took down his case-book and with a rueful face wrote in the result column a word of five letters.

But here is another picture. This time it is a woman of 43. She is not comely, whatever she may have been. She is the mother of three daughters—the eldest a girl of 20. They are poor. The patient is pale and almost cadaveric. She presents a marked abdominal protuberance. She spends much of her time in bed and has periods of flooding. In the intervals there is a profuse discharge of dirty serum. She has constant trouble with her bowels, is tormented with piles, and suffers much in many ways. Much of her little substance goes to the doctor, who, though poorly paid, is in almost constant attendance. She goes from bad to worse, though not continuously, for there are times when all the symptoms are abated. In one of these intervals she is induced to consult Dr. Y. Dr. Y. examines her in the presence of her family physician, and says: "Your doctor is right; this is a fibroid tumor. Furthermore it is of unusual size, is quite firmly impacted in the pelvis and is making serious inroads on your health." "But what am I to do; is there no help for me?" "I think there is. There are two roads open to us, either of which gives you a chance and both of which are attended with risk; one is to remove the growth, the other to leave it to Nature. In either event you will probably get rid of it, but, as I said, there is danger in both. On one hand you take the risks of a rather grave surgical operation, but should you survive you will be instantly and forever free from your affliction. On the other, if you should live until the change of life the growth will probably dwindle and in time cease to trouble you. But of this there is no absolute guarantee, and besides the change of life is often delayed by reason of the growth. It remains for you to choose." "I have chosen," she said composedly, "I want that thing taken away right off." A few weeks later, and just before the anticipated menstrual period, there was another table scene. Another red line followed the knife from epigastrium to pubis. A gaping wound disclosed an enormous distorted uterus. Deft fingers liberated adhesions, applied clamp and ligature, severed the attachments, and lifted out the mass. A month later this self-same woman returned to her home. The fires were bright on the hearthstone, but the fires of hope and joy and love were brighter in the hearts of that little group that gathered around it. A year later, and this poor, wan, suffering creature that we presented at the beginning has regained flesh and blood, health and good cheer and moved in and out among her family and friends, the happiest among them, for she had been in the depths and knew the value of life.

I cite one other case which gives us another phase of the subject. In this I shall use the first person, for there is neither that to be ashamed or proud of. The patient was a maiden lady of uncertain age, of magnificent physique and excellent mind. I found her with a fibroid of about the size of a pregnant uterus at the fourth month. I placed her on electricity, which I gave continuously and after the most approved method of the day. Despite this the tumor continued to enlarge; she had

a constant watery discharge and at intervals profuse hemorrhages. Besides, she suffered greatly from pressure symptoms. The tumor finally attained the dimensions of a seven-months pregnancy; all the symptoms became aggravated; she became exsanguinated, and of anxious countenance. I then suggested hysterectomy as the most feasible procedure, which she neither declined nor accepted, but continued to drift. She then passed out of my hands, but evidently went from bad to worse, as she was much of the time confined to her bed. After a few years she began to appear on the streets, and now she is taking an active part in club work, looks hale and hearty and has all the indications of perfect health.

What are the lessons inculcated by the illustrative cases just cited? We see in the first case the tragic taking off of a young and lovely woman, wife and mother through the overweening zeal of an overconfident gynecologist. In the next we witness the inestimable benefits from a timely operation in a bedridden woman whose social condition demanded immediate relief. In the last we are taught that even most unpromising cases may and do recover without operative interference. I claim that operative interference in cases like the first is unnecessary, unjustifiable and criminal. I am aware that in making this assertion I am stepping on somebody's corns, that some very good men take a very different view of the subject, and I am willing to accord to such honest convictions. But by far the larger number of the adherents to this policy is made up of beginners who are anxious to make a record and who are willing to take chances to further their ambitious designs. Last, there are a few, and I blush to speak of it, who are neither young nor inexperienced, who are neither wanting in skill nor intelligence, who recognize the unequal chances they are imposing on those entrusted to their charge, but who nevertheless enter the arena open-eyed and juggle with human life for the lucre there is in it. Of such is not the kingdom of heaven.

Specious arguments are adduced in favor of early interference.

It is claimed that the uterine fibroid is inherently dangerous; that aside from the distressing symptoms that attend pressure on contiguous organs, it leads to grave lesions of the kidneys, heart and brain; that the patient is in danger of fatal hemorrhage; that by sapping the vital powers it renders her an easy victim to intercurrent disease; that the fibroid growth is prone to degenerative changes and especially malignant degeneration; that it does not cease to take on growth at the menopause, but, on the contrary is apt to take on renewed vigor, and lastly, that the operation is attended with much less difficulty and danger in the earlier stages of its development. This would indeed be a specious, I might say unanswerable, argument if the premises were correct. In the first place, it cannot be shown that the uterine fibroid is naturally and inherently dangerous to life. If such cases were the cause of the mortality from this cause in times ago must have been appalling. Kolb says that 40 per cent. of the women who die after the fiftieth year are found to have uterine fibroids. According to this from one-third to one-half of woman-kind attaining to the age of 55 years must have perished from this source. Fatal hemorrhage from a uterine fibroid is one of the rarest of rare occurrences. One of our authorities—I believe it is Skene—claims that it seldom if ever occurs. I have never seen a case. Of the complications from heart and kidneys we have few instances of death, indeed it is a rare thing to see a woman die from uterine fibroid. I have been in the

practice of gynecology for many years, during which time I have had to deal with scores, yea hundreds, of cases of uterine fibroid in all stages and conditions, and I cannot now recall a single instance in which the victim succumbed to the growth or any condition attributable to the growth. Indeed, it has seemed to me that such patients enjoyed a peculiar immunity from life-destroying diseases. I have seen fearful hemorrhages, in which the patient was reduced to the last extremity, but she always rallied. I have witnessed mechanical obstruction to the bowels and bladder that threatened dire consequences, but in time they adjusted themselves, and the patient enjoyed a period of respite. I have seen the urine loaded with albumin, but have never known such to lead to a fatal issue. I have never seen one die of heart failure unless she had been on the operating-table. I have never attended one in whom death could be traced to malignant degeneration of the growth.

I did panhysterectomy for one case of enormous suppurating fibroid that must have inevitably died had she been left alone. I have removed several uterine fibroids that gave strong evidence of malignant degeneration, but these were rare as compared with the number of cases in which no such indications existed. I have seen very few cases in which the tumor continued to grow or showed increased activity after the menopause; on the contrary, I have seen many cases in which the retrogression was marked and continuous. I have seen many cases of smaller fibroids which never attained a size that gave the patient any concern. I have seen many others of various sizes that remained stationary throughout years of observation. On the whole, I have come to look on the uterine fibroid as comparatively innocent, in so far as its life-destroying propensities are concerned. I do not deny that it may, and sometimes does, kill. I do not deny that in its more aggravated forms it is capable of making life unbearable, but what I do contend for is that a very small proportion of the incipient fibroids ever attain to a size to give serious trouble, and that the growth is in a large measure self-limited. Were we to attempt to exterminate all the uterine fibroids lest they should grow and become complicated, we should have to unsex nearly one-half of woman-kind, and while we were doing this the tubal pathologist would demand the other half, and one generation would put a period to human existence. I do not know what the death-rate for hysterectomy is, but it must be vastly greater than that from the fibroid if left to itself. As a life-saving agency, therefore, we must abandon the knife except in rare and carefully selected cases. I am reminded that I held different views a few years since, and that in a paper read before the Mississippi Valley Medical Association at Detroit, I advocated a very different course. In reply I will say that the man who would not change his mind must cease to think. The changeless mind is the prerogative of fools and infallibility. But I have not changed so radically as might be supposed. I never advocated the removal of the unoffending fibroid. I did, however, go so far as to say that any fibroid that was a menace to life, health, or happiness should be removed. I do not retract that saying, but modify it. I have been in the practice of gynecology for many years, and have attempted to keep in touch with my fellow workers. I have read the same literature, discussed the same topics, have imbibed the same ideas, have been imbued with the same enthusiasm, have been actuated by the same aims and purposes. But I have also been in the same swim—

that turbulent, turmoil of waters that engages the whole soul and attention, that shuts out the horizon, the past and the future, and blinds the senses to all but that which is going on around one. In the midst of all a wail comes to my ears. It is the wail of a bereaved family, of husband and children. It is the wail of that family from whom was snatched in the full bloom of health one of the loveliest and most exemplary of wives and mothers. I pause, listen, think. I lift myself from the turbulent waters that I may collect my faculties, and now for the first time I get a bird's-eye view of the whole scene. If a man would see a battle he must not engage in it; rather must he withdraw himself to some commanding height where the eye can take a wide range. From this vantage-point I looked far backward into the remote past. I marshalled before me the hosts of women who had lived and died naturally despite the fact that many, very many, carried about with them uterine fibroids. I then cast my eye into the busy waters from which I had just extricated myself, and the words of Burns came to me:

O wad some power the giftie gie us,
To see oursel's as ithers see us.

What shall we say then; shall we lay aside the knife? By no means; in the future, as in the past, the surgeon's knife will continue to be afflicted woman's last and best friend. But the knife of the future must have a brain and a conscience behind it. What I contend for is greater circumspection and more conservatism on the part of the surgeon. Let the smaller and less mischievous growths alone. They may or may not give trouble in the future. Ten to one they will not, but if they should, it will be time enough to consider them when the exigency arises. Should you be called hence before that time, have no fear, for wisdom will not die with you, and the art of surgery will still survive. As you journey along life's path you will meet some cases, few though they be, which your judgment and experience will admonish you are inherently bad. In such it will be your privilege and your duty to urge and insist on radical measures. But in by far the larger number you will have no such assurance, and then you will be confronted with the ever-recurring question: "What shall we do with this uterine fibroid?" I hold that it is the patient's prerogative to decide. It is a right vested in the human race to incur risk for the betterment of condition. Men are continually taking such risks, and we regard them with complacency and commendation. They go down into the mines, climb steeples, grasp the throttle of the flying locomotive, toy with nitroglycerin, fight fire, brave the dangers of the deep, and in a thousand and one ways take their lives in their hands in order to better their condition or that of those dependent on them. Why, then, should woman be deprived of this same priceless privilege? Her sensibilities are more acute, her instincts stronger, her social relations closer, and her duties as imperative as those of man. But over and above all this, her capacity for loving and her yearning for love are beyond the comprehension of man, for with her love is the sum total of life. If, then, she finds herself a burden on those upon whom she is dependent; if life has become intolerable to herself and she feels that she is making it so for others; if by reason of deformity, irritability of temper, loathsome discharges, inability to perform her wifely duties, or any other cause, she finds that she has become a tax on her husband's forbearance or fortune, then I say she has a right to choose, even though that choice carries with it a degree of personal danger. And she, having chosen, knowing

the danger, it is your duty to give her the benefit of your experience and skill. The list will not be so long perhaps as under the present régime, but it will be long enough.

There is a wiser and better day coming, and succeeding generations will judge you by the light of that day. In that day your children or grandchildren will take up your musty old record-book and scan its pages. They will not appraise you according to the number of hysterectomies you have performed, but according to the character of your cases and the animus back of your work. Some will pore over long lists in which the cases mount into hundreds, but as they proceed their cheeks will burn, and should they hear an approaching footsteps they will cover the page with their hand. There will be other lists, be they long or short, which will be studied with interest and pride, and when at length they are finished the musty old book will be carefully laid on the shelf and the reader will turn away with the half audible exclamation: "Bless his old soul; he was honest." And, when life's race is run and you enter the pearly gates, which all of you will, except a few of my competitors, you will meet many scarred bellies, some of which will bear your private mark. Happy will it be for you if, in glancing over the list charged up to you, you shall find opposite each name the verdict: "Justifiable homicide."

DISCUSSION.

DR. WALTER B. DORSETT, St. Louis Mo.—This paper covers a good deal of ground and represents some very vivid pictures which possibly all of us have seen, particularly one of the first drawn, of a beautiful woman and child taken away from her family. The second case related by the Doctor is a picture we have seen occasionally, one we appreciate after having done the operation described by him, and one which gives us a great deal of satisfaction.

This question of the indications for operation for fibroid tumors is one that I have approached very cautiously and steadily, and I think we may sum it up possibly under three headings: The first is hemorrhage, which, of course, includes the dirty discharge coming away from the patient all the time, and that class of cases that are anemic, that have lost great quantities of blood, those in which the tumor has been supplying the life-blood of the patient possibly for several years. The next indication is that of rapidity of growth. Rapidity of growth usually indicates malignancy; it indicates cystic degeneration, or it indicates carcinoma. The third indication is the general inconvenience of the patient, or general discomfort of a patient who is suffering from fibroid tumor; those in which the digestive apparatus has been interfered with; those in which patients are suffering more or less from ptomain poisoning on account of constipation due to the mechanical interference with the rectum and the bowels, and those in which adhesions are formed. Many of us possibly have seen those cases in which, whether the tumor be intramural or subperitoneal, we find masses of adhesions. In a case of subperitoneal growth we will find the tumor largely nourished by adhesions. I have, in a number of instances, particularly in those cases where electricity has been tried and has failed, seen large vessels coming off from the omentum through which the nourishment of the tumor was undoubtedly kept up.

DR. C. R. REED, Middleport, Ohio.—I consider the management of fibroid tumors one of the most important subjects that comes within the province of the gynecologist. When a small fibroid tumor is discovered in the pelvis of an otherwise healthy woman whose life is not endangered and who seems to be comfortable, I do not think it wise to urge operation for its removal, nor do I think it prudent for the physician to inform the woman that she has such a fibroid. There are many women who have small fibroid tumors and do not know it. I think it is wrong to tell them that they have fibroid tumors, because the majority of women, after having received such information from the physician, magnify the effects from these growths and claim that they suffer when they really do not. If left alone, nine out of ten of these cases will gradually disappear. Let me give an instance that came under my observation; a woman of middle age, in a fair degree of health, of somewhat neurotic temperament, but well nourished, complained of some obscure symptoms. I made a vaginal examination and discovered a small fibroid tumor about the

size of a small egg. I doubted whether it had anything to do with her nervous symptoms; still, I incautiously and wrongfully told her she had a fibroid tumor. I should not have done it. She immediately magnified her symptoms, and thought she was an invalid and in danger of dying from it. She consulted a prominent gynecologist, who examined her, and said to her, "Madame, you have a fibroid tumor." She asked him how large it was, and he replied, "About the size of a cocoon," and added, "you will have to have it removed. You are in great danger, and after your next menstruation if you will come to my office, I will remove it for you." This was adding fuel to the fire. She was greatly depressed with the idea that she had to undergo an operation. She went to the hotel greatly depressed, and her husband said, "Let us consult Dr. Reed, we have known him for a long time. You have been under his treatment for your nervous symptoms." They did so, and I advised them to consult another practitioner, a man of great ability. This they did, and after a careful examination, he said, "Mrs. C, you have a fibroid tumor; it is as large as an orange, perhaps, or as large as the fist of a small hand; but it is not distressing or troubling you, and if you go to a hospital and rest for some time, you will go home better. Do not let this small tumor worry you." The woman said, "Doctor So-and-so told me that the tumor was as large as a cocoon, and advised me to have it removed." "Well," said the physician, "he is an operative gynecologist, and that is his business. You might expect such advice from him." The physician told her that he had known fifteen or twenty women who had had fibroid tumors, some of whom were operated upon, and died, and some of whom were not operated upon, and are still living. However, the woman went to the hospital, remained there for two weeks, and then came home. She has not been sick a day since. This was five years ago. She is now the picture of health. She has her opinion of those two physicians.

I have known cases similar to the one mentioned and which have come under my observation during the last twenty-five years, and the women have enjoyed a fair degree of health and are living yet.

The paper covers the ground very thoroughly; it is admirable. I wish to repeat that, when we discover a small fibroid tumor, and a woman does not know that she has it, it is our duty not to let her know it. She will be better for it; she will enjoy life better as long as the tumor is not menacing her health.

DR. W. A. TICHENOR, Chicago.—I have not very much to say with reference to this paper except to commend it. I think the Doctor has struck the keynote in outlining the cases that should, and those that should not, be operated on. I am free to confess that a number of cases have been operated on for the removal of fibroid tumors in which the entire uterus was extirpated, and, in all probability, in the present light of advanced surgery, they would have done just as well had they not undergone surgical operation. We all know that three or four years ago there was a craze for operating, but the pendulum is swinging back the other way, and we are occupied with a happy medium. We are learning better what to do, and we are acting accordingly. The Doctor spoke of the class of cases that should be operated upon, and clearly outlined the class of tumors that need hysterectomy. I do not believe he referred to myomectomy. I do not really know how many are doing that operation, but I do not believe it will become a very popular operative procedure. Tumors suitable for myomectomy are those the size of a hickory nut, a hazel nut, or a small orange, and are usually intramural or subperitoneal: They can be shelled out through the vagina. These tumors push their way from beneath the peritoneum covering of the uterus, and as soon as they get out from the uterine wall they carry the peritoneum with them. The indications for operating on intramural subperitoneal fibroids are pressure symptoms on the bladder or rectum, or hemorrhage. This character of tumor, on account of the form of its pedicle, does not cause much disturbance. When the tumor is submucous, it begins to interfere with the mucous membrane, pushing into the cavity and causing severe uterine contractions, which of themselves will cause hemorrhage. After awhile they may assume the form of polypi and you can twist them off. Then, there is the interstitial variety; the whole tumor is peculiar; it is soft, vascular, grows rapidly, and no kind of intrauterine local application seems to have any effect. It is more liable to cystic or malignant degeneration and bleeds freely. In a tumor of that character hysterectomy is the operation to do. I had occasion about five weeks ago to operate on a case that had seven small fibroid tumors the size of a guinea egg to a hazel nut, the case being complicated by an ovarian cyst. I removed the cyst; a competent surgeon was standing by, and I asked him about doing a hysterectomy or dropping the uterus back into

the abdominal cavity. He said, "I think you had better take the uterus out." As he was a man of considerable experience, I followed his advice, removed the uterus, and left the other ovary, which was normal. The patient did well, and has gone home. But I believe, if left to my own judgment, I should have left the uterus. In these cases I believe it is the consensus of opinion that if we leave some healthy uterine tissue we do not have excessive neurotic troubles follow.

The Doctor spoke of one case that went on to recovery in which he used electricity. He did not tell us if he continued its use until the patient got well.

DR. GILLIAM.—The patient passed from under my care, and I did not see her for probably a year.

DR. TICHENOR.—I do not know how much efficacy there is in electricity in the treatment of these tumors, but I am using it, although my experience is limited. I have a battery in the office; it looks well; it makes a good show, and a good many talk about it, and say it is a good thing; it makes a pretty piece of furniture. I have studied how to use the copper intrauterine electrode; I wrap cotton around it, saturated with copper salts or nitrate of silver salts, and by the cathaphoric action try to drive some of these salts into the tissues; the salts will harden the tissues, and thus prevent hemorrhage. I think in one case it benefited the woman, as she did not bleed as much. The swallow, however, does not make a summer.

DR. MILES PORTER, Fort Wayne, Ind.—I wish to thank Dr. Gilliam for having presented this matter. There is hardly anything in it with which I cannot entirely agree. This paper, together with what has been said in this Section before on the subject of uterine fibroids, coupled with the symposium on hernia, though widely different subjects, teach us important lessons. In connection with the treatment of fibroid tumors we are told by one that they should be removed under all circumstances, while another narrates cases with similar histories, in which he allows the tumors to remain, with the most happy results. This diversity of opinion amounts to this: there are no hard and fast lines which can be laid down even for the treatment of the simple cases that come into the hands of the surgeons. Each case is a law unto itself, and this is particularly applicable to the treatment of fibroid tumors. It is true, as Dr. Gilliam has remarked, that after the menopause hemorrhage is not to be feared as a general rule; yet singular as it may seem, the first fibroid I ever removed was taken away for the purpose of arresting hemorrhage which did not come on until after the establishment of the menopause. Again there are young women who are looking well, feeling well, who are the subjects of fibroids, but they do not care to carry protuberant abdomens. Such women consult doctors and desire to be relieved of their tumors. They say, "What are the chances, Doctor?" I believe a woman should be given an opportunity to have the tumor removed, if she so desires, but in giving her that opportunity the personal question comes in. To say to a woman that the mortality from the removal of fibroid tumors is so-and-so because of having arrived at that conclusion from the great bulk of cases reported is not giving the woman an answer which she deserves. She is going to Dr. Gilliam, to Dr. Porter, or somebody else to have the tumor removed and she is going to have it removed, and what she means when she asks that question of mortality is, what will be the probable mortality when you do this operation? It is unfair for us to give these women the general mortality from these operations, when, personally, our individual mortality may be only 2 or 3 per cent. The general mortality may be 10 or 15. So I believe the personal equation, in so far as it applies to the operator and individual upon whom you are going to operate, should enter into the decision of this question. After all, each case should be treated upon its merits, and the best one to judge of the merits of the case is he into whose hands the case is placed for treatment.

DR. J. D. GIBSON, Birmingham, Alabama.—I believe one of the gentlemen spoke of a case in which he thought the uterine fibroid was nourished by the use of electricity. He implied in his remarks that the original source of hemorrhage probably had been relieved by electricity and the tumor was nourished afterward entirely by peritoneal adhesions. I would like to know if it is customary, after the treatment of fibroids by electricity, for them to be nourished; those not treated by electricity, are they nourished by peritoneal adhesions?

DR. WALTER B. DORSETT, St. Louis, Mo.—I can give only my personal experience, and that is that all the cases that I have operated on which have been treated previously by competent electricians have had adhesions, and in some of them the adhesions were large, and doubtless in other cases the tumor was nourished principally by the adhesions. I operated on a physician's wife two years ago where an artery and vein came down from the omentum, nourishing the tumor. One of them was

large as the femoral; the other as large as the radial. In this case the tumor was undergoing degeneration. She had refused operation a number of times. She was treated by a competent physician for malarial fever; the plasmodium malarie were found, and the patient went from bad to worse, and finally I was called back, and the physician said: "Doctor, we are going to have an operation performed just as soon as she gets stronger. What do you think about it?" I said to him: "My dear friend, she will never be any stronger than she is to-day." She had a temperature of 102 when put on the table, and never had a temperature over 99.5 after operation. An abdominal section was made, the tumor removed, and it was found to be degenerated. There was pus found in the center of the tumor. This case was treated by electricity for five years off and on, one in which the principal amount of nourishment to the tumor came from the omentum and the bowel. It was a subperitoneal fibroid.

In regard to subperitoneal, intramural and submucous fibroids, I have this theory: These tumors are migratory to a certain extent. In other words, we may have at the beginning an intramural fibroid; later it becomes submucous or subperitoneal, and this changed condition is brought about by the peculiar construction of the muscular fibers, together with the contraction of the uterus incident to menstruation. By this mesh-like general distribution of the muscular fibers the tumor becomes changed, so far as its location is concerned. It is migratory. You can readily understand that, if you use the faradic current in a case of this kind, it produces contraction of the muscular fibers of the uterus, and while the tumor at the beginning of the use of electricity was possibly intramural, by chance, and by chance alone, it became subperitoneal. If it had been located in the beginning, it might have been found nearer the mucous than the peritoneal surface.

Dr. W. D. HAGGARD, JR., Nashville, Tenn.—The use of electricity undoubtedly gives rise to complications connected with fibroid tumors, particularly adhesions. I do not think Dr. Dorsett means to be understood as saying that all peritoneal adhesions, particularly the omentum, are due to electricity. Personally, I recall a case of huge fibroid, weighing thirty pounds, which had a pedicle nearly as large as one's three fingers, and the entire nutrition of the growth was derived from the omentum. Huge veins came down as large as fingers. This case was not treated by electricity at all.

Dr. GILLIAM, closing the discussion.—I wish to thank the gentlemen for their kind reception of my paper. I shall have very little to say in conclusion. I thought I made myself understood as well as I could considering the short time at my disposal. There are two or three points brought out in the discussion that I would like to explain. In the first place, I do not want to go on record as being opposed to operation for fibroid tumors.

I have done a great many of these operations, and I expect to do them in the future. I am opposed to unnecessary operations. An operation is more or less dangerous, no matter what we may say to the contrary. I tell a patient what I think her chances are, and in doing that I consider the personal equation Dr. Porter speaks of. If life is made unpleasant by the presence of a fibroid tumor; if she wants an operation done for its removal, I might probably advise her to have it done, but I do not insist on having it done. By this means I avoid taking upon myself the responsibility that would weigh heavily upon my conscience for the rest of my life. If she is determined to have an operation done, then I render her my best and most faithful service.

Dr. Reed spoke of one point that I desire to touch upon here. He said that women carry small fibroids, and if he finds them during the course of an examination he does not tell them anything about the matter. In the majority of cases a fibroid is going to be an incubus to the woman; it is going to make her unhappy, and there is danger of her drifting from one physician to another. You try to be honest; you give an honest opinion that you have discovered a fibroid. If you do not tell the woman this, if she is dissatisfied, she will consult another doctor. He will tell her that she has a fibroid, and urge its removal. By reason of the latter advice she either undergoes an operation or is so frightened that she will probably never get over the effects of it. Is it not much better to say to these women: "Madam, you have a little fibroid in the uterus; don't get frightened. These tumors are common; nearly all your neighbors have fibroids, and the reason I tell you is simply because somebody else will do so after a while and probably frighten you; the chances are it may not hurt you during your lifetime. If it should hurt you, consult some good conscientious surgeon, let him advise you in the case." When you speak to them in that way, they are armed for anything that may occur hereafter, and they do not worry about it.

A lady came to me a few weeks ago, who stands high; she is

a woman of brilliant intellect. I examined her and said, "you have got a little fibroid about so large." She said to me, "You told me that five years ago." I did not remember her. I do not remember the faces of my patients very well. However, she was going to Europe, and she felt a little uneasy. I happened to be writing my paper at this time, off and on, and I said to her, "let me read you a few lines of this paper, and explain some points to you." I read a little to her, and she was anxious to hear more, and before I got through her mind was relieved, and she left the office in a happy mood.

CATAPHORESIS IN TRACHOMA.*

BY GEORGE F. KEIPER, M.D.

LAFAYETTE, IND.

The word "cataphoresis" is derived from two Greek words.** The word "catalysis,"*** is often used synonymously with "cataphoresis," and incorrectly. Cataphoresis is a subdivision of the electrical process called catalysis. Cataphoresis, as now understood, is a process whereby medicinal substances are introduced into the body, through skin or mucous membrane or both, by the help of the galvanic current.

Synonyms.—Anodal diffusion, electric osmosis, voltaic narcotism, electric transportation, anaphoresis, electric medicament diffusion, and electric transfer of particles and liquids, are the synonyms in use.

History.—The process is not a new one, though it is attracting more attention to-day and has been for the last ten years, than ever before. Dr. B. W. Richardson, in 1859, wrote two articles on "Voltaic Narcotism." In October, 1858, after vainly trying to produce anesthesia in a rabbit's ear, by the electric current alone, he used a solution of morphin at the positive pole of the battery and succeeded in anesthetizing that organ. Then he used tincture of aconite at the positive pole with the same result. He used the following solution:

B. Tinct. Aconit.	3iii	3/90
Ext. Aconit. Aleh.	3i	1/30
Chloroform	3iii	3/90

He put the positive pole of the battery, wet with one-third of the above solution around the upper part of the shaven hind leg of a dog. The negative pole was applied to the ankle. Eleven minutes sufficed to produce complete anesthesia to sticking pins. Then the tendo Achillis was severed without pain. In one hour the leg was amputated without any pain, except when the bone was sawn through. Then the dog cried out once, but probably from terror. Twenty minutes later the dog ate heartily and walked around on three legs quite unconcernedly.

A nevus one inch in diameter was subsequently removed from the shoulder of a ten-weeks-old baby, after a half hour's application of a solution of chloroform and tincture of aconite, 5 drops each, applied to the positive pole. A strangulated hernia was also operated on by this method, and then a tumor of the shoulder on a patient 47 years old was removed, all of which were painless.

Richardson's work aroused a storm of opposition on the Continent and in England and for twenty-five years it lapsed into obscurity.

Wagner, in 1886, reintroduced the subject to the profession. Adamkiewicz, in 1886, described a diffusion electrode for introducing chloroform into the tissues. In 1889 Peterson called attention to Richardson's experiments and theory. Opposition and criticism again greeted its revival, but to-day it has all disappeared.

*Presented to the Section on Ophthalmology, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

**Kata, down, and Phoresis, to bear.

***Kata, down, and Aves, to loose.

Apparatus.—A good battery, say of twenty cells. For good results the plates must be clean and the zinc plate well amalgamated. The solution ordinarily used should be fresh. A switch-board in the commercial circuits is best.

2. A good milliamperemeter—the Kenelley or Weston are the best, because they are not influenced magnetically by the presence of iron in the immediate vicinity. The work previously done in this line has lacked scientific accuracy because the current has not been measured. No current should be passed through any person unless accurately measured. Many of the articles written speak of the use of from ten to twenty Grenet cells in producing the effects to be afterward described. This may mean much or little. If the battery fluid be old and nearly exhausted, or the carbon plates dirty and the zinc plate not properly amalgamated, and the connections poor and dirty, there will not be very much current, otherwise there will be. Hence there is no scientific accuracy in publishing results thus.

3. Proper conducting cords with proper tips for making connections between battery and electrodes and battery and milliamperemeter are essential.

4. Such electrodes as may be necessary. For forcing in solutions of drugs, the ordinary carbon electrodes of various sizes are best for ordinary use. Special ones will be described later.

5. Plenty of absorbent cotton to take the place of the dirty and filthy sponges now in almost general use on the electrodes is another necessity.

Theory of Cataphoresis.—If a vessel be divided into two distinct and separate compartments, by an animal membrane, and each side be filled to the same level, the one with a dense liquid and the other with one lighter in density, there will take place what is known as osmosis, whereby the lighter liquid will travel through the membrane to the denser. After a time the level of the denser will be higher than that of the lighter. Now, if the positive pole of the galvanic battery be placed in the denser and the negative pole in the lighter, the denser will be driven through the membrane into the lighter in direct opposition to the natural process of osmosis, i. e., the liquid travels in the direction of the current—from the positive to the negative pole. The effect is mechanical, for no decomposition takes place if carbon or platinum electrodes be employed.

Experiment: Take two porous cups and place them in a basin of water. Fill each to an equal height, with water. Put the positive pole of the battery in one and the negative in the other. Turn on the current and after a time the level of the water in the cup wherein is the negative pole will be higher than in the cup containing the positive pole. In fact the water will in a measure leave the cup containing the positive pole and its level may be lower than the surrounding water in the basin. Thus, with this simple experiment it is possible to make solutions travel in the direction of the electric galvanic current.

Physiology of the Process.—*Experiment:* Take a frog, keep its skin wet with a 2 to 5 grain solution of strychnin sulphate, and in a few minutes it will die of strychnin poisoning. The skin absorbs the strychnin. The skin of man and other mammals does not absorb substances readily because of the fat present in the epidermis and pores. Remove the fat with ether and the skin becomes more permeable. Massage, coupled with cutaneous medication, helps absorption by forcing the medicine into the pores. If the epidermis be removed either by abrasion, burn or blister, absorption will take place rapidly.

Experiments: Apply the positive pole of the battery to the back of the hand and the negative pole to the palm, and turn on a current of five milliamperes for from ten to twenty minutes. No anesthesia is produced.

Apply a 10 per cent. solution of cocain to the back of the hand and leave it there until the water is evaporated. Then apply more and thus continue the process until twenty minutes shall have elapsed. No anesthesia is produced.

Take a small carbon electrode, cover it with cotton and moisten it with a 10 per cent. solution of cocain. Attach it to the negative pole of the battery. Hold it on the back of the hand, grasping the positive pole in the palm thereof. Pass a current of five milliamperes for ten minutes. The result is no anesthesia, but hyperesthesia at the negative pole.

With the same electrodes as above, apply the electrode covered with cotton moistened with cocain to the positive pole. Put it on the back of the hand which grasps the negative pole in its palm. Turn on a current of five milliamperes for ten minutes, and the result is anesthesia to pain, touch and temperature.

H. Munk,¹ in a series of experiments found that he could as above introduce sufficient strychnin through the skin of a rabbit to cause it to die of strychnin poisoning in a few minutes. Quinin and potassium iodid introduced thus have been detected in the urine. What is true of cocain, quinin, strychnin and potassium iodid is also true of aconitin, mercuric bichlorid, guaiacol, metallic mercury (Massey), peroxid of hydrogen, sodium chlorid, morphin sulphate and lithium salts.

Peterson has thus summarized the physiologic action: "The galvanic current alone does not produce anesthesia at either pole, although the anode—positive pole—has a soothing effect over painful foci. A watery solution of cocain applied to the skin is not absorbed and does not produce anesthesia except, perhaps after an indefinite and long period. The same is true of chloroform and of an alcoholic solution of aconite. A watery solution of cocain is diffused through the skin and subcutaneous tissues by the anode, but not by the cathode. This is true of chloroform, aconite, strychnin, potassium iodid, corrosive sublimate, tincture of iodin and a number of other medicaments. Chloroform had better not be used this way unless a vesicant effect be desired. By this process a dermatitis is produced, the effect lasting for a week to ten days.

Haynes summarizes the effect of the direction of the current thus: "The galvanic current used to produce electrolysis on living tissues accomplishes results by utilizing three properties of current. 1. The chemical property into which the electricity is converted and manifests itself in the fluids and semifluids of the body contiguous to the electrodes—catalytic action; 2, the physical properties, due to the disintegration of the electrodes and the transference of substances through the tissues—cataphoric action; 3, the physiologic properties of the galvanic current as it produces trophic changes in the tissues."

In connection with this must be considered the solution of the electrodes themselves, and if placed at the positive pole the cataphoric action obtained by the solution of the electrode penetrating the tissues in the direction of the negative pole.

Experiments: Take a piece of fresh, juicy, lean meat, and put on one side a carbon electrode connected to the negative pole. To the positive pole attach a pure copper needle and insert into the meat; turn on the current. After a time on cutting the meat open around the needle an apple-green stain will be found. This is diffused in

the direction of the negative pole. Or, putting a blunt pure copper electrode on the surface of the meat, we get the very same stain. Chemical analysis of the stain shows it to be the oxychlorid of copper; it is a powerful germicide. In the reaction, HCl and H_2SO_4 and O have been formed, which, uniting with the copper, form the oxychlorid of copper, and this, being soluble, is diffused by the cathodic action of the current in the direction of the negative pole. It will also be seen that the needle used is difficult to withdraw after the current has been on. This is probably due to the albuminate of copper formed holding it fast. By reversing the current the needle can be easily withdrawn after a time. Not only is this true of copper but it is also true of iron, lead, zinc, and brass, which are readily soluble. Tin, silver and aluminum are less readily soluble. Carbon and gold are the least resistant of all the metals. Platinum and platinum with its alloy of iridium are not acted on at all!

THERAPEUTIC INDICATIONS.

For Relief of Pain.—In neuralgia, cataphoresis with a 10 per cent. solution of cocaine or cocaine with guaiacol, which is preferable, produces anesthesia which lasts from four to eleven hours electricity alone producing a transitory effect.

In tubercular laryngitis, by placing the positive pole wet with guaiacol on one side of the larynx externally, and the negative pole on the other side externally, relief from pain is usually prompt and the effect lasts about twenty hours. Guaiacol is to be preferred to creosote as being less irritating; in fact guaiacol is creosote deprived of its irritating properties. Lactic acid and eurentment may be abandoned.

"In cutaneous operations," Dr. Dawbarn writes, June 10, 1889: "I have recently . . . tried this method on a child's hand requiring suture of a severed tendon. The injury was an old one, and there was no wound before I made my incision. The anesthesia from 10 per cent. cocaine on the anode, continued with my chlorid of silver battery—twelve cells—for ten minutes, was very satisfactory."

In rheumatism and gout, at Edison's laboratory, a number of experiments have been made whereby lithium chlorid has been forced into the tissues. In an old man who had chronic uric acid concretions so that the joints between the phalanges were obliterated, by the cathodic action of lithium chlorid after twenty-five hours of total application the measurements made showed a distinct reduction in bulk. The pain was relieved and the patient's general condition improved. The 120-volt current was employed through proper resistance. The current strength was twenty milliamperes. Note that this is a very strong current for cataphoresis, five milliamperes is sufficient. The séance is generally five to fifteen minutes; the stronger the current the shorter the séance.

In gynecology cataphoresis is giving results which are gratifying.

In this connection permit me to bring to your attention a new method of treating affections of the tear-duct and lachrymal sac by the cathodic action of protargol. The cupped sounds are the ordinary Theobold probes in which at intervals of one-fourth of an inch cups are made into which the protargol in vaselin is placed. The probe is introduced in the usual way and after it is in place it is connected to the positive pole of the battery while the patient holds the negative carbon electrode in his hand. A current of five milliamperes is turned on and five minutes suffice to drive all the medicament out of the cups into the lachrymal passage. So far this

mode of treatment has given me better results than any I have heretofore tried.

Concerning the therapeutic indications of metallic electrolysis and the consequent cathodic action, much might be written. Massey, in a work just published on conservative gynecology, speaks of an original method of treating cancer by passing into its substance mercuric oxychlorid. He used gold electrodes into which the mercury is amalgamated by submersion. By using a large lead electrode, 12 by 20 inches, at the negative pole, he is enabled to pass through the cancer as high as 350 milliamperes. His theory is that the cancer cells possess less physiologic resistance to the interstitial attack than does normal tissue. In fact the cancer cells lose their viability without the normal tissue suffering necrosis.

In laryngology, and in tubercular laryngitis, the soluble copper electrode is of great value. The oxychlorid of copper is not only a powerful germicide but a powerful stimulant to resolution of the painful ulceration, but it is in the treatment of granulated eyelids that we have made the most distinct advance over the older methods of treatment, so that it is now possible to cure in months trachoma that would have otherwise taken many years.

In the *Ophthalmic Record*, October, 1898, after three years of earnest search for a more efficient remedy for this troublesome disease, was published a new treatment for trachoma which consists simply in the solution of a pure copper electrode in the substance of the lid, by the means of the galvanic current. The sulphate of copper pencil, which has always been our standby, produces but a superficial action. The oxychlorid of copper is a more powerful germicide than the sulphate of copper and besides it penetrates into the very substance of the granulations themselves, causing their absorption, without contraction of the eyelids. Some pain follows the operation, which is quickly allayed by the application of cold water to the closed eyelid. Three milliamperes of current are generally sufficient. When the communication was published it was supposed to be entirely new. But the wise man of Israel has said that there is nothing new under the sun, and I was chagrined at having my "discovery" disputed by Dr. Neiswanger of Chicago. Demanding his proof as to the priority of the discovery, he sent me copies of the *Alkaloidal Clinic* of three years ago, containing in a short paragraph his use of it on a Kansas physician's trachomatous eyelids before a clinic in the Post-Graduate Medical School of Chicago. But as the *Alkaloidal Clinic* is not read generally by ophthalmologists it never came to light in ophthalmic literature and was buried. However, it afforded me great pleasure in the succeeding number of the *Ophthalmic Record* to accord to Dr. Neiswanger proper credit for his priority in this valuable discovery.

In a communication to the American Electro-Therapeutic Association in 1894, Dr. W. J. Morton offered the following conclusions concerning metallic electrolysis.

1. The salts of many metals may be electrically dissolved from metallic electrodes, and at the same time be caused to permeate human tissue to a considerable depth. In the case of copper on dead tissue, with the current usually applied to living tissue, this depth is visible as an apple-green color, in the radius about the electrode of from one-fourth to one-half an inch; it probably invisibly extends much farther, shading off to a minimum.

2. The electrically formed and electrically diffused metallic salts are not destructive to tissue in the sense that ordinary electrolysis is; the effect is rather by the presence of a partially insoluble salt and by the effect of

a newly formed organo-metallic salt, denutritive or absorbing, on diseased tissue.

3. It would seem that these electrically-formed salts possess a selective affinity for diseased in preference to healthy tissue, or at least produce a more profound action on the morbid tissue, causing a favorable alteration in the nutrition of the part.

4. Electric diffusion is greatly superior to topical application, for the reason that the medicament is caused to penetrate the tissue acted on.

BIBLIOGRAPHY.

1. Landois and Stirling's Physiology, 2d ed., p. 489.
2. Peterson; International System of Electro-Therapeutics, 1894.
3. Massey; Conservative Gynecology, 1898.
4. Scheppegrell; Electricity in Disease of the Nose, Throat and Ear, 1897.
5. Beard and Rockwell; Medical and Surgical Electricity.

DISCUSSION.

DR. HUIZINGA.—As to the benefits to be derived from cupric electrolysis in trachoma, I believe that it deserves more than a passing notice. Taking for granted for the present that trachoma is the result of specific infection, and that the neutralization or destruction of this infection is a primary requisite for the cure of the trouble, it must follow that if cupric electrolysis will accomplish this it is a valuable remedy. To determine this factor I have made a large number of extensive and careful experiments in which a five-milliamper current was passed for five minutes through previously infected raw beef, the anode being an electrode made of pure copper. A piece of this electrolyzed beef was afterward placed in sterile solutions of bouillon and agar. If the excised piece was very thin, and taken from the place where the anode had been, it was found that the beef was completely sterile, thus showing that in the immediate vicinity of the anode the current passing through the copper electrode had distinctly germicidal properties. I believe a current of this kind will penetrate the conjunctiva and destroy or neutralize the cause of trachoma for about the depth or thickness of an ordinary inflamed conjunctiva, but no farther, and inasmuch as the cause of this disease may be deeply imbedded in the tissues, the usefulness of this form of treatment has its limitations.

I have estimated that the amount of copper deposited in the tissues is approximately 1-300 of a grain. This copper unites with the chlorine ions in the tissues to form the chlorid of copper. It is necessary, in order to get a maximum effect in a minimum of time, that the distance between the anode and the cathode should never be less than five inches. The reason for this is that the amount of chlorine ions between the two poles must be sufficient to meet any demands that may be made on them. To illustrate this I have repeatedly tried the following experiment: Two electrodes placed in raw meat at a distance of ten inches from each other, will dissolve one-eighth of a grain of copper wire in twenty minutes, with a voltage of 60, and an amperage of 20, while if the distance between these two poles was only three-quarters of an inch it required an hour to dissolve one-eighth of a grain of copper wire, with a voltage of 10 and an amperage of 20.

DR. L. HOWE.—At the last meeting of the American Therapeutic Society I presented a paper on an analogous subject, and in looking up the literature I found that Morton's book was the only one that contained any concise statements on the subject. I am somewhat surprised at the amperage mentioned, because one and one-half or two milliamperes will cause the patient to vince very decidedly, and three is painful in the extreme.

As to the electrode, we can get the same results by using instead of the solution of sulphate of copper, simply the crystal applied against the conjunctiva itself. In using solutions we must take into consideration that they are decomposed before entering the tissues. I have made the attempt to estimate the amount of substance which might be introduced into the globe in this way. I thought I could get the characteristic starch and iodine reaction without difficulty, and on several human eyes, just before enucleation, and in many rabbit eyes. I have applied the two electrodes with solution of iodine in various strengths and then turning on the current tested with the starch solution, but I could not get a trace of blue color. I know the amount was very small, but still I do not think there is proof that the solution enters the tissue in that manner.

DR. G. F. KEIPER.—DR. Howe spoke of the wincing of the patient. I think it is best to always use cocaine first, but still the patients will suffer some pain, and the most peculiar thing is that they have most of it after they leave the office.

Correspondence.

Medical Guild of the Misericordia.

WESTBORO, MASS., July 10, 1899.

To the Editor.—The Medical Guild of the Misericordia is a society of medical practitioners and medical students interested in the work of mercy for the sorrowing and suffering. The guild comprises an order of brothers and associate communicants of the Anglo-Catholic Church in every land, with priests as chaplains whenever their services are required. The relief it seeks to afford in corporal works of mercy is: To feed the hungry; to give drink to the thirsty; to clothe the naked; to rescue the fallen; to visit the prisoner; to shelter the stranger; to visit the sick, and to bury the dead.

Members of the guild obligate themselves to engage in any or all of the above works whenever occasion offers, and to consider it their especial duty to watch for opportunities for so doing. In a word, the object of the organization is to impress on and keep before the minds of its members the duty of doing works of mercy, both corporal and spiritual, whenever it is possible.

Wherever there is suffering there is our opportunity. The emblem of the order is the crucifix, on the reverse arms of which appears the word "Misericordia." The skull and bones and words *Memento Mori* also are used as emblematic of the fraternity. The girle of the guild is of purple silk cord with seven knots and seven silver beads, and is to be worn always, day and night the same, and around the shroud in death. In the impressive ceremonies attending membership, the candidate pledges himself with God's help that he will faithfully strive to carry out, with charity, humility and fortitude, all the public and private intentions of the Guild, and to preserve in secrecy all the works of mercy which he may be permitted to perform. He also pledges himself that he will not disclose the names of the members of the Misericordia.

We are glad to welcome to membership all who desire, for any cause, to devote the remainder of their lives to deeds of charity; all—rich or poor, saint or sinner—those whose hearts have been touched by sorrow or misfortune or who, through charity, seek to offer help to sufferers—"Darkened by shadows of earth, yet reflecting the image of heaven." Sincerely yours,

W. TH. PARKER, M.D.

A National School of Tropical Medicine.

St. ANNE, Ill., July 15, 1899.

To the Editor.—With the "Stars and Stripes" flying over the Hawaiian Islands and our new possessions abroad since the termination of the war with Spain, has not the time arrived for a more thorough and systematic teaching in our medical schools of the etiology, pathology, symptoms and treatment of tropical diseases? Returning from the west coast of Africa, last April, I was delighted to learn of the energy being displayed by the Liverpool School of Tropical Diseases, and knowing, from personal experience, what a terrible havoc malarial fever causes among the white settlers in western and equatorial Africa, and realizing how the troops and citizens in our new possessions will have to face not malaria alone, but other diseases peculiar to warm climates, I venture to advocate a more thorough course in all diseases pertaining to the tropics.

Many of the future graduates from our medical schools will take service in either military, naval or civil life in our new possessions; and the preference will undoubtedly be given to those best versed in tropical diseases. Not only would I advocate a special chair for teaching the subject of tropical medicine in every medical department of state and private institutions, but also the formation of a government school of tropical medicine, having well-fitted laboratories for research and original work. Physicians residing in tropical lands would doubtless be only too glad to collaborate with such a school, and give it the benefit of their experiences and material obtained on the spot.

Soldiers and others invalidated home would often furnish valuable clinical material. Future graduates in medicine will then be able to go forth from their college with such an intelligent understanding of tropical diseases as to justify their acceptance for service in our foreign possessions. Respectfully,

ALBERT L. BENNETT, M.D.

Presbyterian Mission, Angom, Congo Francais.

The Hopelessly Insane.

WAUWATOSA, Wis., July 13, 1899.

To the Editor.—Your journal does me an injustice in reporting a paper (JOURNAL, xxxii, p. 165) read by me on "Contagion and Infection in Nervous and Mental Diseases," at the late meeting of the American Medico-Psychological Association in New York. Your words are, "Incidentally he advocated the somewhat radical measure of judiciously ending the lives of the hopelessly insane." It would scarcely be necessary to explain that this was an error to those versed in these matters, but as many readers may be misled, I wish to say that in my paper I proposed to inquire whether various radical measures frequently advocated, among them electrocution for incurable insane, castration, etc., were practicable measures and the conclusion at which I arrived, distinctly given in my paper, was that such measures were not practicable. Please make this correction and oblige, Yours truly,

RICHARD DEWEY, M.D.

A Novel Device.

MEMPHIS, TENN., July 11, 1899.

To the Editor.—In answer to the letter of Dr. W. H. DeWitt of Cincinnati (JOURNAL, June 17, p. 1378), I would say that the "cotton capsule" is a well-known and much-used expedient for getting gastric juice. It was first used, I believe, by Max Einhorn.

WM. KRAUSS, M.D.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Annals of Surgery (Phila.), July.

- 1.—"Technique of Laryngectomy." W. W. Keen.
 - 2.—"Surgical Anatomy of Bile-ducts and a New Incision for Their Exposure." Arthur Dean Bevan.
 - 3.—"Comparison of Merits of Suprapubic and Perineal Cystostomy." Nathaniel P. Dandridge.
 - 4.—"Observations on Volvulus, with Report of Three Cases Submitted for Operation." Elwood F. Felt.
 - 5.—"Inflammation of Bursa Gastrocnemio-semimembranosa, with Report of Four Cases of Enlargement and Distension of this Bursa Treated by Excision." Forbes Hawkes.
 - 6.—"Importance of Blood Examinations in Reference to General Anesthetization and Operative Procedures." Hamilton Fish.
- University Medical Magazine (Phila.)*, July.
- 7.—"Diagnosis of Nervous Syphilis." Chas. W. Burr.
 - 8.—"Remote Results in Artisan's Palsy." F. Savary Peary.
 - 9.—"Description of Adjustable Bracket for Reid Ophthalmometer." C. A. Oliver.
 - 10.—"Resection of Portion of Sigmoid Flexure for Cure of Recurrent Carcinoma." Edward Martin.
 - 11.—"Bilateral Swelling of Submaxillary (Salivary) Glands in Typhoid Fever, without Enlargement of Parotids." D. J. Milton Miller.
 - 12.—"History of Medicine." David Riesman.
- Journal of Boston Society of Medical Sciences*, J. G. Hubbard.
- 13.—"Color Screens" as Applied to Photomicrography. J. G. Hubbard.
 - 14.—"Examples of Application of 'Color Screens' to Photomicrography." James H. Wright.
 - 15.—"New Spore-Producing Bacillus." F. P. Denny.
 - 16.—"Relation of Depressor Nerve to Vasomotor Center." W. T. Porter and H. G. Beyer.
 - 17.—"Relation of Dextrose to Toxin Production of Diphtheria Bacillus." Theobald Smith.
 - 18.—"Physiologic Action of Extracts of Lymphatic Ganglia." Allen Cleghorn.
 - 19.—"Origin of Eibrinogen." A. Mathews.
- Journal of Cutaneous and Genito Urinary Diseases*, July.
- 20.—"Report of Case of Sclerotic Narrowing of Meatus." G. K. Swinburne.
 - 21.—"Case of Erythema Induratum des Serofolus of Bazin, with Microscopic Findings, Showing Its Non-Relationship to Tuberculosis." Charles T. Dade.

22.—"Erythema Induratum and Necrotic Granuloma in Same Subject." Jas. C. Johnson.

Louisville Journal of Surgery and Medicine, July.

- 23.—"Syphilitic Stricture of Rectum: Two Cases with Operations." A. B. Cooke.
- 24.—"Use of Chloroform in Labor." W. B. Gossett.
- 25.—"Hygiene of Vision: Readable Print." Wm. B. Meany.
- 26.—"Peculiarities in Heart Affections in Children." P. F. Barbour.
- 27.—"Cerebrospinal Meningitis: Report of Case." L. C. Royster.
- 28.—"Vaccination and Revaccination." S. T. Payne, Jr.
- 29.—"Report of Case of Triplets." J. Louis Early.

Medical Standard (Chicago), July.

- 30.—"Gastro-intestinal Antiseptics." James Mills.
- 31.—"Treatment of Appendicitis, with Rule for Determining which Cases Require Operation." G. D. Ladd.
- 32.—"Girdiron Splint" for Compound Fractures with Laceration. W. B. Morrison.
- 33.—"Post-operative Hernia." F. Shimonek.
- 34.—"Throat Cough." James A. Bach.
- 35.—"Technic of Ether and Chloroform Anesthesia." Aime Paul Heineck.

Medical Dial (Minneapolis, Minn.), July.

- 36.—"Diagnosis and Therapeutics of Diphtheria." L. A. Nippert.
- 37.—"Physician from Patient's Standpoint." Wm. E. Thompson.
- 38.—"Extra Uterine Pregnancy." L. W. Day.

North Carolina Medical Journal (Charlotte), July 5.

- 39.—"Progress in Serumtherapy." Chas. S. Mangum.
 - 40.—"Ectopic Pregnancy." J. W. Long.
 - 41.—"Case of Tumor of Brain, Symptomatically Relieved by Exploratory Operation in Skull." W. B. Pritchard and Jno. A. Wveth.
- Atlanta (Ga.) Journal-Record of Medicine*, July.
- 42.—"Appendicitis: from Standpoint of Country Doctor." A. C. Davidson.
 - 43.—"How Can Spread of Scarlet Fever and Diphtheria be Prevented in Public Schools?" Gilman Robinson.
 - 44.—"Necessity of State Pediatric Society." O. B. Bush.
 - 45.—"Case of Chronic Pachymeningitis following Course of Superior Longitudinal Sinus, and Apparently the Result of Chronic Syphilitic Rhinitis." E. R. Corsou.
 - 46.—"Note on Treatment of Malignant Neoplasms by Electricity." J. McF. Gaston.

Southern California Practitioner (Los Angeles), June.

- 47.—"Hemorrhoids." R. J. Parker.
- 48.—"Plea for Conservatism in Hecyctology." F. C. E. Matison.
- 49.—"Tooth in Nasal Cavity." Hoell Tyler.
- 50.—"Constipation." Wellington Burke.
- 51.—"Posture in Reading." Fred Baker.
- 52.—"Plea for More Careful Treatment of Middle Ear Inflammations." W. D. Diworth.
- 53.—"Otology and Rhino-laryngology—up to Date." B. F. Church.
- 54.—"Purification of Drinking Water." H. Shafer.

Canadian Practitioner and Review (Toronto), July.

- 55.—"Hyoscin." J. T. Fotheringham.
- 56.—"Surgical Necrology Among Insane: Right or Wrong." A. T. Hobbs.
- 57.—"Use of Rubber Splints in Treatment following Intranasal Operations." J. Price-Brown.

Surgical Intervention in Cases of Spasms Paralysis. R. E. McKenzie.

Criminals and Their Characteristics. J. H. McCassey.

Journal of Miss. State Medical Association (Biloxi), July.

- 60.—"Depopulation of Towns Infected with Yellow Fever; a Prophylactic Measure and Business Proposition: Time and Method." H. H. Harlson.
- 61.—"Mild Type of Infectious Diseases, with Especial Reference to Yellow Fever and Smallpox; Results of Modern Public Hygiene." H. H. Harlson.
- 62.—"Quarantine: Unity of Medical Profession Essential to its Enforcement." Robert E. Jones.
- 63.—"Case of Compound Comminuted Fracture of Ulna and Radius with Suture of Two Flexor Tendons." P. L. Bellinger.

Plexus (Chicago), June 20.

- 64.—"Results of Widal's Test in Diagnosis of Typhoid Fever from Dried Blood Specimens." Adolph Gehrmann.
- 65.—"Epidermatization Surgically Considered." Weller Van Hook.
- 66.—"Method of Using Protargol in Gonorrhoea." J. Stephen Nagel.
- 67.—"Rapid Method of Paraffin Imbedding." S. H. Champin.

Memphis Medical Monthly, July.

- 68.—"Medical Legislation." Wm. Krauss.
- 69.—"Fever of Mountains of East Tennessee." H. C. Chance.
- 70.—"Intubation of Larynx in Laryngeal Diphtheria or Pseudomembranous Croup." Richmond McKinney.
- 71.—"Clinical Report of New Remedy in Treatment of Gonorrhoea." Edwin Williams.

Indiana Medical Journal (Indianapolis), July.

- 72.—"Choreic Movements." W. B. Fletcher.
- 73.—"Investigation of Digestive Activity of Stomach." Alois B. Graham.

Medical and Surgical Bulletin (Nashville, Tenn.), June.

- 74.—"Epidemic Cerebrospinal Meningitis." K. S. Howlett.
 - 75.—"Eclampsia." W. E. Haraway.
- Richmond (Va.) Journal of Practice*, June.
- 76.—"Treatment of General Suppurative Peritonitis." Stuart McGuire.
 - 77.—"National Formulary." M. D. Hoge, Jr.

Fort Wayne (Ind.) Medical Journal-Magazine, June.

- 78.—"Transient Paraplegia and Tetany, of Gastric Origin." G. W. McCaskey.
- 79.—"Doctors and the Law." L. H. Wrigley.

- 80.—Remarks on History of Indiana State Medical Society. W. H. Wislard.
- 81.—**Southwestern Medical Record (Houston), Texas, June.**
- 81.—"Summer Complaints of Children. W. H. Allen.
- 82.—Diarrhea of Infants. A. H. Seienck.
- American Medical Compend (Toledo, Ohio), July.**
- 83.—Venesection in Pneumonia. John North.
- 84.—Studies in Epithelium. D. E. Haas.
- 85.—Circumcision. H. Bamberger.
- Chicago Clinic, June.**
- 86.—Nephrolithiasis. A. H. Cordier.
- 87.—Medical Jurisprudence. Jos. Daily.
- 88.—Tuberculosis in Monkeys. W. A. Evans.
- 89.—Saturday Lessons in Neurology. H. N. Moyer.
- 90.—How does Cause of Disease Produce Disease. G. M. Russell.
- 91.—Autointoxication. E. Sturver.
- Medical Fortnightly (St. Louis), July 1.**
- 92.—Curative Effect of Tapping in Atrophic Cirrhosis of Liver. Treatment of Septicæmia; of Chronic Intestinal Catarrh; of Epilepsy; Typhoid Fever in Child. Case of Hypertrophic Cirrhosis. H. A. Hare.
- 93.—Significance of Hallucinations of the Dying. W. J. Chenoweth.
- 94.—Treatment of Diabetic Mellitus. R. C. Kenner.
- 95.—Scattered Lights on Tuberculosis among Negroes. Wm. Stankley.
- 96.—Sidelined Leaves from a Physician's Diary, No. 7. Albert Abrams.
- Columbus (Ohio) Medical Journal, June 27.**
- 97.—"Aortitis. Chas. F. Hoover.
- 98.—"Digitalis and the Heart. Geo. M. Waters.
- Cincinnati Lancet-Clinic, July 15.**
- 99.—Case of Lichen Ruber Acuminatus. Edwin S. Shields.
- 100.—"Importance of Recognition of Certain Chemical Blood Changes, and Especially Toxæmia, in our Therapeutics. John V. Shoemaker.
- Maryland Medical Journal (Baltimore), July 15.**
- 101.—"Nostrums. H. C. Wood.
- New York Medical Journal, July 15.**
- 102.—"Nature of Xanthomata. S. Pollitzer.
- 103.—"Relation of Ophthalmology to General Medicine. G. Griffin Lewis.
- 104.—"Some Aspects of Chronic Malarial Infection and Their Treatment. W. H. Thomson.
- 105.—"Phthisis: Its Etiology and Treatment. George D. Barney.
- 106.—"Term Appendicitis, etc. R. Ellis.
- 107.—"Why Fumigation of Apartments Occupied by Tuberculous Patients at Health Resorts Should Be Under Municipal Control. Charles F. McGahan.
- Philadelphia Medical Journal, July 8 and 15.**
- 108.—"Advice to Gonorrhœal Patients. Ferd. C. Valentine.
- 109.—"Electric Heating Applied to Steam Sterilization and Production of Dry Hot Air for Therapeutic Purposes. Charles Lester Leonard.
- 110.—"Membranous Laryngitis. George B. Kail.
- 111.—"Further Notes on Case of Malta Fever; a Study in Serum-Diagnosis. John H. Mueser and Joseph S. Sailer.
- 112.—"False Tonsils. Robert N. M. Dawbarn.
- 113.—"Large Diffuse Lipoma of Neck; Operation; Recovery. J. Shelton Horsley.
- 114.—"Lectures on Orthopedic Surgery. John Ridlon and Robert Jones.
- 115.—"Pathology of Catarrhal Deafness. Frank Whitehill Hiukel.
- 116.—"Treatment of Eye and Ear in Cerebrospinal Meningitis. William Cheatham.
- 117.—"Variations in Manifestations of Malaria. Charles Dewey Center.
- 118.—"Treatment of Certain Typhoid Fever Cases at U. S. General Hospital, Fort Monroe, Va. Carl H. Andersen.
- 119.—"Fatal Case of Infantile Scoury; Autopsy. Anthony Bassler.
- Boston Medical and Surgical Journal, July 13.**
- 120.—"Medicine as a Profession. W. B. Platt.
- 121.—"Etiology and Diagnosis of Cerebrospinal Fever. Wm. Oeler.
- 122.—"Examinations of Stained Specimens of Blood in Its Application to Clinical Work. Henry F. Hewes.
- 123.—"X-ray Examinations in Children. Francis H. Williams.
- Medical News (N. Y.), July 15.**
- 124.—"Treatment of Summer Diarrhea in Infants. H. D. Chapin.
- 125.—"High Altitude and Heart Disease. Robert H. Babcock.
- 126.—"Cystitis: Its Cause and Treatment. George T. Howland.
- 127.—"Case of Placenta Previa. Charles A. Helvie.
- Medical Record (N. Y.), July 15.**
- 128.—"Some Points in Symptomatology, Pathology and Treatment of Diseases of Sinuses Adjacent and Secondary to Orbit. Charles Steadman Bull.
- 129.—"Some Remarks on Chronic Bright's Disease. Arthur R. Elliott.
- 130.—"Preparings for the Knife in European Hospitals. J. Preston Miller.
- 131.—"Relations of Cardiac Murmurs to Events of Normal Cardiac Cycle. Warren Coleman.
- 132.—"Treatment of a Supposed "Kissing-Bug" Wound, followed by Prompt Recovery. F. A. Burrall.

AMERICAN.

1. See abstract in JOURNAL, June 10, p. 1312.
2. **Surgical Anatomy of Bile-Ducts.**—Bever calls attention to the error in description by Fenger, in the anatomy of the bile ducts, in placing the portal veins in front of the hepatic ducts and over the upper portion of the common ducts. His incision was described in the JOURNAL, June 26, 1897, p. 1225.
3. See abstract in JOURNAL, April 22, p. 882.
4. **Volvulus.**—This article is a discussion of the whole sub-

- ject of volvulus and its treatment, with reports of three cases.
5. **Inflammation of Bursa Gastrocnemio-Seminibræ-nose.**—Remarking that inflammation of this bursa is probably frequent, and on the rarity of recorded instances in the literature, Hawkes describes its anatomy, etiology, diagnosis, and the operation for its cure, as the excision is the only plan which he thinks advisable when a radical cure is expected, unless it be in syphilitic cases. The details of the operation are given with such fulness that we must refer the reader to the original article. Four cases are reported and a bibliography given.
6. **Blood Examinations in Anæsthesia.**—The following are the conclusions of Fish's paper: Safety in anæsthesia and operative procedures is dependent on a hemoglobin percentage over and above that required for the performance of its normal duties, and a normal or increased number of polymuclear neutrophils. Under these conditions anæsthesia may be produced, and operative procedures conducted with assurances of perfect safety.
7. **Diagnosis of Nervous Syphilis.**—Burt's paper discusses the general symptoms attending nervous syphilis, such as the suddenness of serious complications, headache, insomnia, the fleeting nature of certain symptoms, etc.
8. **Remote Results of Artisan's Palsy.**—Pearce divides occupation palsies into three classes: muscular cases due to over-volunt use of muscles; the neuritic type, consisting of a peripheral neuron irritability which may pass over to a subacute neuritis; the arterial cases associated with arterial or capillary involvement. The first type is hopeful as to cure, the second serious, but still hopeful, and the last form rather persistent. With the first class, stop the cause and recovery will quickly follow. In the second, if the central nervous system is not involved, the cases are not unpromising. He believes that a larger proportion of all cases recover than has perhaps been generally recognized.
9. **New Spore Producing Bacillus.**—Denny describes a bacillus obtained from sputum sent for tubercle bacillus examination. The patient died some months later, probably from a general tuberculous infection. A similar bacillus has been isolated by Dr. Hopkins, from the mouth of a healthy individual, and he is of the opinion that it is not an uncommon mouth-dweller, but neither he nor Denny has been able to identify it with any form heretofore described. It resembles the bacillus subtilis in many respects, but is broader, has a larger number of flagella, its growth on agar is more rapid and free, the spores are less resistant to heat, and the serum of animals inoculated with this bacillus does not give a clumping reaction with bacillus subtilis. A striking peculiarity of this bacillus is that well-marked clumping action was obtained with the serum of guinea-pigs which had been inoculated with its bouillon cultures, especially in connection with the fact that it is not pathogenic.
10. **Relation of Depressor Nerve to Vasomotor Center.**—It has been thought that the fall of the blood pressure, seen when the central end of the depressor nerve is stimulated, is due chiefly to the dilatation of the abdominal vessels through the splanchnic nerve, or, in other words, that the depressor nerve was connected with the vasoconstrictor fibers of the splanchnics in a different way from its connection with other vasomotor fibers. To settle this question, Porter and Beyer experimented by separating the splanchnic nerves and watching the effect of depressor stimulation. The fact that the separation causes so great a fall in blood pressure that quantitative measurements of vasomotor effects were embarrassed, was overcome by stimulation of the separated ends of the splanchnic nerves until the blood pressure again rose to the normal, then electrically exciting the depressor nerves. Numerous experiments by this method showed that the fall of blood pressure caused by depressor stimulation does not especially diminish after exclusion of the splanchnic area. The fall observed under other conditions, therefore, is not due especially to the dilatation of the abdominal vessels, and consequently there is no reason for supposing that the depressor nerve has special connection with the bulbular cells through which the splanchnic fibers receive their constrictor impulses.
11. **Influence of Dextrose on Toxin Production.**—In this preliminary note Smith notices the fact that it has been generally held that the varying and disappointing actions of diphtheric toxin, obtained from cultures made from beef bouillon

in the usual way, are referable to the presence of muscle sugar, which is promptly converted into acids by the bacillus. He has modified the method of Stronek for meeting this trouble, by causing fermentation of the beef. In further experiments for concentration of the toxins he found that dextrose could be added to bouillon from which the muscle dextrose had been removed, with the result of actually favoring the accumulation of toxin, and the details of this discovery will appear in a forthcoming article. He does not explain this difference between the reaction of muscle dextrose and the dextrose introduced in this way, but gives some of his experiments and conjectures in regard to it. He remarks that the difference in the toxicity of bouillon cultures prepared in different ways should make bacteriologists cautious in claiming actual increase of virulence when such increase may depend entirely on the environment and may be modified by changing the medium. In comparative tests of toxicity, only guinea-pigs raised under the same conditions should be used. Animals from certain sources may be twice as susceptible as those from others.

19. **Origin of Fibrinogen.**—Mathews concludes, from his studies, that fibrinogen is derived from the decomposing leucocytes, chiefly those of the intestinal area. It possibly corresponds to that constituent of the body of the leucocyte which falls into a fibrillar form during karyokinesis. Karyokinesis and the clotting of blood are possibly identical processes.

21 and 22. **Indurated Erythema.**—Dade reports, with illustrations, a case of indurated erythema of Bazin in which microscopic examinations were made showing that there was no evidence whatever of its being tuberculous, therefore rendering improbable the title of "des serofleux" given by the French author. Johnson reports a case of this disorder and reviews its histology and treatment. He thinks that climatic conditions are the chief provoking causes, and his best success in managing the trouble has been through general methods, forced feeding, life in the open air, tonics, etc. It is non-microbial and, therefore, must be toxic.

23. **Syphilitic Stricture of Rectum.**—Cooke attributes the occurrence of syphilitic disease causing stricture of the rectum to the special irritation in this part, which is greater in women, who are the chief sufferers in the proportion of from 5 to 10 to 1, reversing that of syphilis itself. The location is fortunately low down, as a rule, at the point where the impacted fecal masses would meet with their first obstruction and cause irritation. About 50 per cent. of all rectal strictures occur in syphilitics. The symptoms are described in detail and the diagnosis is generally clear, but physical examination should never be omitted. It is a matter of great importance to make a correct diagnosis, considering its possible effect on the family. The diagnosis between syphilitic stricture and malignant disease is comparatively simple, and the microscope is always available. Internal medication is useless in this condition, surgical interference affording the only means from which permanent benefit may be expected. The operation that is least objectionable and most promising is posterior linear proctotomy, which consists briefly in introducing the point of a bistoury through the opening and cutting downward and outward in the median line, completely dividing not only the stricture itself, but all the structures between it, the tip of the coccyx, and the posterior anal margin. The large triangular wound is packed with gauze and made to fill in by granulation. During healing, the dressings should be often changed and the parts frequently irrigated with an antiseptic solution. At first there will necessarily be incontinence, but as the wound heals, control will be regained and, with proper care, completely in most cases. Bougies should be passed daily during the healing process, and thereafter at such intervals as may be required. The operation should not be performed when the stricture is slight and there is reasonable hope of success by treatment with bougies alone, or when it extends so high as to render it impossible to fully divide it. Two cases are reported.

24.—See abstract in JOURNAL, June 10, p. 1320.

25.—Ibid, p. 1321.

26.—Ibid, June 3, p. 1254.

28. **Revacination.**—Payne's paper is notable in that he very decidedly objects to revaccination, claiming that it is never necessary if it has once been performed successfully.

31. **Treatment of Appendicitis.**—In any case of appendi-

ctitis the important question is whether operation is imperatively demanded, and Ladd has adopted the following rule, which he here offers in answer to this question: Operation is demanded early in any case of appendicitis where any of the symptoms are severe. For example, if repeated vomiting, especially high temperature, very rapid pulse, severe or persistent pain or tenderness to pressure are any one of them especially prominent in any one case, the indication is that there is something more the matter than a simple mucous inflammation within the appendix.

33. **Post-Operative Hernia.**—The occurrence of post-operative hernia and its high percentage of frequency have induced Shimonek to review the subject and endeavor to point out the special measures for prevention. These he sums up as follows: The careful approximation of like tissues; strict asepsis; gentle manipulation; avoidance of the use of antiseptics; avoiding the constriction of the edges of the wound; allowing sufficient time to elapse before the patient is permitted to assume the upright posture; the use of slowly absorbable or non-absorbable suture materials for buried sutures.

34. **Throat Cough.**—In this article Bach limits himself principally to the subject of coughs due to irritating adenoid hypertrophies. The most frequent of these, which he finds producing the symptoms, are those situated immediately behind the posterior faucial pillars, extending up and down for about half an inch at the junction of these with the pharyngeal walls. In this region they are subject to constant irritation and strain and are generally exceedingly sensitive and irritable. The careful application of a bead of chromic acid or the galvanocautery point will in one treatment often cure this cough. Another area only second in importance is that in the lingual, or more rarely, faucial tonsils. This form of irritation is most frequently met with in children between 4 and 10 years of age, whose general condition favors adenoid growths. A few applications of 3 or 4 per cent iodine solutions in glycerin, or better, the ablation of a portion of the growths by the cautery or snare will relieve the symptoms. The third location is the post-nasal pharynx where the same irritation through reflex action may even produce attacks of asthma.

42. **Appendicitis.**—Viewing appendicitis from the standpoint of a country doctor, Davidson holds that the appendix is not an entirely useless organ, though we may not be able to explain or determine its value, and he favors conservative treatment in cases of recent acute appendicitis. He usually begins with 1 or 2 grains of calomel, repeated every hour for three or four doses, then follows with 60 grains of sulphate of magnesia and 10 grains of soda bicarbonate, repeating every half hour until free catharsis is established, and if pain is severe he uses inhalations of chloroform. In this way he says he has kept his patients from suffering and brought them safely through in every case.

43. **Scarlet Fever in Schools.**—Robinson's article is a plea for the appointment of school inspectors to prevent the spread of scarlet fever and diphtheria.

48. **Conservatism in Gynecology.**—Mattison pleads for more conservatism in gynecology, including under this term, however, certain operations, such as amputation of the cervix and operations to restore obstructed functors.

49. **Tooth in Nasal Cavity.**—Tyler reports a case in which a tooth was extracted from the nasal septum, the root going downward but not penetrating the roof of the mouth. It extended horizontally, directly across the nasal cavity, with its crown imbedded in the inferior turbinated bone.

51. **Posture in Reading.**—The main points in this article are the importance of having the book or paper held at the greatest distance in which a clear image can be had, which, if the vision is normal, should average rather over than under eighteen inches, also having the plane of the surface of the reading matter at right-angles to the line extending from the eyes to the book. Reading in a recumbent position, Baker thinks, will be altogether harmless if these conditions are observed.

55. **Hyoscin.**—The uses of hyoscin are shown in this article by Fotheringham. He claims a wider utility for the drug than has generally been recognized, and reports five cases of senile mania, meningitis, hysteria and rheumatism in which he found it of benefit.

56. **Gynecology Among the Insane.**—Hobbs' paper is a defense against certain criticisms that have been made on the extensive gynecologic work done in the London (Canada) asylum.

57. See abstract in JOURNAL, June 24, p. 1440.

60. **Depopulation of Infected Towns.**—Hlaralson discusses the question as to the advisability of the plan of abandoning yellow fever infected towns as suggested by the United States Marine-Hospital Service, but criticises its methods, especially as to the shortness of detention in camp. The principle is correct. The disinfection of a town left to itself will require about ninety days. Depopulation, followed by rapid and thorough disinfection and fumigation, could completely rid a town of infection in thirty days, and thus save many lives and sixty days of business in the town. The time for this action is not when the first case occurs, or the first few cases if their location and sources are known and the balance of the community protected against it. In this case the disease could be stamped out. But if the disease is scattered throughout the town, without known origin, the time has come for people to move, and a thorough system of sanitation should be carried on. After the sanitation is complete—it should include everything, disinfection, cleansing, etc.—the people may return. He gives an account of his experience with Oxford, Miss., last September, in this way.

64. **Widal's Test Results.**—Gehrmann gives the experience of the Chicago Health Department with Widal's test in typhoid fever. In all there were 715 cases observed, 570 clinical reports returned and 353 reports of the occurrence of typhoid reaction sent in. In 232 of these clinical ones, diagnosis of typhoid had been made. These tests were made with the dry blood specimens, which were the most practicable under the circumstances. Gehrmann is inclined to believe that this method is of considerable value in diagnosis and warrants a continuance, by the Department, of the practice of receiving and testing dry blood specimens sent in by practitioners. The small percentage of failures is, however, sufficient to render necessary attention to the following conditions: Close observation of the directions sent out by the Department; several examinations in cases where one or two do not seem sufficient, and the exclusion of normal and pseudo reactions in the laboratory by testing further dilutions of the blood solutions.

68. **Medical Legislation.**—Krauss' address reviews the medical laws of the country and urges further advance in this direction.

69. **Mountain Fever in East Tennessee.**—Chance describes a form of fever which he has met with, for the past eight years, in the mountain regions of East Tennessee. It seems to be a form of typhoid with, perhaps, some special features. His treatment, deduced from experience, consists largely in the use of intestinal antiseptics. To any one who claims that the sulphocarbolates are useless, he would reply that he does not use them in cases such as his or did not use them properly. Antiseptic treatment includes disinfection of the patient, bed, house, water-supply and excreta.

73. **Examination of the Stomach.**—In this article, the fourth in the series, Graham notices the various physical signs connected with the condition of the stomach, including the general aspect of the patient, the condition of the skin, tongue, teeth, pharynx, neck and abdomen, more especially the latter, by palpation, percussion and direct gastroscopy.

78.—See abstract of this paper, originally printed elsewhere, in JOURNAL, May 27, par. 22, p. 1164.

81. **Summer Complaints in Children.**—Considering these disorders as actual infections, Allen advises thorough disinfection as an important part of the treatment. The stomach should be emptied, but Nature generally does this. It should be a routine practice in the beginning to give frequent, small doses of calomel. Opiates should be given very cautiously, if at all. Subnitrate of bismuth in large doses is always in order. Salol is often of great benefit, but should be watched and the urine frequently examined. He likes the combination of salicylic acid and bismuth very much, and has at times had good results from very minute doses (1-4800 gr.) of arsenite of copper. Betanaphthol and resorcin are also worthy of consideration. Liquid taka-diastase is recommended when foods disagree. Coal-tar antipyratics should not be used; cold applied over the stomach and head is better and not so depressing. An

occasional dose of castor-oil, to thoroughly cleanse out the alimentary canal, is advised. Stimulants should be kept up regularly, and when the fever has subsided and temperature is not above 100 degrees drug treatment should be stopped, and diet and colon irrigation alone depended on.

89. **Lessons in Neurology.**—Moyer here considers typhoid neuritis, goiter, with development of constitutional symptoms, and ataxia paraplegia.

93. **Hallucinations of the Dying.**—Chenoweth discusses the phenomena of death, more especially the hallucinations which he naturally credits to pathologic causes, toxic or other abnormal conditions of the blood, etc.

94. **Diabetes Mellitus.**—Keener lays down the dietetic management of diabetes and its drug treatment. As regards the latter, he finds no remedies better than arsenic and opium. Arsenic gives in the form of a solution of the chlorid, continuing it throughout the entire treatment. Opium he gives in the form of codcin in doses of from .5 to 4 grains, usually in one dose at bedtime, but occasionally more frequently, when indicated. He claims that with proper attention to the dietetic rules, and with the medical treatment he describes here, a great proportion of cases will recover. In his own experience he has had, he says, 75 per cent. of absolute recoveries.

97. **Aortitis.**—Hoover's article is a general description of the diagnostic points of aortitis, illustrated by four cases. The intolerance of the common cardiac remedies in this disorder is noted. Iodid of potash, in small doses, and nitroglycerin are the only drugs that are well tolerated in his experience. Digitalis, strophanthus and strychnia seem to be positively harmful.

98. **Digitalis and the Heart.**—Waters' article calls attention to the value of digitalis, and he thinks that its sphere of usefulness is much wider than has been commonly supposed in heart disease. It is certainly not limited by its value in organic diseases alone. As regards its supposed dangers, he considers them practically insignificant when the drug is intelligently prescribed.

100. **Recognition of Blood Changes.**—Shoemaker's address has for its principal themes the auto-intoxication or toxic products in the blood, and the necessity of attention to this subject by physicians.

101. This paper was published in full, in the JOURNAL, April 29.

102. **Nature of Xanthomata.**—In this article, which is well illustrated by microphotographs, Pollitzer discusses the nature of xanthomata, first pointing out the difference between that form occurring on the eyelids and the common multiple xanthoma. The former is a very common disease and is apparently incurable. The latter is exceedingly rare and is always of limited duration. He thinks it well within the limits to estimate the proportion of the eyelid to generalized xanthomata as 100 to 1, and he rarely finds the two conditions associated. He, therefore, is inclined to believe them wholly distinct diseases. His conclusions are as follows: 1. Xanthoma palpebrarum vulgare is not a neoplasm; it is the product of the degeneration of embryonically misplaced muscle fibers. 2. It bears no histologic relationship whatever to xanthoma tuberosum disseminatum. 3. The common xanthoma tuberosum and xanthoma diabeticoorum are similar processes. 4. They are both connective-tissue neoplasms in which the relative proportion of fibrous tissue and connective-tissue cells varies in different cases. In both the cells undergo a fatty degeneration, resulting in the destruction of the cells and ultimately in the more or less complete disappearance of the nodule. The process is more diffuse and the degeneration more rapid in the diabetic form. 5. Generalized xanthoma is an irritative process whose cause must be sought in some systemic disturbance.

103. **Ophthalmology and General Medicine.**—The relation of ophthalmology to general medicine is discussed at length by Lewis. It would be impossible to abstract a paper made up of details as is this one, but it may be said that he attributes the prevalence of nervous diseases largely to eye strain due to civilization.

104. **Chronic Malarial Infection.**—Noting the recent discoveries in regard to malaria, and the change of views thereby necessitated, Thomson calls attention to the parasite in the blood in the production of chronic malarial infection, and re-

masks in regard to the treatment. He thinks that latent malarial infection is of more importance than seems to be generally realized, and the necessity of proper treatment is thereby emphasized. He notices that fact of individual idiosyncrasy and gives a sketch of the treatment he recommends: 1. Mercurial laxative given toward the close of febrile paroxysms and made to act within six hours. The advantage of this is that it prevents intestinal self-infection and favors the absorption of quinin, which is an unstable alkaloid in the alimentary canal. The quinin itself should be given as nearly as possible at the time of sporelation of the parasite, i. e., shortly before time for the chill, and he prefers to give the doses in three equal parts, an hour apart, the last from one to two hours before the expected paroxysm. It has been a matter of common experience in the tropics that the action of quinin is favored by addition of spices. The success of Warburg's tincture possibly depends on this fact. He therefore gives powdered ginger and quinin in equal quantities. Pulverized capsicum is sometimes given, 1 grain to 4 of quinin. In some cases, when quinin seemed to fail, he has given paregoric as an adjunct, with good results. This was given in three daily doses of $\frac{1}{2}$ ounce each with doses of 15 grains each of quinin and ginger twice daily. The results of this treatment were strikingly good and one of the most notable was the antilethargic action of the paregoric in this case. Instead of being stupifying it was stimulating.

105. **Phthisis.**—Barney treats phthisis with special attention to the nutrition, caution as to infection, plentiful supply of fresh air in bed rooms, good climatic surroundings, cold sponge baths in the morning, and a climate that allows plenty of open air exercise. He thinks isolation useless and damaging. Hemoptysis is treated by making the patient comfortable, administering morphin and atropin hypodermically and local application of ice. Guaiacol is the most efficient medical agent we possess; give in small doses gradually increased. In cases where there is high fever he uses phenobromate in 5-grain doses, and thinks it a superior antipyretic and analgesic to the other coal-tar preparations commonly used.

106. **The Term Appendicitis.**—Ellis' paper is a defense of the use of the term appendicitis as being convenient, and its change to other words on account of the necessity of Greek purism not needed.

107. **Disinfection for Tuberculosis.**—This article is a plea for the municipal control of the disinfection of departments occupied by tuberculous patients. Sanitation and disinfection left to landlords and boarding-house keepers is apt to be very inefficient, and the only remedy will be to have it thoroughly under the control of an efficient local board of health.

108. **Advice to Gonorrhoeal Patients.**—In treating either the acute or the more chronic forms of the infection, Valentine suggests that the patient be instructed to refrain, as many hours as possible from urinating just before visiting his physician, to enable the medical adviser to better judge the character and quantity of the discharge, and obtain specimens for examination under the microscope, also to obtain the first urine passed for shreds, flakes, granules, etc., findings that are most important to correctly judge of the concealed conditions present. The diet is to be limited only to the exclusion of indigestible foods. All alcohols are denied, excepting in such cases as present especially low states, when the use of a light claret may be allowed. Carbonated waters are forbidden, but tea and coffee are allowed. Copious draughts of water are to be insisted on. Exercise is always to be taken in moderation, but this moderate exercise is to be insisted on, thus preserving the general health. In treating male cases, a suspensory is always to be advised and the patient fully informed regarding general hygiene, the danger of auto-infection, as well as instructed on the danger of sexual excitement, and the prohibition of intercourse.

109. See abstract in JOURNAL, April 29, p. 941.

112. *Ibid.*, June 17, par. 53, p. 1381.

113. **Lipoma.**—Horsley reports the removal of a diffuse lipoma situated on the anterior and lateral aspects of the neck; the growth had been gradually increasing for twenty years and had attained such proportions that respiration was retarded. The tumor was exposed by the Kocher incision, consisting of a transverse incision commencing under one ear and

extending obliquely over the tumor, terminating under the opposite ear; this was joined at the median line by a vertical incision extending downward. Under careful dissection the tumor was completely removed and all symptoms relieved; the paper is illustrated by four plates.

114. **Lectures on Orthopedic Surgery.**—Ridlon and Jones consider the symptoms and diagnosis of hip-joint disease. Methods of examination are graphically represented by numerous plates. The paper is a continuation of articles previously published.

115. **Pathology of Catarrhal Deafness.**—A large proportion of the cases of chronic catarrhal deafness, Hinkel concludes, have their origin in the hypertrophic forms of middle ear disease; the prognosis he considers often favorable; with prompt and careful treatment the condition is frequently helped, and at times cured. The prophylactic treatment in early life is to aim at the removal of adenoid, tonsillar and nasal obstructions.

116. **Involvement of Eye and Ear in Cerebrospinal Meningitis.**—Reference is made to the epidemic form of meningitis. Edema of the lids and conjunctiva may occur either early or late in the course of the disease, and may occur by simultaneous invasion of the orbital tissues and meninges, or by extension through the superior orbital fissure. Involvement of the motor nerves is more common; this involvement may be due to irritation or may be truly paralytic. Conjugate deviation is sometimes present. Nystagmus is rare, photophobia common, especially so when general hyperesthesia is present, xerosis of the cornea, corneal ulcers, herpes, as well as infiltrations following exposure of the cornea. The iris is usually dilated, partially due to increased pressure. Iritis, simple or accompanied by involvement of the ciliary body and choroid, is sometimes found. The choroidal inflammation is frequently of a seroplastic nature, eventually becoming purulent. Involvement of the choroid may be due to metastasis. The optic nerve may be attacked by direct infection, extension, or metastasis, an optic neuritis being found in the majority of cases, and to this complication the loss of sight in a large proportion of these cases is due. Deafness resulting from epidemic cerebrospinal meningitis does not increase after the subsidence of the disease; the hearing is often eventually improved, if the labyrinth alone is involved.

117. **Treatment of Malaria.**—Center treats of malaria, considering it a generic term, including several distinctly separate manifestations of the disease, caused by distinct and different parasites. These organisms—the plasmodium malariae—differ in age, habits, and in morphologic characteristics, each variety with an individuality of its own. He calls attention to the necessity of selecting such remedies in treating the various forms of the disease as are found to inhabit or destroy that variety of organism responsible for the condition under treatment. The cases of estivo-autumnal fever are to be treated not alone by quinin but quinin combined with arsenic. During convalescence the use of chlorid of iron is advised.

118. **Typhoid Cases at U. S. General Hospital.**—A review is made of the treatment of 412 cases of typhoid treated at the U. S. General Hospital at Fort Monroe, Va., during the summer of 1898. The treatment these patients received did not differ materially from the ordinary hospital treatments, excepting that no baths were given, even in the cases running a high temperature. Stimulation was given in the form of strychnin in every case; whisky and some other forms of stimulants only in special cases. The mortality was 7.5 per cent. Anderson claims priority in the treatment of collapse following hemorrhage of typhoid, by transfusion. He used the normal salt solution in one case, introducing as much as three pints into the median basilic vein, with good results.

119. **Fatal Case of Scurvy.**—The case, reported by Bassler, is of interest in that it occurred in an infant 1 year of age, and that the report of autopsy is appended. The child was nourished artificially after the second month; the diet, changed from time to time, included barley water, oatmeal water, and modified cow's milk; all foods were boiled. In the fifth month the first symptoms appeared: intermittent bleeding from the mucous membrane of the vagina; the first incisors were cut in the tenth month. Anemia was well marked early; legs be-

came flexed and powerless; pressure over the lower end of the femur and upper end of the tibia caused pain; the gums were characteristic; teeth loose; hemorrhage from the gingival junction. Autopsy showed scarcity of fat tissue all over the body, heart slightly enlarged, mitral valves partially destroyed; the heart muscles showed fatty changes. The lungs showed a condition of chronic bronchopneumonia in the lower lobes. The kidneys and liver were slightly enlarged and presented fatty changes. Examining the long bones, the periosteum was found raised from femur, fluctuation distinct, and, when incised, a thick grumous blood was forced out with a jet, having apparently been retained under pressure. The changes observed in the tibia were thickening and congestion of the periosteum near the upper extremity of the bone.

121. See JOURNAL, July 8, par. 122, p. 93; July 15, par. 115, p. 157.

122. **Blood Examinations.**—Hewes' paper is a continued one and will be noted more fully when completed.

123. **X-Ray Examinations in Children.**—Williams emphasizes the usefulness of the X-ray examinations in children. They are more easily penetrated by the rays and caution should be taken to avoid too much light on this account. In some cases of pneumonia, especially in the early stages, the X-ray may be of decided value in the diagnosis, also in cases where the symptoms suggest tubercular meningitis, and in pleurisy with effusion or empyema. The size and position of the liver and spleen are more readily determined than with adults, as is also the case with the kidneys, especially the left one. By giving subnitrate of bismuth with bread and milk, changes in the size and shape of the stomach after a meal may be followed. Investigations on these points have been made in conjunction with Mr. V. B. Cannon, which are yet to be published. There need be no fear of untoward effects if proper precautions are used. Williams has had none in about 3000 examinations.

124. **Summer Diarrhea in Infants.**—The essentials in the treatment of this disorder, according to Chapin, are: prevention, which is brought about by the proper regulation of the milk supply, the providing of small parks or airing places for children in large cities, extra cleanliness in the home, frequent bathing. He would allow the child to play in a tub of tepid water for hours at a time, and in general a bottle-fed baby should have less bulk of food and a higher dilution of milk in very hot weather than it is accustomed to under more favorable conditions. He prefers boiling or pasteurization to sterilization of milk. The first signs of any gastric or intestinal indigestion should be looked for and checked before any marked diarrhea appears. In the dietetic treatment, as most cases are due to milk poisoning, all forms of milk must be temporarily withheld and many a summer diarrhea might be aborted if this were done for from twelve to forty-eight hours. If this has to be kept up long, one of the best substitutes is egg water, made by stirring the white of an egg in half a glass of cold water, and he adds to this, to overcome its tastelessness, about ten drops of aromatic spirits of ammonia, which also seems to check the stomach irritation. Other substitutes are thin gruels from barley or wheat flour and cold whey. If milk has to be kept away for several days, nutton broth with all the fat carefully skimmed off is also a good substitute. When the acute symptoms have subsided and milk is resumed, it must be given cautiously and at long intervals and highly diluted. A barley water or thin gruel are the best diluents. Medical treatment is often of less importance than dietetic, but in vomiting drafts of tepid water should be given, which, when rejected, washes out the stomach. It is rarely necessary to use the tube for this purpose. He usually gives 1-10 of a grain of calomel every hour for six or eight doses, which usually clears the canal. Enemas of normal salt solution may also hasten this. The drug he most relies on is bismuth subnitrate, but he also uses small doses of aromatic spirits of ammonia, 10 to 20 drops, which seems to stimulate the infant. Alcohol is given very sparingly, and only when free stimulation is required. Opium is contraindicated until the bowels have been thoroughly emptied and when cerebral symptoms threaten. In cases, however, in which rapid peristalsis and profuse glandular secretion persists, a few moderate doses of opium may be of great service and even save life.

125. **High Altitudes in Heart Disease.**—Babecek reports

nine cases illustrating the effect of high altitudes on the heart and circulation. The paper ends with the following conclusions:

1. All forms of cardiac disease do not contraindicate sojourn at a high altitude.

2. The ill effects of low atmospheric pressure in some forms of cardiac disease are explicable on the hypothesis of acceleration of venous flow and corresponding quickening of the heart beats.

3. Consequently those forms with which high altitude is likely to prove incompatible are pronounced aortic or mitral stenosis, and regurgitant disease complicated by pleural and pericardial adhesions.

4. On the other hand, patients with uncomplicated regurgitant lesions or arteriosclerosis with or without myocardial changes, may endure low atmospheric pressure without injury.

128. **Diseases of Sinuses.**—The parts, the diseases of which are here described, are the frontal sinus, the antrum or middle meatus, the ethmoid and sphenoid cavities. The disorders of the frontal sinus are empyema and tumors, the former of which requires early opening and injection of bactericidal solutions with free drainage and checking the suppurative process. Tumors of the frontal sinus are usually osteomata, and their treatment is solely by operative removal. Empyema of the antrum is usually the result of dental or alveolar disease, though it may be the result of inflammation in any of the adjoining parts. Its extension to the orbit is usually the result of an osteoperiostitis of the orbit floor which is very thin and often shows openings through which infection may occur. The diagnosis is here discussed and methods of elimination of the antrum described. The only curative treatment is to open the antrum and evacuate its contents and employ frequent antiseptic irrigation, and when suppuration has been completely abolished, endeavor to close the artificial opening. Tumors of the antrum, which are difficult to diagnose until they have produced pressure symptoms, are to be treated by complete removal involving a resection of the bony parts that may be diseased. The nasal meatus is most commonly affected by a purulent rhinitis, usually secondary or associated with purulent processes in the ethmoid cells or antrum, and the treatment must be directed in this case to those cavities. If advanced to the meatus, prompt curetting and removal of the diseased bones is the treatment recommended. Its tumors should be extirpated early in their development, but if a malignant tumor has already invaded the deep bones of the face and base of the skull including their cavities, the case is hopeless and interference would probably hasten the fatal termination. Ethmoid disease is perplexing in its symptoms and difficult of diagnosis. Its etiology is apt to be obscure. The treatment in all cases of empyema is free opening, curetting, irrigation and drainage. Tumors of the ethmoid are usually of a sarcomatous or myxosarcomatous variety, though other forms are met with, such as enchondroma, fibroma, osteoma, etc. The only treatment is removal. The sphenoid antrum is subject to the same diseases and the symptoms are much the same as those of the adjoining cavities. In empyema the headache is located at the back of the head and the involvement of the different nerves is to be noted. Tumors here may have no subjective symptoms or there may be severe occipital pain. If the process extends there may be blindness due to compression of the optic nerve, and if the growth extends into the cranial cavity and is rapid, meningitis or cerebral abscess will result. Sarcoma is the most frequent malignant growth. In ending his paper, Bull repeats the following conclusions published some years ago and states that his experience has led him to still further emphasize their importance: 1. The prognosis of all forms of malignant orbital tumors is unfavorable; and if the tumor is primarily one of the deep facial bones or their sinuses, the prognosis is positively bad. 2. With the single exception of encapsulated tumors of the orbit, surgical interference is almost invariably followed by a return of the tumor, and the growth of the secondary tumor is more rapid than that of the primary lesion. With each succeeding operation the period of quiescence in the return of the tumor grows shorter and the rapidity of growth increases. 3. The patient's family, and in certain cases the patient himself, should in the beginning be told of the serious nature of the trouble and be warned that complete removal of all diseased parts is a hopeless task. The burden of the de-

cision as to surgical interference must rest on the shoulders of the patient. 4. Repeated operations in these cases undoubtedly shorten the life of the patient. While it is our duty, therefore, to operate in all cases in order to relieve severe or unbearable pain, we should be slow to operate merely for the sake of temporarily relieving physical disfigurement or deformity, especially if we are convinced that by so doing we shorten the life of the patient, even if that shortened life is rendered more bearable.

130. Methods in European Hospitals.—Miller describes his observations of methods of asepsis and antisepsis, etc., of the various operators in European hospitals, including those of Hamburg, Berlin, Leipzig, Dresden, Vienna, Budapest, Prague, Paris, Brussels and London. He remarks a striking contrast in the temperature of the operating-rooms in Germany and France and England. [Some of his brief descriptions are hardly complimentary to the latter in some respects. Results, however, seem to be less different than one would expect, were all the precautions of the Continental surgeons necessary.—Ed.]

131. Cardiac Murmurs.—Coleman publishes an ingenious diagram, including not only the events of the full cardiac cycle but also their association with murmurs. It consists of a series of concentric circles representing, in order from within outward, the chambers of the heart, sounds and time, valves and murmurs. The diagram has been constructed, as he says, chiefly with regard to simplicity, that it may be used for clinical and didactic purposes generally.

132. The "Kissing Bug."—Burrall reports a case of a middle-aged man who called for treatment of an eruption on his left forearm, consisting of long vesicles with swelling of the wrist and back of the hand, causing pain on movement and a diffuse, red, erysipelatoid discoloration from the wound to the bend of the elbow, covering nearly half the circumference of the forearm. There was little constitutional disturbance or complaint of pain. The eruption was supposed to be the result of a bite of a "kissing bug," and was rapidly relieved by painting the inflamed area with tincture of iodine and internal administration of calcium sulphid. Carbolic acid ointment was also used on the parts. [This is the first medical report we have noticed of the bite of the so-called "kissing bug."—Ed.]

FOREIGN.

British Medical Journal, July 1.

Possibility of Extirpating Malaria From Certain Localities by a New Method. RONALD ROSS.—First remarking that experience has taught us, in various countries, that malaria can be banished by drainage and cultivation, Ross says that there are still some regions in which, in spite of both of these factors, malaria is still prevalent in its most virulent form, and he asks whether science cannot give us some more accurate means of detecting the precise cause of malaria in such regions, and after discovery, of removing it. We now know how and where the parasites live in external nature, and how they enter the system. We know that it is through mosquitoes that they enter the blood, an idea which has been extant for many years, but which has only lately received scientific confirmation. In 1894 Dr. Patrick Manson, noticing certain peculiarities of the parasite, suggested that it required a suctorial insect for its further development. In 1895, Ross began his experiments, and in 1897 he succeeded in cultivating the parasite of malaria in two species of mosquitoes, while in 1898 he completely worked out the life cycle of this organism. The observations have been carried out by numerous investigators and valuable details added, so that at the present time we have the knowledge that is first required of the natural history of the infection. It is sometimes said that malaria exists where there are no mosquitoes, but no case of the sort has yet been proven. The fact that we require these mosquitoes only for the first infection, must be remembered; persons once infected may carry the disease elsewhere to develop it. Many of those who accept the mosquito theory have emphasized the value of individual precautions, nettings, fans, etc., and while something can be done in this line, these do not touch the real points and more practical methods must be sought. Ross notes, from his own experience, that private houses may often be kept clear of mosquitoes by simply ban-

ishing stagnant water from the premises, and fortunately we do not have to fight all species of mosquitoes in our battle with malaria. The ordinary *Culex* is inoffensive in this respect, and it being the common insect about towns, breeding in tubs and pots, explains why malaria is often less malignant there than in the country. Mosquitoes of other kinds, however, *Anopheles*, which he calls rural mosquitoes, are found in the country and breed only in stagnant pools. These are the propagators of malaria, the hosts of the malarial parasite. The conditions they require are stagnant pools that do not dry up completely in the summer, are not subject to be washed out by rains, and yet are too small to contain fish, which would eat up the larvæ. Such conditions only exist to the full extent in country districts, and the following statements, having a practical bearing, may be made: We can detect the dangerous species of mosquitoes in a given locality by a perfectly certain method, namely, by ascertaining according to Hanson's induction whether the parasites of malaria will live in them or not. We can detect their breeding grounds by searching for their larvæ. In order to obliterate pools which breed dangerous mosquitoes, they must be filled up or drained. The question as to whether it is possible to eradicate malaria in any district depends on whether these varieties are sufficiently isolated and rare to be dealt with by public methods of repression. It is impossible to give a full answer to this question. We do not yet know all the dangerous species or their habits, but Ross is inclined to answer it in the affirmative.

Some Points Connected With Sleep, Sleeplessness and Hypnotics. JOHN BUCKLEY BRADBURY.—The second lecture on hypnotics deals largely with the chemical action of hypnotics of the fatty type, including the alcohols, the chlorin compounds, etc. It is impossible to abstract it in detail.

Sequel to Case of Acute Tetanus Treated by Intracerebral Injections of Antitoxin. WILLIAM F. GIBBS.—This communication is a sequel to one published in the *British Medical Journal* of April 15, where apparently successful results were obtained by intracerebral injection of antitoxin in a case of acute tetanus. Unfortunately, after the disappearance of all tetanic symptoms, the patient again became suddenly ill and died on May 5, eight weeks after the last injection, showing decided meningitis and abscess of the brain. Bacteriologic examination showed the presence of cocci in considerable numbers, having all the appearance of the staphylococcus pyogenes aureus. As everything that could be done to insure asepsis in the injection was employed, he doubts infection through the serum, but thinks that damage to the brain, from the injury, would predispose to subsequent infection.

Lancet, July 1.

Importance of Plastic Surgery in Renal Distension (i. e., Nephritis). HENRY MORRIS.—This article is a general discussion of the operative treatment of ureteral stenosis, profusely illustrated and with tabulated cases, including five personal ones of the author's.

Operative Treatment of Eyes Exhibiting High Degrees of Myopia. RICHARDSON CROSS.—Noting that slight degrees of myopia are of little annoyance, while a moderate amount is a disadvantage, and that in the higher degree we have a serious defect of vision, and not infrequently a damaged eyeball, the author shows how oculists are justified in recommending somewhat heroic measures in order to remedy the condition. He gives a brief résumé of the operations that have been suggested, and especially notices the contribution by Fukala on this subject. It is now agreed that removal of the lens is the only operative procedure likely to be of service, and he remarks on the degree of advantage of this operation. Each case must be judged by itself, and in the linear extraction it is necessary to specially guard against prolapse of the vitreous and iris. He does not think that the danger of detachment of the retina is as great from this operation as has perhaps been supposed. He would be very cautious about operation on a person with only one eye. The need of the operation is greatest in those who have to depend on themselves for a livelihood; the condition unrelieved may mean loss of employment. It is difficult to estimate the amount of improvement in distant vision, but making allowance for the difficulty the patient finds in wearing the best corrective glasses, and his distinct preference for wearing none, the gain is probably greater than that expressed

in figures. As a rule we do not gain improvement in vision for reading, but certainly do in a few instances. He gives a tabulated statement of forty-eight cases in which he does not regret having performed the operation in one, though no unfavorable cases are excluded.

Some Surgical Sequelae of Influenza. WARRINGTON HAWARD.—The author here notices some of the notable sequelae of influenza, suppuration of the lymphatic glands, inflammation of the mucous membrane of the throat, and nasal, maxillary, and frontal sinuses, suppuration of the middle ear, synovitis, boils, neuralgias and residual abscesses. Tendency of influenza is also to provoke into activity quiescent tuberculous or other chronic forms of joint trouble, and one of its most remarkable effects, to which he wishes to call special attention, is the active recrudescence of latent syphilis to which it gives rise. He thinks, in this case, calomel vapor baths will be found the most efficacious treatment.

Three Cases of Chronic Mediastinitis. CECIL BOSANQUET.—The author first refers to the paper of Dr. Whipple (*Lancet*, April 1 and 8), showing how small a number of cases of this affection are recorded, and takes this as a reason for offering the history of three cases personally observed, all of them with autopsies. The patients were all boys, their ages 8, 15, and 6 years respectively. In none of them was the diagnosis made on first admission. The duration of the disease, after definite symptoms had appeared, was about two years in the first two cases, and in the last the signs attributable to the mediastinal disorder only appeared three months before death, though the total duration of the patient's illness was about two years. The most striking clinical feature is the great enlargement of the liver. In all it was found in a state of very chronic congestion that had passed beyond the nutmeg stage into one of general engorgement, pigmentation and fibrosis with some fatty change. In the first two cases the heart was small, the walls thin and fibrous. In the last it was not reported. Pleurisy with effusion occurred in all three. The kidneys were much congested and in the first two cases tough from increase of fibrous tissues. He refers to two other cases reported by Mott that were not included in Whipple's or Harris' lists.

Indian Medical Gazette (Calcutta), June.

Cause and Prevention of Heat Apoplexy in Army. C. J. MCCARTHE.—Noticing the frequency of heat stroke among soldiers in India, when civilians are exempt, McCarty calls attention to the difference of dress, even in the tropical uniform of the British army in India, and claims it is far from suitable to the climate. The costume he would advise would be a Norfolk jacket with four pockets, loose trousers with four pockets and loose twill cotton shirts with two pockets. The pockets are to avoid the necessity of belts. A light knapsack should be used for rations and the greater part of the ammunition. In going into action, the latter can be stored in the ten pockets, the water bottle can be hooked on the coat, the bayonet hung on the frog on the waist-band of the trousers or on the coat.

Inoculation of an Entire Community With Haffkine's Plague Vaccine. C. H. BENNETT and W. B. BANNERMAN.—The authors give a brief report of the inoculation of the entire community with Haffkine's plague serum and with the result of almost absolute protection. They conclude that this measure is a prophylactic capable of completely controlling an epidemic of plague.

Indian Medical Record (Calcutta), June 7.

Treatment of Tetanus by Intracerebral Injection of Antitoxin, With Particulars of Case Treated by This Method, Followed by Recovery. D. SEMPLE.—After noticing the general facts in regard to tetanus, Semple reports a case treated by intracerebral injection with apparent perfect success. The technic is given in detail.

Medical Press and Circular (London), June 28.

Eradication of Tuberculosis. GEORGE FLEMING.—This paper, concluded from a preceding number, is devoted to the subject of bovine tuberculosis and the method of its eradication. The author takes the usual rather radical view of the necessity of extirpating the animals with the disease.

New Method of Ventilating Sewers. CHARLES A. CAMERON.—The method of ventilating sewers here proposed is the use of porous cylinders set in the crown of the sewer and opening into a chamber like that used in the ordinary ventilators.

As the cylinders allow air to pass freely, but bar the passage of micro-organisms the air that comes out into the streets is consequently filtered.

General Disorder Originating in Disease of Female Pelvic Organs. MENDES DE LEON.—The theme of this address is the general disorders due to affections of the female genital organs in women, and covers nearly the whole range of the subject. As regards mental disorders from these causes, he is somewhat moderately conservative in his views.

Brazil-Medico (Rio), May 15 and June 8.

Arsenic Acid as a Preventive of Yellow Fever. I. DA ROCHA.—Dr. J. P. do Rego Cesar noticed that non-acclimated persons in Brazil, who had occasion to take arsenic for any reason, were not molested by yellow fever, and he commenced to administer it as a preventive, with most satisfactory results, confirmed by the experience of other local practitioners. Da Rocha reports, in this article, the results of daily prophylactic doses of half a milligram of arsenic acid administered during the summer season to the entire force of a certain factory, over 200 men, for the last five years. The men are frequently changing, are mostly unacclimated, live in unhygienic surroundings and infected localities, and take no precautions against contracting the disease. During the terrible epidemic of 1894, three of them were attacked but soon recovered; exceptionally light cases among the prevailing mortality. In the epidemic of 1896 twenty men contracted the fever a few days after their admission to the factory, each having received only a few doses of the arsenic. But the effects were evident in the benignity of the cases, all dismissed from the hospital in from four to six days, while a couple of extra hands only rarely employed and thus not receiving the arsenic regularly, succumbed to the disease. There have been no cases in the factory since 1896, although yellow fever has scourged the city again and again, and formerly ravaged the factory. Another group of 150 men, to whom the prophylactic doses were regularly administered, have also escaped without a single case. Persons just arriving are advised to repeat the dose three times a day the first week, twice a day the second, and thereafter once a day. No one thus treated has contracted the disease to date.

Bulletin de l'Academie de Medicine (Paris), June 13 and 20.

Arsenic and Respiratory Interchanges. A. ROBIN.—Tests with five tuberculous patients to whom sodium arseniate (.005 grams a day) was administered, or rectal injections of Fowler's solution (5 c. c. of an 8 per cent. solution), demonstrated that the effect was to materially diminish the respiratory interchanges, but when the dose was increased to .01 gram a day, the effect was exactly the reverse.

Differences in Tracings of Various Sphygmographs. H. HUCHARD.—"No two sphygmographs can be used interchangeably, as they produce entirely different results even on the same patient." Marey recommends taking the tracings as small as possible, enlarging them later if necessary, thus reducing the liability to error from the inertia of the lever. Huchard recalled that the last international congress of physiology appointed a committee to collect the testimony of the most competent men in each country to establish a uniform type for the construction of physiologic instruments, and report in August, 1900. Dr. Bowditch is the American member of this committee. "It is hoped that physicians will be guided in their choice of instruments, by the recommendations of the committee."

Advantages of Creosote in Tuberculosis. C. SAVOIRE.—The novel point in this communication is that very large doses are tolerated without the slightest inconveniences, for months at a time, if there are no pre-existing gastric troubles, and the therapeutic effect is correspondingly enhanced. As much as 6 to 10 and even 15 grams a day were administered for months.

Imperfect Vaccination. J. CARTERET.—Heifers, inoculated with serum from "doubtful" or "unsatisfactory" vaccination pustules, reacted, showing that these pustules are more "successful" than hitherto supposed, and a second heifer inoculated with serum from the first, developed typical pustules, as also persons inoculated with it. These same persons, afterward inoculated with ordinary lymph, proved to be completely immune. "The degree of the reaction evidently depends on the individual, and all pustules are specific, and are evidence that the subject is protected."

Journal de Médecine de Paris, June 25.

Tuberculosis. BOUCHER.—This iconoclast states that nothing but inconsistencies and nonsense resulted from the deliberations of the Tuberculosis Congress: Frankel, for instance, the rabid partisan of contagion by the bacillus, announced that these bacilli, outside of the human organism, cease to multiply and perish rapidly when exposed to light and desiccation. And yet, desiccated sputa are claimed to be extremely virulent! Loeffler announced the direct transmission of the tubercle bacillus from the mother to the fetus, but added that this did not occur unless the mother's genital organs had some tuberculous lesion. These are the bases on which rests the theory of heredity and contagion! This bacillus theory, he continues, was exploded long ago: Strauss, Dieulafoy and others have found the so-called tubercle bacillus in the organs of persons who never presented the slightest tuberculous taint during their entire existence. Middenkorp's observations, "kept rigorously secret," demonstrate that the Koch bacillus is not found even in the tubercles of any tuberculous affection of any organ whatever. In many cases of tuberculosis it is impossible to find a Koch bacillus and, in short, this bacillus has nothing to do with tuberculosis in the pathogenic sense, as Solles, Bang, Hersberger, Ernst and Durr have fully demonstrated, as also the personal research of the writer, "which has established that the famous bacilli are nothing in fact but fragments of mycelium derived from the air cells, proceeding from innumerable species of marine, fluvial and lacustrine algae, which we are continually absorbing, and which arriving from without, free from noxious properties, proliferate, become transformed in the infective media in which chance deposits them, and assume at the same time and most fatally, the properties of these media. This is the scientific truth, in harmony with logic, with all that experience has taught us, and with sound reasoning."

Berliner Klinische Wochenschrift, No. 21.

Blood Spitting in Tuberculosis. C. GERHARDT.—The rupture of some ramification of a pulmonary artery passing through a cavity is usually the cause of the blood spitting and also of infiltration of the lung tissue with blood, producing râles and dulness. In 879 cases observed blood was expectorated in 30 per cent., and over half a liter in 15 per cent. If the temperature afterward rises, this is a most unfavorable symptom but blood spitting in the early stages is usually a very favorable alarm signal. Gerhardt recommends salt to diminish the blood pressure by the nausea induced, and also the production of venous stasis in the extremities with a tourniquet. Codein, morphin, heroin, opium and large doses of ergot, also injections of atropin (0.3 mg.) and inhalations of diluted solution of chlorid of iron, also quinin were found effectual in various cases.

Deutsches Archiv f. Klinische Medicin, lxi. Festschrift.

Hysterical Fever. DIPPE.—A patient with pronounced hysterical attacks and pain in the abdomen, accompanied by high intermittent fever, was operated on but the abdomen found entirely normal. The patient was allowed to believe that the anticipated suppurative focus had been found and removed, and pains and fever vanished permanently.

Disturbances in Circulation in Infectious Diseases. I. ROMBERG.—It is evident from the numerous and carefully conducted experiments recorded, that the disturbances in the circulation in the course of acute infectious diseases are not due to weakness of the heart, as formerly assumed, but to paralysis of the vasomotors. Paralysis of the vasomotor center in the medulla oblongata alters the distribution of the blood throughout the organism: the splanchnic vessels are gorged, while the vessels in the brain, muscles and skin are empty. 2. PÄSSLER.—The therapeutic indications therefore are to stimulate the diminishing arterial pressure by substances like caffeine or coriamyrtin, which excite the vasomotor center, and hypodermic or intravenous injections of salt solution. Strychnin and ergotin are not effective except in toxic doses. 3. HASENFELD.—Malignant pyocyanic endocarditis in animals did not produce heart weakness. The heart was able to accomplish more work than normally, and even become hypertrophied. The animals died of disturbances in the circulation caused by paralysis of the vasomotor centers. 4. HOLLWACHS.—Disturbances in the circulation in diphtheria at the height of the fever process are also due to the same cause, but disturbances occurring at later stages are produced by a secondary myocarditis.

Deutsche Medizinische Wochenschrift (Berlin), June 29.

Catalytic Effects of Galvano Current With Checked Circulation. T. BÜNINGEN.—Cataphoric medication is most effective when the circulation of the blood is arrested by an Esmarch tourniquet or similar device. Büdingen recalls the one serious disadvantage of the Bier method of treating tuberculous lesions by inducing venous hyperemia, namely, the formation of cold abscesses, which has tended to prevent the general adoption of this simple, effective, logical therapeutic measure, and caused Bier to advocate the suspension of the treatment from time to time, thus reducing the liability to the development of these abscesses, although the curative results are proportionately reduced in consequence. It is evident that the injury to the tissues which unfortunately accompanies the cure of the lesion, is due to the lack of the stimuli afforded by the circulation, and he suggests that possibly the cells in the part might be kept in normal conditions, and thus the formation of the abscesses be prevented, by stimulating them with electrolysis during the period of venous stagnation, and thus relieve Bier's method from the odium of abscess production.

Surgical Treatment of Ascites From Cirrhosis of Liver. A. E. NEUMANN.—A convincing case is reported confirming the assertions of Tilmann and Talma (see JOURNAL, xxxii., p. 1169), in regard to the benefits to be derived in case of interrupted circulation in the portal circulation by establishing collateral routes for venous circulation, if the liver cells are still capable of function. The operation is as simple and free from danger as an exploratory laparotomy, and scarcely complicates the incision to relieve the ascites.

Memorabilien (Heilbronn), May.

Biology From Vitalistic Standpoint and Its Relations to Medicine. GUIDO BELL.—"The correct understanding of what is meant by constitution and temperament is of the greatest importance as a foundation for a general theory of causes in pathology." The writer traces the branching of biology into physiology and psychology, showing how each has the same basis, and that each is mutually dependent, under the same laws, and emphasizes the point neglected by the Darwin theory, that evolution is not only a development but also a subordination to a higher whole. Constitution is defined as not the result of the uninterrupted sequence of stimuli from without, under the influence of which the organism develops and is maintained; it is not the special structure of the tissues and organs. It is rather, the capacity to develop and be maintained in a special manner, as the person of the king is not the government, which applies to the power and capacity to govern, with which he is invested. The constitution is a faculty and not a condition of bones, muscles, etc. Temperament is an attribute of the constitution: the manner of thinking, feeling, and acting, which proceeds from the organization of the individual and must always so proceed, as beauty is an attribute of the rose.

Hydratic Treatment of Insomnia. B. BUXBAUM.—The most obstinate cases of insomnia, as the writer states, are in mental diseases, progressive paralysis, delirium tremens, etc., and it is especially in these cases that the beneficial effect of the wet pack is the most marked, but it is effectual in all cases of insomnia. The patient, lying on a blanket, is covered with a wet linen sheet smoothly folded and tucked in between the arms and legs and around the neck, so that it is in contact with every portion of the surface. The blanket is then brought up and folded over him, and he is left for three-quarters to one hour if the heart is normal. After the sheet and blanket are removed, he falls into a refreshing sleep in the course of half an hour, and within one to two weeks sleep recurs naturally at the accustomed hour, without any measures of the kind. The only precaution necessary is to apply a cold compress to the forehead beforehand. If the patient objects to the complete pack the body can be wrapped to the armpits alone, or the trunk alone. Great benefit is also derived in cases of insomnia due to gastro-intestinal as well as nervous disturbances from the wet abdominal bandage alone. The complete pack should never be given to children, as the surface is too extensive in proportion to their size.

Muenchener Medizinische Wochenschrift, June 27.

Milk Albumen, a Cheap Food for the Masses. W. PRAUSNITZ.—The abundance and cheapness of buttermilk would render it a valuable food product if it were not for its bulk and speedy decomposition. Siebold has perfected a process by which

it is mixed with sodium bicarbonate, worked at 70 C., with CO₂ introduced and the product evaporated to an odorless, tasteless powder—"Plasmon"—which can be sold at a profit for about ninety cents a kilo, and can be added to any dish, bread, etc., without affecting its flavor while immensely increasing its nutritive value. Professor Prausnitz' tests at Graz were made with the most scrupulous accuracy and double control, the feces analyzed in every case. They demonstrate that 8.07 per cent. was the largest amount of this albumin eliminated unutilized; the average, 6 and a fraction, proving that almost the entire amount is assimilated. A comparative table of the various food products on the market shows that the solubility, cheapness and constancy of the new product, with its great nutritive value and ready absorbability render it far superior to anything of the kind yet produced.

Bacteria in Aseptic Operations. DÖDERLEIN.—Instead of estimating by the results of the operations, the degree of aseptis secured, this Tübingen professor made comprehensive tests in "aseptic operations" lasting over half an hour, sowing scrapings of the wound, etc., at intervals. Cultures constantly developed, even when extreme efforts were used to realize aseptis, such as a damp sheet spread above the operating table, to collect the germs in the air, etc. and the operator in hood, mask and gloves on his hands like a negro's from the effects of permanganate. His conclusions are that the bacteria in the wounds are derived from the hands of the operator, from the underlying skin, as the disinfected epidermis scales off in the course of the operation proved among other facts by the almost complete absence of bacteria in tricot gloves after a long operation, if thin rubber gloves are worn under them. But instead of advocating the wearing of impermeable gloves during aseptic operations, he asserts that absolute freedom from bacteria is an unattainable ideal, and we might as well abandon our attempts to realize it beyond what is already accomplished in the ordinary well-managed aseptic operating-room. On the other hand, we must bend every effort to keep our hands free from pathogenic germs, wearing impermeable gloves in operating and examining septic or infected cases, and supplementing this precaution by assisting the organism to resist the ordinary germs that are constantly present, by every measure known to date, or that is yet to be discovered. In this direction lies the field for future achievements.

Wiener Klinische Rundschau, June 25.

Pseudopulmonary and Pseudopleural Sounds. O. ROSEN-BACH.—The writer called attention to these sounds some years ago, but few physicians bear them in mind, and thus applicants who are good subjects are sometimes rejected by examiners for life insurance companies, on the suspicion of lung disease, when in reality the sounds are due to the muscular contractions in the thorax in perfectly healthy persons, as he has had occasion to establish in a number of cases. The sounds deceptively simulate dry rales, and are most perceptible in vigorous, rather lean young persons. They can be artificially produced by electrically exciting and auscultating a muscle as it contracts. The sound only occurs during inspiration and continues when the breath is held at the maximum of inspiration. It is unaffected by coughing, expectoration, change of position, etc., although if there are transient catarrhal symptoms it cannot be positively differentiated until they are healed, when the sound will be found still persisting.

Gaceta Medica (Mexico), July 1.

Treatment of Prostatitis. R. LAVISTA.—A patient with severe prostatitis and retention, with symptoms of atheromatous arteriosclerosis, had a profuse hemorrhage after withdrawal of 5000 grams of urine, quite filling the distended bladder, which reached to the umbilicus. After a suprapubic incision the bladder was rinsed with hot water and saturated solution of antipyrin. The prostate was very much hypertrophied with a "bar" or transverse excrescence, which was removed and several furrows made in the lateral lobes with a galvanic loop. A large catheter was used to hold down and open the neck of the bladder, prostate and pubis, affording a sure guide for the cauterization of the parts desired without injury to others. The results were most satisfactory in every respect. The hemorrhage was arrested, the vesical cavity contracted and the permeability of the urethra completely restored from the first.

Societies.

Fresno County Medical Society.—This society met July 6. at Fresno, and elected the following officers: President, George A. Hare; secretary, W. T. Barr.

Wabasha County Medical Society.—At the annual meeting of this society, held in Plainview, Minn., July 13, the following officers were elected: President, E. H. Bayley, Lake City; vice-president, J. A. Slocumb, Plainview; secretary and treasurer, W. F. Wilson, Lake City. The next meeting will be at Lake City, on the second Thursday in July, 1900.

Tri-County Medical Society.—This society, comprising physicians from Ford, Iroquois and Vermilion counties, met at Danville, Ill., July 11. Officers were elected as follows: President, M. S. Brown, Danville; vice-president, B. S. Evans, Watska; secretary and treasurer, Leroy Jones, Hooperston. The times of meeting were changed from the second Tuesday in January and July to the first Tuesday in December and June.

Medical Congress of Latin America.—The government of Chili has invited all the governments, medical faculties and societies of Central and Southern America, including Mexico, to a grand medical congress at Santiago, Chili, toward the close of 1900. All the governments and most of the universities have already accepted. An international hygienic exposition is to be one of the features of the congress, and the German medical papers are urging manufacturers of sanitary and hygienic appliances for public and private use to send exhibits, as this is practically a virgin field in Latin America.

State Board of Health of Pennsylvania.—The thirty-third annual meeting of the board was held at Glenolden, Pa., July 12. Dr. Benjamin Lee, the secretary, in his annual address called attention to the resolution urging the establishment of a leper colony, which had been forwarded to the United States Marine Hospital service, at Washington. He also reported that the additional \$3000 needed to meet the expenses of the recent outbreak of smallpox, which had been forwarded to the Emergency Board, was promptly granted. Pollution of the Schuylkill was next considered and it was reported that new powers had been granted the Board of Health in the case of cities of the first class, and steps would therefore be taken to abate the practice of pollution of streams, by more stringent laws. The new ruling forbids the pollution of streams by deposits of excrement, whether from houses or boats. Ten new boards of health have been established in different parts of the state since the last meeting. In the opinion of Dr. Lee, \$5000 will be needed in controlling the epidemic of smallpox in the southwestern counties of the state.

Kansas City District Medical Society.—This society held its summer meeting July 6. Dr. M. B. Ward read a paper on "Myotomy for Uterine Fibroids," and Dr. Hal Foster one on the "Treatment of Broken and Deformed Nasal Septa." He insisted that the same care and attention given a broken limb, should be given a broken nose. Ash splints should be inserted to hold the broken parts in place until union had occurred. The drill and trephine can be used in slight deviations. In a great many cases a Bosworth saw acts excellently. The spoke shave is useful only in mild deviations. He described the Watson, Ash, Gleason, Ingals, Roe and Bosworth operations for correction of deviated septum. For severe cases he considered the Ash operation the one offering the best and most lasting results to the patient. Great care should be taken that no blood be allowed to enter the larynx while the patient is under the general anesthetic. The patient's head should be allowed to hang over the edge of the table in order that the blood may escape through the nostrils. He advocates using a solution of suprarenal capsule in the nose before doing the operation, as it prevents the blood from obstructing the field of operation.

The next meeting, October, 1899, will be the twenty-fifth anniversary of the society.

New Jersey State Medical Society.

Meeting Held at Allenhurst, N. J., June 27, 1899.

TRAUMATIC NEURASTHENIA.

DR. J. D. MCGILL of Jersey City in this paper classifies the neuroses as organic and functional; then the traumatic as depending on a neurotic diathesis, hereditary or acquired as predisposing causes, a shock and a wound as the exciting cause. He considered shock psychic and physical, as the chief cause in traumatic neuroses and discussed the pathology, the disease being due to a starved nucleus from vitiation of cell protoplasm.

PROGRESS, PROBLEMS AND PROSPECTS IN MEDICINE.

DR. JOHN BRYAERE of Trenton presented a paper on this subject, to appear in the JOURNAL.

EMBRYOTOMY AND TWO CESARIAN SECTIONS IN SAME PATIENT.

DR. J. C. MCCOY of Paterson read this paper. The patient, Mrs. F., a mulatto, aged 19, first pregnancy, had been in labor three days when he was called to her; now fatigued with vomiting for twelve hours. During pain the uterus would roll forward and assume an almost anteroposterior direction; small vaginal outlet, broad pubic arch, giving the impression of a pelvic canal contracted in all its diameters. The pains exerted no effect on the delivery. She was transferred to a hospital and at 1 a.m. an effort was made to apply the Tarnier axis-traction forceps under complete ether narcosis. After several futile efforts, version being impossible, the child still viable, the head was perforated, crushed with the cephalotribe and the body delivered piecemeal, operation occupying one and a half hours. Owing to the need of backward traction, the perineum was torn two and a half inches into the rectum. After removal of the placenta, the cavity of the uterus was thoroughly curetted with a dull irrigating curette followed by a thorough flushing with sterilized water. Bleeding having subsided, the upper portion of the vagina and rectum was packed with iodoform gauze, and the tissues cleansed with sterilized water. The tear in the rectovaginal septum was closed with interrupted sutures of fine silk. The separated ends of the sphincter ani muscle were united by deep silkworm gut suture and finally the perineum repaired. The recto-vaginal tear healed perfectly and sutures were removed on the tenth day. From this time all went well.

On June 15, 1895, he was again called to this patient, at full term and labor just started. Examination showed the head wedged in about the same position as before, and no progress. With the former experience, and the desire of the parents for a living child, Caesarian section was advised. She was removed to the hospital. Measurements gave distance between the anterior superior spines of the ilia $7\frac{1}{2}$ inches, between crest of ilia $8\frac{3}{4}$ inches, sacrepublic 5 inches, width of pubic arch at articulation $2\frac{1}{4}$ inches. Pains not being frequent she was given half an ounce of magnesia sulphate, followed by a high enema of water; next morning another high enema causing free evacuation of the bowels. She was then prepared in the usual manner for laparotomy.

At 10 a.m., June 16, median incision was made extending above the umbilicus, the uterus lifted out of the abdominal wound, wrapped in hot wet towels and firmly held by an assistant. Two sutures of silkworm gut were passed through the entire thickness of the abdominal wall above the uterus, which when tied closed the wound, preventing any undue exposure of the peritoneal cavity. An elastic ligature was passed about the cervical portion of the uterus, which was then opened in the median line anteriorly, incision extending close to the fundus; there was little bleeding from the incision. The membranes presented were ruptured, and the amniotic fluid escaped. The placenta was situated on the anterior surface of the uterus at the juncture of the middle third and directly under the line of incision; it was rapidly separated from the uterus, the feet

of the child grasped and it quickly delivered, the assistant gently kneading the uterus during this time. The uterus was then washed out with hot sterilized water, the cavity swabbed with 1-40 carbolic solution, and the organ well contracted. In removing the child, weight $8\frac{1}{2}$ pounds, the uterine wall was torn slightly at its upper portion at right angles to the incision. The uterine wound was closed by interrupted sutures of silk at intervals of one-quarter of an inch; these entering at the edge of the peritoneal surface of the uterus and passing down to the endometrium, the peritoneal surface being approximated with sutures of catgut and the abdominal wall closed with sutures through and through of silkworm gut; time one hour and ten minutes.

The child was put to breast at the end of twelve hours, and sutures in the abdominal wall removed on the eighth day, the patient leaving the hospital on the twenty-first day. At no time was temperature over 99 degrees. Six months later she had a slight discharge from the lower portion of the abdominal wound. It resembled that found in endometritis and on further examination I found that a probe could be readily passed through the abdominal fistula into the cavity of the uterus. Seven months later, after weaning the child, she had a bloody discharge from the sinus coincident with the menstrual flow. She declined any operation to close this.

November 12, 1898, at full term of pregnancy she was removed to the hospital for a second operation. The uterus was found adherent at the point of sinus in the abdominal wound, over a space of $2\frac{1}{2}$ inches. On either side of the old scar were bands of adhesions extending the entire length of the organ and across its cervical portion, these adhesions surrounding the field of operation, save at the fundus. Uniting, as they did, the anterior surface of the uterus to the parietal perineum, they made the operative field practically extraperitoneal. The cicatricial tissue about the sinus in the uterus extended over an area $1\frac{1}{2}$ inches in diameter. Under these conditions the uterus was not drawn out through the abdominal wound as before, nor was an elastic ligature placed about the cervical portion of the organ. The incision in the uterus was made along the line of the old wound. No trace of the sutures was observed, and there was slightly more bleeding from the uterine incision than before. The membranes were ruptured, placenta found attached as before, delivery accomplished, child weighing $7\frac{3}{4}$ pounds. Owing to the adhesions mentioned, supplemented by gauze packing above, thus far operation was practically extraperitoneal. At the point of fistulous tract in the uterine wall the cicatricial tissue was excised, and the opening in the uterus closed. In this instance the sutures were entered on the peritoneal surface of the wound in the uterus, and closer. Both tubes and ovaries were then removed; a wedge-shaped piece of uterus was included in the uterine end of each tube. The bases of these triangular spaces were then closed in the usual way. The cicatricial tissue in the abdominal wall was excised and the wound closed. Time from abdominal incision to delivery of child was nine minutes, operation complete in one hour, recovery uneventful, mother and child going home at end of fourth week.

In the house to which she went a case of diphtheria developed; both contracted this disease, the child dying.

The question might be raised as to relative value of symphysectomy and Caesarian section, or whether embryotomy might have been again performed. The external measurements of the pelvis were no less than one would expect to find in a woman of the stature and build of this patient, yet the conjugate vera was, owing to the extremely wide pubic arch and the unusually marked sacral prominence, contracted; this, coupled with the difficulty in removing the child at first labor, and the demand for a living child, seemed to justify the course pursued. While the external measurements of the pelvis may prove of great value to us in determining beforehand the probabilities

of a severe or an easy labor, we must take into consideration the size of the child, which can be but approximately determined, consequently any rules laid down as indications for the operation can be but relative. Given a case just subjected to embryotomy, with the extreme difficulty in removing the macerated child, he is inclined to believe that the Sanger-Cesarian in a woman before her powers have been lowered, is under favorable surgical conditions, fraught with well-nigh if not quite as little danger to the mother as the so-called more conservative procedure of embryotomy. In this case the woman was about and attending to her customary duties nearly as soon as after a normal labor. Indeed, she was left in better condition than after the embryotomy.

The Porro was not employed because the uterus was in a healthy state. The removal of the uterus must of necessity add to the dangers of a Cesarian and unless there be distinct and definite reasons, such as morbid growths, etc., it would seem that we can best conserve the welfare by non-removal. In this case I regret that in place of the double salpingo-oophorectomy, I did not follow the course of Crimail of Pontoise, in which, during the second Cesarian on the same patient, in order to provide against subsequent pregnancies, he passed a double ligature about the uterine end of each tube and divided the tube between the ligatures. Such a course, by allowing the ovaries to remain, would tend to relieve the patient of the various phenomena incident to the artificially produced menopause.

Too much stress can not be laid on the careful and methodic closure of the uterus. Time is an important factor, yet in my first Cesarian the fistulous tract might have been due to the fact that the sutures were not placed quite close enough together. Subsequently, the sutures were placed at shorter intervals and no superficial sutures were employed.

BLEPHARITIS DUE TO DEMODEX FOLLICULAROSUM.

DR. T. C. ARD of New York, in a report on ophthalmology and otology presented this topic. This acarus is found most frequently in the sebaceous glands of the face, without producing disease, yet it no doubt causes blepharitis by its presence in the follicles of the eyelids. The cilia fall out and itching is a prominent symptom; in suspected cases microscopic examination should be made and if the demodex is found, a 35 per cent. ointment of balsam Peru will rapidly effect a cure.

PROPAGATION OF BLEPHORRHEA NEONATORUM.

On this phase of his report, the Doctor cited DeWecker, who explains that the direct lodgment of gonococci within the conjunctival sac is next to impossible, so tightly closed are the lids of the child during labor. The outside is soiled and as soon as the lids are opened the infection would not be difficult. The length of the incubation period proves his assertion. It is three or four days and never less than two; in direct transmission, it would be twenty-four hours.

He spoke also of Elschnig's explanation of this association as hepatic disease leading to cholemia and jaundice impairs the secreting capacity of the conjunctiva. This leads to increase in the xerosis bacilli in the conjunctiva and the latter germs bring about desiccation, cornification and fatty degeneration of the epithelia. Thus the avascular cornea goes to necrosis and ulceration. If pathogenic bacteria are present they may develop in the wound with possible general infection; if absent, the affection is benign in character.

ANIMAL EXTRACTS IN OPHTHALMOLOGY.

DR. ARD pointed out that Lagrange has been using a solution of vitreous humor of an ox in sterilized glycerin, and after maceration a filtrate is prepared for use by the mouth or subcutaneously. The remedy was used in cases of escape of vitreous in cataract operations and detachment of the retina. Improvement followed but might have been spontaneous.

INSTALLATIONS OF ANTIDIPHTHERIC SERUM INTO EYE IN DIPHTHERIC CONJUNCTIVITIS.

Mongour observed that during an epidemic of this trouble antitoxin when given subcutaneously was successful as regards the general results, but that several children lost their sight. The next series of cases, seven, was treated by direct installation of the serum into the sac in conjunction with the other injections. He was successful in every way.

HYDROCHLORIC ACID APPLICATION TO BONY WALLS OF TYMPANIC CAVITY AND MEATUS.

DR. ARD said that Bull of Christiania proposed this remedy some years ago. He concludes, after years of experience, that the treatment is not indicated if the ossicles are diseased. When dead bone is visible he applies cotton soaked in the acid—4 per cent.—and leaves it in contact. In a cavity he introduces the cotton into it, removes it next day; applications a week apart. The acid gradually decalcifies the affected bone and acts like curettage. It is a strong antiseptic and cures from one-third to one-half of all treated.

CLOSING PERFORATED EAR DRUMS.

Concerning Okunef's method, Peltsohn has used it with great satisfaction for the past year. It has been ignored in standard works on otology, but the results of the past few years have been collected and Peltsohn regards it as a most brilliant addition to our resources. The method is simplicity itself. All perforations tend to close, but the increased proliferations of epithelium at the margins of the perforation prevent the fulfillment of this tendency. By cauterizing these epithelial accumulations with trichloroacetic acid the granulations once more reassert themselves and close the aperture. Within a short time a number of eminent otologists have adopted this method with great success.

OPERATION FOR SINUS THROMBOSIS.

In a contribution to the clinical stages and to the technic of the operation, Whiting divides the history into: 1. The presence of a thrombus, parietal or complete, not having undergone disintegration and accompanied by slight or moderate pyrexia, rigors being usually insignificant or absent. Diagnosis is made in this stage, consequent on operation for mastoiditis, and the only safe-guard against encountering the increased gravity of the second stage is to operate immediately on the recognition of the first stage. 2. The presence of a parietal thrombus, or a complete one which has undergone disintegration and resulting systemic absorption characterized by frequent rigors and pronounced septicemic fluctuations. 3. The presence of a thrombus, parietal or complete, which has undergone disintegration with systemic absorption accompanied by rigors, rapid and great fluctuations of temperature, central and peripheral embolic metastases terminating usually in septic pneumonia or enteritis. He gives a complete and exhaustive description of the symptoms of each stage and a clear exposition of the operative procedure. In concluding the article he says that it is not too sanguine to believe that as our knowledge of symptomatology and technic improves there should be no fatalities in the first stage of sinus thrombosis; the second stage should furnish only an occasional fatal result and the third stage should, in the absence of gangrene of the lungs and purulent meningitis, be regarded as a still hopeful surgical procedure.

Officers were chosen as noted in the JOURNAL, July 8, p. 100.

Medical Society of the State of Colorado.

Twenty-Ninth Annual Meeting Held in Denver, June 20-22, 1899.

KIDNEY DISEASES.

DR. LEONARD FREEMAN reported several cases.

CASE 1.—A woman 23 years of age. She suffered from pain and tenderness in the region of the left kidney, the pain follow-

ing the ureter to the bladder and often running down the thigh. Physical examination revealed nothing. Urine contained crystals of oxalate of calcium, few hyaline casts and red blood-corpuses. The increase of pain, tenderness and blood in the urine in motion, jolting the body or percussion of the lumbar region, with decrease of the symptoms during rest in bed, pointed to calculus as a probable cause. At the operation, in which the kidney was freely incised along its convex border and reunited by catgut sutures, nothing was found except an undue movability of the organ. Nephrorrhaphy was done, and union by first intention, without drainage, was obtained.

The author concludes from this case that blood in the urine may be due to movable kidney.

CASE 2.—This case presented symptoms similar to those of the above. The urine was acid, contained a few red blood-corpuses, some hyaline casts, and of high specific gravity. A movable kidney was suspected, but treatment directed to the diminution of acidity and specific gravity of the urine cleared up the symptoms in a few days.

CASE 3.—A man, 30 years old, had noticed all his life a tumor on the region of the left inguinal canal. This was supposed to be an undescended testicle. At irregular intervals inflammation and swelling took place. At the operation what was supposed to be a testicle was found to be an undeveloped kidney lying in the inguinal canal, and a hernial sac lay by its side. The kidney was filled with a black fluid and its ureter was a mere fibrous cord resembling a vas deferens. A radical operation for hernia, castration, and nephrectomy was simultaneously performed, an uneventful recovery resulting.

CASE 4.—A boy, 13 years old, fell fifteen feet from a tree, striking his left side. He suffered great pain and passed blood in the urine. Temperature was 103, pulse rapid. On the third day an exploratory incision was made and the kidney was found torn almost in two, and surrounded with a large quantity of fluid blood and urine. Recovery after drainage was complete.

CASE 5.—A man 35 years old, was shot in the left side. Extravasation of blood and urine followed. Incision was made down to the kidney for drainage. At the end of several weeks secondary hemorrhage set in. It became so profuse as to almost exsanguinate the patient. As a desperate resort a nephrectomy was rapidly done without anesthesia. The patient rallied under the use of saline solution and ultimately recovered.

CASE 6.—A man about 70 years old suffered from profuse renal hemorrhage for which no cause could be detected. He had been addicted to the eating of crude opium, which had been suddenly taken away from him before the hemorrhage began. Death from exsanguination followed. The autopsy revealed no abnormality in the kidney.

CASE 7.—A man 35 years old, suffered for several years with recurring abscesses of the prostate gland, following a perineal operation for stone. There was great irritability of the bladder; moderate fever; no tumor could be felt. It was decided to cut down upon the kidney. Five abscesses were encountered containing several pints of pus. The kidney, which was incised and drained, was found pushed over to the median side. The bladder symptoms at once disappeared and the patient made an excellent recovery. The author called attention to the fact which is not widely appreciated: that irritability of the bladder may be due to affections of the kidneys.

CASE 8.—A woman of 18 years, since 4 years of age had complained of pain and tenderness in the region of the right kidney. There was no history of renal colic or of passage of gravel. Jarring the body or pounding on the lumbar region produced sharp pain. The urine contained a considerable quantity of cystine crystals. While the patient was under observation she fell down a flight of stairs, striking heavily on the affected side. The pain at once absolutely disappeared; tenderness also rapidly subsided. The abrupt cessation of the symptom would seem to point to the existence of a stone which suddenly under the influence of the trauma, shifted its position

and ceased to be a source of irritation. An interesting fact was noted, i. e., the patient during the last five months could not wear a silver ring as it turned black almost as rapidly as it was polished. The explanation of the phenomenon undoubtedly is that those affected with cystinuria exude a certain amount of sulphur through the skin.

RESECTION OF LARGE INTESTINE.

DR. E. J. A. ROGERS reported the following:

CASE 1.—Mrs. J. M. A., aged 49, mother of thirteen children, and with previous health good, December 17, 1897, was taken acutely with pain in the bowels and tenesmus, but passed only gas and blood. After taking a cathartic she began vomiting and became distended. She came to the hospital on the 20th. A tumor could be distinguished on the left side between the umbilicus and the anterior superior spine of the ileum. The abdomen was opened by a central incision, and the peritoneum was found filled with a dark foul-smelling fluid.

The tumor proved to be a much-enlarged sigmoid and descending colon; it felt quite solid and appeared gangrenous. A longitudinal incision proved the mass to be made up of the thickened walls of the bowel, which almost obliterated the lumen of the canal. The mesenteric glands were enlarged. The upper portion of the rectum appeared fairly healthy, and a double ligature was placed around it as low down in the pelvis as it was possible to reach. The upper portion of the bowel near the gangrenous area was also doubly ligated. The mesentery was then tied off as short as possible, and the intervening bowel excised. So much of the descending colon was removed that it was hard to find a place to make an artificial anus.

The operator forced his finger from within outward up close to the margin of the ribs and as far posterior as seemed practicable, and cutting through the skin over this point, separated the muscle fibers, and forced the peritoneum into the ring thus made. He then opened the protruding sac of the peritoneum and drew the divided end of the colon into it. He stitched the ends of the ligature into the skin toward the lumbar region, some distance from the opening, thus holding the bowel in place and leaving it unopened. The central incision was then closed. The second day he cut into the bowel to allow the gas to escape. She was fed by artificial enemata. The protruding bowel was allowed to slowly necrose away. Gradually the bowel assumed the regular functions. She was discharged Feb. 2, 1898. Examination of the tumor showed the disease to have been croupous colitis.

CASE 2.—E. C., a stonecutter, aged 43, in 1895 began to suffer from pain in the abdomen, usually in the evening, which condition lasted for three months. In November, 1897, while having a severe cold and coughing much, the pain first localized itself in the right side of the abdomen, and he began having black tarry stools several times each day. His appetite failed, and he lost thirty-five pounds in weight. On Aug. 10, 1898, he had a severe chill which prostrated him. A movable tumor then occupied the lower right abdomen. The abdomen was opened on the 16th, along the median line, and the tumor was found to be a large carcinoma involving the cecum, part of the ascending colon, the omentum and the transverse colon. The glands of mesocolon were enlarged.

The omentum was ligated off, and the transverse colon beyond the tumor was clamped, also the ileum above the valve, and the bowel divided at these two places. The layers of the mesocolon were clamped as near the vena cava as possible, and the entire mass was cut away and removed. The open end of what remains of the transverse colon was closed, and approximated to the end of the ileum and made an end-to-side anastomosis with a Murphy button. The parts removed included about six inches of the ileum, the cecum, the ascending colon, about two-thirds of the transverse colon and most of the omentum.

The recovery was very satisfactory. The patient left the hospital on September 22, the button not passing until that date, thirty-six days after the operation. On leaving the hospital

he weighed 140 pounds, and now weighs 195, and has for the past month been at work at his trade.

FUNCTIONAL AFFECTIONS OF JOINTS.

DR. GEORGE B. PACKARD said in part: While this pseudarthrosis may be induced by an exhausted nervous system, and occurs frequently in persons of an emotional temperament, usually in women, yet it is sometimes seen in persons of an opposite temperament, and from various causes. Therefore, he thinks it should not be considered hysterical in all cases, but rather an indication of some weakness about the joint or nervous system. They simulate organic diseases so closely that it is sometimes with the greatest difficulty that a correct diagnosis can be made. The importance of distinguishing these functional affections from the inflammatory condition should be particularly emphasized because the treatment is diametrically opposite—in one case rest, in the other activity.

As etiologic factors he regards slight traumatism and muscular weakness as the most frequent. These cases not always being recognized as such, afford many opportunities for "remarkable cures" by charlatans. Presenting, as they do, many if not all the subjective symptoms of organic disease, the recovery from lameness seems almost miraculous to the uninitiated. In treating these cases it is necessary to overcome local pain and disability. When the spine is the seat of the trouble he found it necessary to use a light flexible support until the patient becomes stronger. He uses cold sponging, friction, massage and light gymnastic exercises.

In functional affections of the knee, hip and ankle it is also necessary to, in some cases, temporarily protect the joints until the circulation and muscular support has been improved by massage, electricity and passive motion.

OUTLINE RECORDS OF FLEXION AND EXTENSION AFTER SERIOUS INJURY OF ELBOW-JOINT.

DR. GEORGE W. MIEL recommends, in cases presenting difficulties and concern for restoration of function, a method of accurately ascertaining and indicating the progress of treatment: An outline record of flexion and extension; a tracing taken from time to time, with date of each properly placed. This is effected by outlining the whole arm—hand omitted—against heavy pulp-board interposed between the arm and body. The original tracing should outline the whole arm at its fullest attainable flexion and extension; in subsequent tracings, with the arm proper resting between the original outlines, the forearm alone need be outlined. Such an outline record interests the patient, usually encourages him, and perhaps satisfies him. For the surgeon it is a reliable guide, a satisfaction, and a record of scientific interest.

BONE NECROSIS FOLLOWING TYPHOID FEVER.

DR. FRANK FINNEY reported four cases of bone necrosis following typhoid fever, out of forty cases he has in his private practice. Three of the four cases involved the sixth rib on the left side almost exactly at the same spot. None of the cases recovered without an operation. The general health of the patients did not seem to be greatly impaired by the long-continued suppuration, but the disease did not show any tendency to recovery without operative interference.

(To be continued.)

California Academy of Medicine.

June Meeting.

(Concluded from page 163.)

SYPHILITIC EPIDIDYMITIS.

DR. DUDLEY TAIT presented a specimen of this condition. The patient, a Chinaman, gave the following history: Age, 25 years; contracted syphilis four and one-half years ago; has had several series of papule-squamous eruptions in that time; has received no treatment at any time; at present has a few papules on his back and chest; no bone or visceral lesions of any sort are present. Two weeks prior to our examination he

for the first time noticed a swelling in the right epididymus, the size of a bean, and sufficiently painful to compel him to ask for assistance. A suspensory was advised by the attending physician, who diagnosed gonorrhoeal epididymitis. Examination six days later, showed in the upper portion of the epididymus, a hard, indolent nodule, with a diffuse swelling diminishing downward toward the tail—globus minor. Forceful palpation elicited slight pain, but much less than normally. The testicle was apparently normal, as was also the cord. The opposite side was healthy. There was no history and no sign of gonorrhoea and no history of traumatism. Syphilitic epididymitis was diagnosed. The patient refused any treatment by mercury, and demanded extirpation of the diseased tissue. This was at once done in accordance with his wishes, the result being a very fine specimen of an unusually rare condition, and entire relief of the trouble.

Microscopic sections were prepared by Dr. Wm. Ophuls, Professor of Pathology at Cooper Medical College; the appearance of the sections is peculiar: A diffuse sclerosis, together with arteritis, both endo- and peri-, may be very clearly seen in any of the sections. (The specimen was exhibited and was indeed a most interesting one. The glandular structures of the testicle seemed to be quite intact.)

A few words as to the status of this lesion may not be out of place, for the reason that its very occurrence has been denied and disputed by some writers, and no mention of it is to be found in the English text-books. For a long time the existence of syphilitic epididymitis was bitterly contested, especially by certain Germans, Sigmund and Koerber in particular. The French were the first to describe the affection. Dron, in 1863, gave a very excellent account of this complication of syphilis; Fournier described the condition and gave it the name of "epidyme secondaire;" Balme, in his inaugural thesis, 1876, also treated of this lesion; other writers of note on syphilitic epididymitis are Mauriac, Ténédat, Cuilleret (Lyons, 1890), Reclus, in "Syphilis of the Testicle," and Fournier (1899.)

The characteristic features of the disease, or variety of disease, are: 1. Its location, it being almost always limited to the epididymus, and seldom extending to the testicle. 2. Its early development. Fournier noted it six times during the seventh month; twice in the first ten or eleven months; Balme 8 times in from the second to the fourth month, and 6 times in from the eighth to the fourteenth month; 8 times between the second and the eighth year of the disease. It is generally unilateral and belongs to both the secondary and tertiary periods. On account of the frequency of the syphilitic lesion of the testicle during the secondary period, and of the frequent occurrence of syphilitic epididymus during the tertiary period, Reclus proposed the appellation of "syphilitic epididymitis," instead of "epidyme secondaire" of Fournier.

It is mostly found in grave, secondary, untreated syphilis. The lesion is generally not noticed by the patient in the early stages; it is usually first detected by the physician. This reminds one of Ricord's advice to physicians in charge of syphilitic wards: "Watch the patients' testicles more than the patients themselves." The nodule generally involves the head of the epididymus-globus minor, contrary to tubercular lesions which have a predilection for the tail of the epididymus. The nodule is hard, resistant and indolent, except in certain rare instances where the invasion is quiescent. When the lesions have been left to themselves, without treatment, there may occur a slight hydrocele. The nodular mass increases to the size of a nut, seldom larger, then remains stationary, retaining its hardness. Diffuse infiltration is very rare. Fournier likens the nodule to a bean in a healthy epididymus. Syphilitic epididymitis does not interfere with the spermatic functions. In one of Dron's cases with bilateral lesions, spermatozoa were present. The knowledge of these lesions of the epididymus is

of considerable importance, especially in relation to tuberculosis. The evolution of tubercular lesions is more diffuse, the nodules are multiple, the results of palpation are altogether different: the cord, prostate and vesicles are frequently involved, and, as already mentioned, the lesions most frequently involve the tail end of the epididymus. The differentiation from gonorrhoeal epididymitis in a syphilitic subject may give rise to some doubt, but its invasion is generally more acute, and the lesions more diffuse and painful. The results of mercurial treatment are miraculous in syphilitic epididymitis. The iodid is seldom necessary.

SARCOMA OF TESTICLE.

DR. TAIT also presented another pathologic testicle, with the following statement and history: The patient, a Chinaman, aged 74 years, a merchant, presented himself with a scrotal tumor about the size of an adult's head. It was irregular in outline and in consistence, and extended to the external orifice of the inguinal canal. The skin was normal and non-adherent. The veins were slightly enlarged, but there was no enlargement of the inguinal glands. No lumbar glands were discernible. The attending physician had tapped the mass at the lowest point, anteriorly, thinking it to be a hydrocele. A few drops of cystic fluid slightly sanguinolent, escaped. The tumor was extirpated without difficulty after securing the cord and vessels en masse; the tumor was stripped downwards, and proved to be the very rare sarcoma of the testicle.

Sarcoma is exceedingly rarely met with in this region. Gurtt, twenty-three years in Vienna hospitals, records 16,637 tumors. Of these, 848 were sarcomata, and but 45 of these occurred in the testis; 11,131 were carcinoma, with 64 occurring in the testis. German and English records show but 114. Sarcoma of the testis exhibits some interesting features. The nearest glands are almost always involved, which partly explains the extreme frequency of abdominal involvement through metastasis. Like carcinoma, the disease does not extend to the contiguous tissues. There is generally a history of traumatism or retained testicle. As to the age of most common occurrence, Virchow thought the young and the old most commonly troubled, but Kober's statistics place the period of greatest danger between the years of 20 and 50. Clinically, it is impossible to make a differential diagnosis from carcinoma. It may be mistaken for hematocele or hydrocele, as in the case reported by Dupuytren and Kocher. Exploratory incision, under cocaine anesthesia, should always be made. The prognosis is always grave, though the results of operation are frequently very gratifying. Kocher was the first to call attention to the fact that it is quite impossible to determine the prognosis from the microscopic sections, as the evolution of tumors of the testicle is very variable.

DR. J. F. McCONE.—I removed a sarcoma of the testicle, some five years ago, which was very similar to the one presented by Dr. Tait. It was, however, only about one-half the size, and there was in the sac about a half pint of fluid. Externally, the tumor measured 9 by 12 inches in circumference. The sarcoma itself was 5 inches long by 3 in diameter. The microscopic sections showed a round celled sarcoma, but some doubt has been thrown on the diagnosis, owing to the fact that the mass was removed some five years ago, and the patient is still alive. Thirteen years before the patient had had gonorrhoea and orchitis, and eight years before there was some slight injury while wrestling. This was all the history that could be ascertained. The patient had been tapped twice for hydrocele by a homeopathic physician, and at the second tapping he stated that the patient could not live very long, no matter what was done.

DR. D. W. MONTGOMERY.—I do not exactly remember the microscopic picture, but I am sure the tumor was a round celled sarcoma, both microscopically and macroscopically. It

is not at all fair to question the diagnosis simply because the patient has not yet died. I recall a similar, and very interesting case, which occurred in a patient of Dr. Chismore's some years ago. The patient was himself a doctor, and received an injury during a runaway accident. No trouble was noticed at the time, but later a lump appeared. Some slight inconvenience was experienced from the time the lump made its appearance. It developed into a sarcoma which was removed by Dr. Chismore. One year later, however, the patient died from abdominal involvement.

DR. McCONE.—I would like to ask, in reference to the patient I operated on, whether any cases are recorded of recurrence as late as five years after operation?

DR. TAIT.—I know of one case, recorded by Kober, of recurrence after six years.

TREATMENT OF HYDROCELE.

Dr. Tait then introduced this subject as being somewhat akin to the matters just discussed. He said that each man seemed to have some special treatment which he employed in all cases of hydrocele, irrespective of the etiology of the excess fluid. The factor of causation did not seem to be very much considered, so far as he could ascertain, and all the cases were treated alike. In his opinion, it was obviously improper to treat a hydrocele in an old man, where the fluid had been slow in accumulating, and was probably due to some slight lesion of the tunica, as one would treat a similar condition in a young subject, the fluid accumulating more rapidly and indicating a decidedly different condition of causation—tuberculosis, cysts of the epididymus, etc. He strongly advocated the exploratory incision, under cocaine anesthesia, to determine the nature of the cause in all such cases, and then the modification of the treatment accordingly. The discussion was participated in by the members present.

SKULL FRACTURE.

DR. F. B. EATON reported a case of unusual fracture of the base of the skull, with certain eye symptoms, in a man about 26 years of age, the history being about as follows: He had been struck on the side of the head by a man's fist, one night, while walking along the street. The police were inclined to think the blow had been delivered by a "jack," and not simply by the fist; but this point is still an open question. The blow was not, however, severe enough to produce unconsciousness, and the man went on to his home. He was simply a trifle dazed. The next morning there was pain in the left side and shoulder, with later pain in the left eye, and headache. Four or five days later he experienced a feeling as if something were behind the eye, trying to push it outward, and a week later internal strabismus was apparent. He could hear, constantly, a quite severe noise, seemingly in the head. The strabismus passed away, but later returned. Some four months after the injury had been received, the left eye protruded quite noticeably outward and downward; there was perceptible pulsation on touch and a loud bruit could be heard with the stethoscope. The conjunctiva was congested. The ophthalmoscope showed the disc to be somewhat paler than the other, with vessels distended. The vision was but little lowered. The vision of the right eye was 20/15 and the left eye 20/20.

The diagnosis was fracture of the base of the skull, passing through the cavernous sinus, with a rupture of the internal carotid artery into the cavernous sinus. Dr. Eaton did not have a chance to test the facial sensitiveness, but believes there was, or would shortly have been, some facial anesthesia, and that the only thing was to ligate the common artery on the left side; the diagnosis and opinion were confirmed in consultation. Later, at St. Luke's Hospital, the operation was done with entire relief of the troublesome symptoms.

THE

Journal of the American Medical Association

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance	\$ 5.00
Foreign Postage	2.00
Single Copies	10 Cents

In requesting change of address, give old as well as new location.

Subscriptions may begin at any time and be sent to

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
No. 61 Market Street, Chicago, Illinois.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, 100 Washington St., Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting, of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

Those new members of the Association should send their annual subscription direct to the Treasurer, Dr. Henry P. Newman.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the Editor, and all communications relative to the business of the JOURNAL, proof-sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 61 Market Street, Chicago.

Original communications are accepted with the understanding that they are exclusively contributed to this JOURNAL.

SATURDAY, JULY 22, 1899.

DEGENERACY OR OCCUPATION STRESS.

Recent analyses of prominent literati and scientists exhibit a tendency to confuse the neuroses arising from acquired neurasthenia with the neuroses of a similar type produced by degeneracy. The discussions of Zola's mental and physical constitution by Lombroso, Nordau and Arthur Macdonald betray traces of this confusion between congenital and acquired nervous states. The imperative ideas or obsessions are common to both, and it is on these that most stress has been laid as evidence of degeneracy. The occurrence of obsessions is largely due to the disturbance of the ego; that co-ordination of clear states of consciousness, of obscure states of consciousness and of physiologic states which, though unaccompanied by consciousness, are not less but even more effective than the conscious states. The automatic mental inhibitions last mentioned exercise an enormous influence in removing to the unconscious mental background ideas foreign to the general training of the individual or to his sense of major or minor morality. Many of these ideas are, however, mentally registered, unconsciously to the individual, to be reawakened in states of nerve tire produced by physical exhaustion or disease. In this way is produced the so-called subliminal consciousness of the psychologist, which is a lower and not a higher phase of consciousness. Many of the linguistic and other marvels narrated of this subliminal consciousness fall under the category of automatic remembrance, like the case narrated by Coleridge: A 24-year-old servant was seized by a nervous fever with delirium, during which she incessantly spoke Latin, Greek and Hebrew with a very distinct enunciation. The girl, before her illness,

had been a simple, unlearned, harmless creature. The attendant priest referred her case to "possession of a very learned devil."

This explanation did not suit the attending physician, who found that she had been for several years after the age of nine an inmate of the family of a Protestant clergyman, whose constant nightly habit was to read passages corresponding to the girl's ravings, from his favorite books, walking up and down a narrow passage near the girl's kitchen.

Not only during states of delirium, but also during states of adynamia which precede delirium, do such ideas rise into consciousness and trouble the possessor as being foreign to his own mentality. In ordinary life much is unconsciously assimilated by the mind, which remains without association with the daily life of the assimilator. This is shown in the use of coarsely obscene terms by refined modest women during the emotional disorders produced either by pregnancy or menstrual disturbance. The occurrence of the various 'phobias and other obsessions, with their resulting imperative acts, are an expression of this condition. Indeed, the mental processes, of whose operation as well as their results the mind is conscious, are really an expression of the same defect. The conscious mental process betrays, as Herzen¹ has shown, an imperfection of the cerebral organization, for it indicates the presence of a new unusual activity which deranges the equilibrium, the innate or previously acquired automatism, and which does not find a well-formed mechanism ready to discharge it. The conscious mental process is the transitory phase of an inferior to a superior cerebral organization. It expresses novelty, incertitude, hesitation, groping, astonishment, imperfect association and incomplete organization, a want of promptitude and exactness in transmission, a loss of tenure in the phenomena of reaction. It indicates that the nervous paths are not sufficiently cleared or distinctly enough traced to permit, without destruction in the final effect, reflex movements or reflex ideational sensations.

A sudden shock, therefore, whether mental or physical, whether occurring in a degenerate or in neurasthenia which has been acquired, may lead to imperative conceptions. As these are accompanied by cerebral circulatory disturbances and by states of anxiety and uncertainty, there is likely to be irregular cardiac action and with it irregular action, noticeably of the liver, kidneys and gastro-intestinal tract. It is a matter of common observation that the kidneys react to this condition. The frequent passage of pale urine in anxious states is a common observation. These conditions, however, must be referred to a physical cause in the shape of vibrations of the nerves of sensation and to the physical reactions produced by these vibrations. Through these circulatory psychic and nervous interactions, a vicious circle is set up and the ordinary gastro-intestinal, hepatic, renal and genital phenomena of neurasthenia of temporary dura-

¹ Journal of Mental Sci., 1884 and 1885.

tion occur. The appearance, therefore, of obsessions and of other neuropathic phenomena may be purely a product of causes arising in an individual from overwork, mental or other shock, and in no way indicate degeneracy. This last view that such phenomena must be the product of degeneracy, vitiates many valuable researches on the subject. Indeed, the whole Lombroso school is permeated by errors of this kind. These errors are the more striking since a century ago Tissot² laid great stress on the factor which produced in literati what have been excellently termed occupation disorders. Many of the nervous phenomena occurring in men of letters were referred, and with reason, to worry and uncertainty produced by circumstances connected with finance or their family life, and entirely disassociated from either their genius or from their heredity. The secondary influences of this acquired neuropathy, however, may produce, as Dr. E. S. Talbot³ says, a neurasthenia. Practically the neurasthenic in regard to his organs has taken on a degenerative function, albeit not degenerating in structure, since the restlessness of the organ is a return to the undue expenditure of force as it is unchecked by the central nervous system. Through the influence of various exhaustion agencies the spinal cord and the brain lose the gains of evolution and the neurasthenic is no longer adjusted to environment. Since the reproductive organs particularly suffer, children born after the acquirement of nervous exhaustion more or less checked in development, as the influence of atavism is healthy or not, repeat degenerations in the structure of their organs, which in the parent were represented by neurasthenic disorders in function. As the ovaries of the neurasthenic woman generally exhibit prominently the effects of the nervous exhaustion, the offspring of these do not retain enough vigor to pass through the normal process of development. For this reason genius very frequently leaves no posterity. The influence of the acquired "occupation disease" comes into play. Burns' genius led to dinner invitations, whence alcoholism. His sexual excess arose from the fact that hysterically sentimental females are attracted by the glare of genius and notoriety, like birds by a lighthouse lantern. From this springs sexual excess and abnormal marriages. The tendency to regard genius as irresponsible, based on the morbidity theory, tends to increase these factors of "occupation disease." In dealing, therefore, with the question of degeneracy in any person, care should be taken to demarcate it and its stigmata from acquired neurasthenia and its stigmata. The error has been made of attempting to separate mechanical genius from that of literati in respect to degeneracy. Dr. H. Gradle, at the Chicago Evolution Club, in 1894, asserted what was subsequently re-echoed by Dr. James Wier⁴ that (a fact not noticed by Lombroso or any other writer) "mechanical geniuses or those who for the most part deal with material facts do not as a rule show any signs of degeneracy.

Darwin, Galileo, Edison, Watts, Rumsey, Howe and Morse prove the truth of this assertion. It is only the genius of estheticism, the genius of emotion, that is generally accompanied by unmistakable signs of degeneracy." This error is an a priori one not based on a study of the authors quoted, or the lives of the geniuses cited. Lombroso⁵ points out that Darwin, among other stigmata of degeneracy, had a cretin-like physiognomy; that he stammered and that also in other respects he was a neuropath. Nisbet points out⁶ that the genealogy of Charles Darwin illustrates many of the neuropathic aspects of genius. He also shows that Galileo was a victim of neuropathy and at times suffered from melancholia, and cites stigmata in the family of Watts. Enough has been cited to show that the mechanical genius and man of science suffers as well as the esthetic class. This error is constantly made in discussing the nature of genius. Neither mechanical ability nor scientific acumen is an impenetrable cuirass against hereditary defect or occupation stress. Although science is less likely to lead to defect than the emotional state of the poet, still the great element of defect in poet and scientist alike has been financial anxiety or worry over success. Where these are removed, poets and scientists enjoy comparatively long life and good health when these are not interfered with by hereditary defect or acquired disease. The error involved in this confusion has a serious clinical aspect. From the notion that obsessions or imperative ideas are products of degeneracy alone, arises too often the ominous prognosis given to neurasthenics, which is fatal to their recovery.

FACTS AND THEORIES RELATING TO AUTOINTOXICATION.

In an address delivered before the Philadelphia Pathological Society,⁷ Chittenden states that as long as the normal rhythm of nutrition is maintained and the organs of secretion functionate normally, there is little occasion for noting the character of waste products of changes in the tissues. In disease conditions, however, the chemical nature and the physiologic action of these so-called waste products, more or less common to all active cells, demand attention.

It needs but little experience with the thyroid and suprarenal glands, for example, to learn that diminutive organs possess physiologic power out of all proportion to their size. The little groups of cells which constitute these glands manufacture substances which exercise a tremendous influence, directly or indirectly, on general metabolism. These substances may not perhaps be directly toxic, their specific action being perhaps rather in the line of prevention of formation of toxic substances elsewhere in the body. The metabolic processes are so intimately connected that disturbance of function in a small group of cells may indirectly modify processes going on in remote parts of the body. "The severing of a

² *Maladies des hommes de lettres*, 1798.

³ *Degeneracy, its Causes and Effects*.

⁴ *Medical Record*, June 12, 1894.

⁵ *Man of Genius*. ⁶ *Insanity of Genius*.

⁷ *Proceedings Path. Soc. of Phila.*, June 1, 1899.

single strand in the skein may result in an entanglement fatal to life itself."

Normal products of katabolism may be distinctly toxic. Normally the body is protected against the toxic action by the rapid removal of these products, or through their conversion into harmless substances. Interference with either of these two processes may be dangerous to the organism. Toxic substances once formed may by their influence on metabolic processes increase the deviation from the normal. This notion of autointoxication does not exclude another form of toxemia, namely that resulting from absorption of products formed by intestinal bacteria.

Chittenden would therefore recognize the possibility of autointoxication resulting either because of the formation of normal products of tissue katabolism in undue amount, or on account of lack of speedy elimination or transformation. He then gives the evidence at hand to show that normal products of metabolism may be toxic; in muscle katabolism, as well as in katabolism in many glandular organs, the alloxuric or nuclein bases form part of the product. Among these substances is adenin, which has a marked toxic influence on dogs, in which it produces vomiting, refusal to take food, and after a few days death. Post-mortem shows intense gastro-enteritis, no matter whether the adenin is introduced subcutaneously or by way of the mouth. Especially noteworthy is the action of this substance on the kidney. Albuminuria, with leucocytes, granular and hyaline casts, results. Peculiar spheroliths, of more or less crystalline structure, are deposited in the kidney tubules; at the same time an abundant interstitial cell accumulation takes place.

Minkofski, to whose experiments we are principally indebted for these observations, finds that these spheroliths are composed mainly of uric acid. This shows that after the injection of adenin the excretion of uric acid from the urine is greatly diminished. At the same time there occurs a deposition of uric acid throughout the tissues of the kidney, accompanied by inflammatory changes in this organ. The exact source of the uric acid in this instance has not been established.

Hypoxanthin, a substance of similar origin, on the other hand, does not cause any disturbances in the body and is decomposed into uric acid and allantoin. Xanthin cannot resist changes within the body, but becomes more resistant when a methyl group is added to the xanthin molecule, at the same time as the toxicity increases. Of the resulting compounds, such as heteroxanthins, theobromin and caffein, in frogs heteroxanthin causes muscular rigor and paralysis of respiration.

Urea has long been considered as formed in the liver out of ammonium carbamate. When dogs from which the liver has been removed are fed with meats, symptoms of uremia develop, and the ammonium salt is found greatly increased in amount. The ammonium carbamate is formed in all the tissues and organs of the body, and its toxic action is neutralized in the liver when it is

converted into urea. When this function of the liver is interfered with, ammonium carbamate accumulates and causes autointoxication.

In certain conditions acetone is a common product of metabolism. It increases as fat is decomposed in the body and therefore acetonuria becomes especially marked in absolute fasting or when a fat diet alone is given; it is not present in a proteid diet. It is formed alike from body fat or from fat in the food, and thus it may make its appearance during hunger, when the body fat is being decomposed. Therefore, in order to prevent acetonuria one would give carbohydrates, in order to protect the fat of the food and of the tissues. The production of acetone is consequently also due to cell metabolism. Lack of carbohydrates leads to increased decomposition of body fat, resulting in a change in the proportion of secondary katabolic products eventually leading to acetone.

As to autointoxication from the intestinal tract, it has been shown by Herter's experiments on dogs and rabbits that indol is toxic, but in man its toxic power is slight. The production of toxins of various kinds is without doubt in many cases the initial cause of disturbances in metabolism, but no definite toxic body can as yet be held directly responsible for the results which eventually may appear. This, that, or the other substance, produced in due amount, may simply set in motion a chain of events from which is developed a chain of symptoms remotely connected with the primary action of the toxin. The sensitiveness of the nervous system to toxic substances renders it probable that autopoisons exert a primary influence here, and that many phases of autointoxication are due to primary disturbance of the nervous system.

LOCALIZATION OF MUSICAL CENTERS.

During the last two decades many investigators—Kussmaul, Stumpf, Preyer, Oppenheim, Knoblauch, Charcot, etc.—have conclusively demonstrated that the musical faculty is older than that of speech; that music is a primary and simple phenomenon, while speech is secondary and complex. It is a well-known fact that many birds possess the faculty of producing and reproducing themes, whereas there are but very few that can reproduce the human voice, even after a long tutelage. According to Darwin, wild dogs and jackals howl and learn to bark only after they have been domesticated. Their howl corresponds to song, and their barking to articulated speech. Owen has heard a gibbon sing an octave up and then down the scale. Stumpf relates that his child, 9 months old, could sing two tones, and when 14 months old a full octave. Preyer testifies that children between 8 and 9 months old could correctly sing a tune played on the piano. The daughter of a well-known composer, Dvorak, when 1½ years old, could sing a melody with decided modulations to the accompaniment of the piano; when 2 years old she sang the march from *Fatinitza*. The 3-year-old Lehman, the child phenomenon of a musical family, played in 1869,

in Zurich, besides Diabella and other pieces, also her own compositions, to the delight of a critical audience.

The following examples illustrate the independent functions of the musical centers. A virtuoso pianist could play most difficult airs during his sleep. A well-known violinist who was subject to attacks of petit mal, never ceased to play, even during his attacks, although he was oblivious of his surroundings. Oppenheim has described ten cases of aphasia, where the faculty of speech was absent, while the faculty of singing, the understanding of melody, notes, and the ability to play the violin remained intact. According to Wildermuth, idiots whose speech is defective have the musical faculties well developed. Seguin has observed a remarkable musical memory in an idiot who could reproduce on the piano any melody sung to him but once.

Cases of amusia, i. e., loss of ability to produce or comprehend music—an abnormality as regards music analogous to aphasia as regards the faculty of speech—conclusively demonstrate that the musical faculties do not depend on the speech faculty. Moreover, just as aphasia represents various forms of articulating defects, viz., the reading, writing, the pronunciation and comprehension of words, so does amusia represent various forms of auditory defects, viz., the reading and writing of notes, singing and playing on instruments, and the comprehension of musical works. Wallaschek and Ballet were the first to classify amusia into motor and sensory, musical agraphia and alexia, etc.

Lasegue observed a musician suffering from aphasia, who was unable to read or write, but could read and sing musical sentences with ease. Lichtheim reported a case of speech deafness who could hear whistling and singing well, but was unable to understand melody. Brazier has described a patient suffering from apoplexy without paresis and aphasia, but deaf to musical tones. The Marseillaise, played by the regimental orchestra, seemed to him like simple noises, while he himself could play the same and other tunes with ease. Charcot reported a case of a cornetist who lost the ability of using his buccinator muscles. Ballet describes a case of a professor of music who suddenly lost the ability of reading music.

The anatomic changes in amusia have been studied of late, and some light has been thrown on the subject. Edgren¹ has collected fifty-two cases of aphasia without amusia, aphasia with amusia, and amusia without aphasia. In Edgren's case the patient was deaf to musical tones; orchestral music seemed to him as noises without melody; he was unable to distinguish between a waltz, polka and march, but he heard and understood speech, and was himself able to speak. At the autopsy it was found that the anterior two-thirds of the first, and the anterior one-half of the second temporal convolutions of the left hemisphere, and the posterior half of the first temporal convolution of the right hemisphere of the cerebrum were destroyed. Edgren concludes from the above that there is only one musical center in the cerebrum,

and that it is situated in the anterior two-thirds of the first temporal convolution and in the anterior half of the second temporal convolution of the left lobe, i. e., in front of the center of Wernicke.

The physiologic experiments on animals, by Ferrier, Hitzig, Luciani and Tamburini, Bechtereff, Baginsky and Tonnini, have demonstrated that the auditory centers in various animals are situated in the temporal convolutions. The destruction of one of the temporal lobes causes almost complete deafness in the ear of the opposite side, and slight impairment of hearing of the ear of the same side. Munk², in his experiments on dogs, has found that the anterior third of the temporal lobe serves for the comprehension of high tones, the middle for middle, and the third for low tones.

Larionoff³ has made numerous ingenious experiments on dogs, with a view of defining the localization of the auditory centers, and has come to the following conclusions: There are several sensory musical centers situated in the posterior halves of the hemispheres, and several motor centers situated in the anterior halves of the hemispheres of the cerebrum. Of the sensory, two tone centers are situated in the temporal lobes, and one optic center, for the reading of notes, situated alongside of the center for ordinary reading, in the gyrus angularis. The motor center of notewriting probably develops alongside of the center for ordinary writing, in the second frontal convolution. The singing center is situated a little behind the motor center of speech of Broca, in the third frontal convolution, and is otherwise known as the center of Kraus'. The motor center presiding over the functions of performing on various instruments develops on exercising, in the anterior part of the central convolution alongside of the motor center of note writing. The center for playing wind instruments is developed in the region governing the movements of the lips, a little above the center of Krause.

There must certainly exist separate centers for the higher functions of music, musical images, conceptions and ideas. Musical images, and musical memory, judging from analogy with the centers of speech, are probably situated behind the tone centers in the region of the posterior association-centers of Flechsig. Musical conception, or the highest center of musical ideation develops in the frontal lobes in the region of the anterior association-centers of Flechsig.

It is to be hoped that greater light will be thrown on this interesting subject in the near future. Not only should autopsies be made in all cases of aphasia and amusia, but also in all deaf and dumb, the majority of whom, according to Bezold, suffer from affection of the auditory centers of the cerebrum.

MALARIA IN THE SOUDAN.

American experience with armies in unhealthy climates is not a peculiar one even in these days of sanitary progress. The British troops in the southern Soudan are, according to a late issue of the *British Medical*

¹ Deutsche Zeit. f. Nervenheilkunde, 1894, p. 1.

Journal (July 1), suffering from malaria to an extent that far exceeds our Cuban experience. At Fashoda, in the month of March, when the Nile was at its lowest, 280 out of a total of 307 were suffering from the fever. At Karkanji during November, no fewer than 308 out of a total of 390 were laid up, and at Sennaar and Abu Haraz matters were nearly as bad. Not only Europeans but Egyptians suffered. The troopers of the native Egyptian cavalry returning to Omdurman, from the Blue Nile, were almost to a man incapacitated by the fever, and their horses had to be brought down by the native Soudanese infantry. Even the indigenous inhabitants of the country along the Blue Nile do not escape, but are reported as extremely anemic from malarial poisoning. Knowing, as we do, what tropical malaria is and how severe it is often likely to be in its after-effects, this question becomes a serious one for the British military authorities. They undoubtedly have problems to meet in the occupation of their African possessions that will require their best attention. They are fortunate that yellow fever is not also one of their embarrassments, but the situation as regards malaria is had enough as it is. It is well for us to note such facts from time to time, to realize that while we have troubles of our own they are not altogether peculiar to ourselves.

FATALITIES OF THE FOURTH.

The fatality statistics of the Fourth of July are generally a striking item in the newspapers for a day or two after the anniversary, but the matter is then generally dropped. This year, contrary to the usual custom, the *Chicago Tribune* is keeping up the record and reporting the later as well as the immediate fatalities. In its issue of July 17 it gives a list of 144 deaths directly due to Fourth of July casualties, and another journal editorially remarks that in no Philippine battle has the American death-rate been anything approaching these figures. The chief medical point of interest is the very general prevalence of lockjaw after these accidents, 83 of the 144 deaths having been due to this cause. In New York, Boston, Pittsburg, and Philadelphia all the deaths reported were from this cause, while it was only a little less unusual in several other large cities. Why tetanus infection should be so prevalent on July 4, out of all days of the year, is a question we have not seen satisfactorily answered. The toy pistol has received credit heretofore for an undue proportion of tetanus-infected wounds, but it can hardly be responsible for the whole of the *Tribune's* formidable list. There seems to be an opportunity here for a thorough bacteriologic study which ought to have valuable practical as well as scientific results. Tetanus is a rare complication of ordinary wounds but on this particular holiday the infection seems to be rampant beyond all reason. The first duty of the hour, however, as the *Tribune* says, is not so much to discover the peculiar mode of infection as to remove the obvious original cause. It does not require study to discover that, and the remedy lies in legislation, provided the laws are rigidly enforced, not by empty proclamations of mayors or police instructions, not meant to be obeyed, but by absolute stoppage of the sale and use of the deadly toy pistol and the giant cracker, or still better, the suppression

of the whole class of peace-destroying noise-creators in the hands of reckless and irresponsible youths. If we need a more severe lesson, we are pretty certain to get it if we let matters go on. The useless sacrifice of human life has no excuse, and the effort of the *Tribune* to arouse public sentiment against the senseless custom is most praiseworthy. The *JOURNAL* takes this opportunity to most heartily endorse its action.

MICHIGAN MEDICAL LAWS.

A law recently enacted in Michigan classes with idiots and insane, those suffering from uncured syphilis and gonorrhoea, as incapable of marriage. They are not reckoned with idiots and insane, however, as regards responsibility, for it provides that "any person who has been afflicted with syphilis or gonorrhoea and has not been cured of the same, who shall marry shall be deemed guilty of a felony, and upon conviction thereof in any court of competent jurisdiction, shall be punished by a fine of not less than \$500 or more than \$1000, or imprisoned in the State prison at Jackson not more than five years, or by both such fine and imprisonment in the discretion of the court." The law also provides that the wife can testify against her husband, and vice versa, and removes the privilege of medical secrecy in proceedings for this cause. The enforcement of this law will be noted with interest, and it is possible some important new medicolegal question may arise; the questions of the curability and the evidence of cure of these disorders may come up in the courts. Considering the frequency of these disorders, especially gonorrhoea, it would seem possible that there is danger of a serious diminution in the number of marriages as a result of such law, and also that it might afford possibilities of blackmail and inconvenient family complications. On the other hand, if it will tend to improve morality and diminish the undesired suffering that these diseases so often entail, one can only wish the new law success. Another Michigan enactment provides that it shall be unlawful for "any person or corporation except a legally incorporated and reputable college of medicine and surgery having and requiring actual attendance at a course of study of not less than three years of eight months each to issue a diploma or certificate setting forth or implying that the holder thereof is qualified to practice medicine or surgery in any of their branches." This, we take it, applies to the diplomas of the notorious St. Luke's Hospital of Niles, and thus helps in wiping out medical diploma-mills. A penal clause is attached to this law, which will make it imprudent to violate it, and its enforcement ought to be easily practicable. With its new medical practice act and this measure, Michigan ought to be well protected against bogus diplomates and quacks.

NATIONAL DEPARTMENT OF HEALTH.

The coming Congress cannot consistently disregard the voice of the medical profession of the United States, demanding the speedy establishment of a national department of health, first formally expressed by the American Public Health Association, the foremost sanitary organization in the United States, Canada and Mexico, then deliberately and enthusiastically indorsed by the

AMERICAN MEDICAL ASSOCIATION, the representative body of medical men of the entire country; and recommended with practical unanimity—three delegates not voting—by the National Conference of State and Provincial Boards of Health of North America, at its recent meeting in Richmond, Va. While the Canadian and Mexican health officials are constituent parts of this conference, their participation in the act of approval was of the most unselfish character, since both the Dominion and the Republic of Mexico already possess well-organized Federal health departments, such as sanitarians in the United States have so long desired. The executive authority in Canada is vested in the Director General of Public Health of the Dominion, Dr. Frederick Montizambert, who has the status of a deputy minister; and that of Mexico in the Superior Board of Health, of which Dr. Edward Liceaga is president. The scheme proposed and accepted by all three of the national medical and sanitary associations mentioned, and generally known as the Spooner bill, differs in detail from both these, the more direct influence of the several state boards of health being recognized, in accordance with our system of state potentiality, in the composition of the contemplated national board. The indorsement of this measure by the conference of state boards has been, as it were, emphasized by the election of Dr. U. O. B. Wingate, commissioner of health, Milwaukee, Wis., who has been identified with its advocacy on the part of the American Public Health Association and the AMERICAN MEDICAL ASSOCIATION, to the presidency for the ensuing year. Especially since the acquisition of our tropic dependencies have the requisitions of an independent board of health of a distinctively national character been greatly augmented, while the necessity for immediate legislation has become more urgent. Since the several state boards of health are not willing to subordinate themselves to the makeshift methods—of which they have had sufficient experience—of a bureau created for another purpose, but unite in demanding a well-organized responsible, national board, with executive authority, Congress has no alternative but to meet the requisition in the manner indicated by the concerted opinion of the medical and sanitary professionals of the whole country.

LOCOMOTOR ATAXIA WITH CANCRUM ORIS AS A FATAL COMPLICATION.

While the exact nature of cancrum oris is not yet understood, its appearance, course, and termination would stamp it as an infectious process of great virulence. The condition most commonly attends the exanthemata in debilitated children, and it is almost universally fatal. It has also occasionally been observed in adults. Bacteriologic investigation has thus far resulted in the isolation of several different bacteria from the area of disease, but none of these can as yet be considered specific or causative. Therapeutic measures have also been entirely futile in controlling the progress of the disorder or in preventing a fatal issue. A case presenting features of more than ordinary interest has recently been reported by Ness¹—one of locomotor ataxia in a woman in whom cancrum oris developed as a fatal complication. The patient was 48 years old

and had complained of shooting pains in the lower extremities, with paresthesia and a sense of weakness and stiffness about the knee-joint. In a short while, difficulty in walking in the dark and in turning quickly was experienced, and gradually became more marked. There was also difficulty in expulsion of urine and the bowels were constipated, although they became unduly relaxed when laxatives were administered even in small doses. Station was much disturbed. Analgesia and anesthesia were found in both legs below the knees. The knee-jerks were completely abolished. The plantar reflexes were much exaggerated, and the abdominal reflexes and jaw-jerks were well marked. Muscular sense was preserved. There was a slight nystagmus. The pupils were contracted and almost insensible to light stimulus, while they contracted slightly in accommodation. The optic discs were slightly oval, but otherwise normal. A history of alcoholic indulgence was obtained, but none of syphilis. In the progress of the case symptoms of cystitis appeared, and increased severity of the pains required the administration of analgesics. Complaint of obscuration of vision in the right eye led to the detection of a large hemorrhage in the macular region. Vomiting set in, and the patient grew progressively worse. Finally, the temperature became elevated, and the swelling of the lower part of the face on both sides appeared, and to a less extent of the neck immediately below the jaw. The swelling was hard to the touch, as if the tissues were infiltrated with inflammatory products, while the skin itself was but little reddened. In the course of a few days the swelling of the neck had diminished somewhat, but that of the cheeks had increased, while both parotid glands were greatly enlarged. The patient now had a short rigor, and soon the mucous membrane of the mouth also became involved. The condition grew progressively worse, the tissues of the cheek began to slough, diarrhea set in, with incontinence of feces, and the patient gradually sank and died. On post-mortem examination, in addition to the lesions described, considerable necrosis of the under surface of the right temporosphenoidal lobe was found, as a result of extension of the gangrenous process from the cheeks through the skull and the base of the brain. Degenerative changes were found in both the columns of Burdach and the columns of Goll.

Medical News.

DR. JAMES C. WILSON, Philadelphia, sails July 27 for Europe, to be gone several months.

ADDITIONS costing \$10,000 are to be made to the University Medical College, Kansas City, Mo.

A ROOF GARDEN for convalescents is to be added to the Union Protestant Infirmary at Baltimore, Md.

DR. J. E. BROWN has retired from the managing editorship of the *Columbus* (Ohio) *Medical Journal*.

DR. E. E. HUBBARD, Kansas City, Mo., has been made demonstrator of pathology in the Medico-Chirurgical College of that city.

DR. M. S. FRENCH, Philadelphia, who was secretary of the National Relief Association during the recent war with Spain, has gone to Europe for rest and recreation.

THE RECEIVING wards of the University Hospital,

¹ *Edinburgh Med. Jour.*, June 1899, p. 505.

Philadelphia, are being enlarged on account of the increased number of patients being treated there.

THE ROYAL College of Surgeons of England will celebrate its centenary next year, and preparations are already being made looking forward to the event.

THE HEAD physician of an asylum at Rome, Italy, Dr. Bondi, was recently fatally stabbed on the street by a former patient whom he had discharged as cured.

DR. E. C. RENAUD, St. Louis, Mo., and Dr. E. O. Sisson, Keokuk, Iowa, sail July 29 for Europe to attend the International Ophthalmological Congress, in Utrecht.

ACCORDING to press reports the Ohio State Board of Medical Examination and Registration has refused to recognize Hygiea Medical College, or to issue certificates to its graduates.

BY THE wills of Martin H. Lehmaier and David Krakaner, the Mount Sinai Hospital, New York City, received \$3500, of which \$2500 is for the founding of a memorial bed.

ON JULY 12 the graduation exercises of the San Francisco College of Physicians and Surgeons were held. Nineteen men were given diplomas. This college was organized some three years ago.

AT THE recent centennial celebration of the Norwegian residents of Chicago, about \$2000 was realized for the benefit of the Norwegian Lutheran Tabitha Hospital of this city.

ACCORDING to the daily papers of Detroit, the question of continuing to employ teachers who are afflicted with consumption is being agitated in that city, although nothing definite has been done.

DR. A. GOLDSPOHN of Chicago leaves for Europe this week. He goes to attend the International Congress of Gynecologists and Obstetricians, at Amsterdam, and will be gone about three months.

THE OREGON volunteers arrived in the port of San Francisco, on the transports *Ohio* and *Newport*, July 13. The list of deaths in the Oregon regiment numbers 59, the major portion due to disease rather than to wounds.

SIR WILLIAM CROOKES, F. R. S., England, has had conferred on him the Albert Medal of the Society of Arts, "for his extensive and laborious researches in chemistry and physics."

DR. F. E. WAXHAM, having concluded to return to Denver on account of ill health in Chicago, has accepted the chair of internal medicine and laryngology in the medical department of the University of Colorado.

THE MANAGERS of the Maryland School for Feeble-Minded, at Owing's Mills, are contemplating extensive improvements for this institution, to include the erection of a general administration building and several cottages.

THE PARIS ACADEMIE DE MEDECINE has recently elected Professor Hutinel to membership. He occupies one of the two chairs of internal pathology in the Faculty, and is a prominent authority on children's diseases.

SINCE SUCH a long struggle over what is known as the Loan Bill has been won by those in favor of greater improvement of Philadelphia, this city has set aside the sum of \$500,000 for the improvement of its system of sewerage.

UNDER the auspices of the Children's Country Week Association, Philadelphia, 286 children were, during the past week, taken to the country for a few days' outing.

This Association deserves great credit for its efforts in lessening the infantile mortality during the hot months.

THE FIRST number of the *Illinois Medical Journal*, the new official organ of the Illinois State Medical Society, has been received. It is well printed, well edited, clear and attractive, and reflects credit on the society and especially on the committee on publication.

SINCE the festivities of July there have been reported in Pennsylvania 13 cases of tetanus, of which 11 have already resulted fatally. Doubtless as many cases have occurred which have not been reported. In 9 instances tetanus arose from lacerated wounds of the hands, and 4 from gunshot wounds.

DR. JAMES MOORES BALL, St. Louis, Mo., will attend the International Ophthalmological Congress, which convenes in Utrecht, in August. He will read a paper before the Congress on "Excision of the Cervical Sympathetic for Glaucoma," reporting four operations, which are believed to be the first made in this country.

THE NEW buildings of the Jefferson Medical College, Philadelphia, will be formally opened on October 2, next. Dr. T. A. Emmet of New York, one of its graduates, will preside. The principal address will be given by Dr. Phineas S. Conner of Cincinnati, who is a graduate of Jefferson. The old college building will give place to a new and enlarged hospital, eventually.

SUIT HAS been entered against the city of Baltimore, Md., for \$5000 damages for injurious effects resulting from compulsory vaccination. The plaintiff is a young woman employed in a business house, who claims that she was made ill by the operation and rendered unfit for her regular duty.

THE COMMISSIONER of health of that city, has been making some studies in the prevalence of consumption in Baltimore. He finds that in 1898 the greatest number of deaths occurred in the crowded sections, that is, in the tenement districts and in the negro settlements of the city.

A MAN living in Allentown, Pa., is reported as having been arrested on the charge that he had failed to comply with the laws regarding infectious diseases, in that city. He neither reported the case nor did he call in medical attendance in the case of his child, who subsequently died of scarlet fever. He had no faith in physicians, and further said, "when the Lord called a child no physician could save it."

THE CHINESE Consul General is said to have filed an objection to the decision of General Brooke that commercial treaties between Spain and other foreign countries do not apply to Cuba, and further, that negotiations must therefore be made with the United States in the name of Cuba. It is further stated that the main objection raised is that the Cubans are afraid of the introduction of leprosy by the Chinese.

A PHYSICIAN of Chambersburg, Pa., who is a graduate of the School of Medicine of the University of Maryland, and holds a license from the Board of Medical Examiners of Maryland, recently claimed of the Pennsylvania Medical Council the privilege of a license from that body on the above grounds. The license was refused and the matter taken into the courts, which have sustained the Council in its action.

THE WIDOW of the late Dr. A. A. Kanthack, professor of pathology of Cambridge (England) University, whose early death may be attributed to the sacrificial work he did in the cause of medical science, has just been granted a pension of £60—\$300—a year. "In consideration of the eminent services rendered to science by

her late husband." What a pity it is that our government cannot recognize work in this country in the same way.

ACCORDING to *Echo Med.*, July 2, Marguerite Boyenval, the celebrated sleeping woman at Thénelles, France, recently entered her seventeenth year of continuous slumber, the most curious case of lethargy ever scientifically observed. Now 35 years of age, her pallor and emaciation are extreme, although the pulse-beat is over 80. The skin is without sensation, and the arm, if lifted, remains in the air. The only nourishment is by occasional rectal injection.

ACCORDING to press dispatches, Mr. Broderick, replying to Sir Charles Cameron (Liberal), in the English House of Commons, stated that the attention of the foreign office had not been previously called to the fact that, owing to the deaths from cancer, the New York Legislature had endowed a laboratory at Buffalo to study the disease, and further that the British Charge d'Affaires at Washington would forthwith be asked to furnish the government with all possible information regarding the subject.

THE TOTAL expense of Pozzi's new gynecologic pavilion at Paris, with its sixty-six beds, amounted to \$88,000. The pavilion is like an art gallery, set down among the buildings of the Broca Hospital, of which it forms a part, as the walls were richly decorated with frescoed landscapes, etc., by some of the foremost artists of the day, at Pozzi's appeal. Other special features are an arrangement for "permanent baths," another for vaginal flushings with sixty liters of water, and a lay committee to care for convalescents after dismissal.

AN UNUSUALLY large number of cases of tetanus, with many deaths, have lately been reported in New York City and vicinity, most of them the result of pistol-shot wounds of the hand during the recent Fourth of July celebration. Several of the cases received intracerebral injections of tetanus antitoxin, and in each case the serum had an immediate effect on the symptoms, tending to show that—as was the case with those in which it was administered early—it would have proved curative if it could have been resorted to before the infection had advanced too far.

ON JULY 11 the Board of Charities and Corrections elected Dr. H. W. Cattell pathologist to the Philadelphia (Blockley) Hospital, to succeed Dr. John Guitéras, resigned. Dr. Cattell was born in Harrisburg, in 1862, and is a graduate of the University of Pennsylvania, 1887, and was for a number of years demonstrator of morbid anatomy in that institution. He was also editor of the *International Medical Magazine* for a long period, but is probably best known for his work in the translation of Ziegler's "Pathology" (American Edition).

AS TO THE danger of infection from domestic animals and pets, Dr. Keville of Baltimore has found diphtheria markedly prevalent among pigeons, and cases have been reported where the disease has been communicated by them to men. It is also readily communicated from pigeons to rabbits when the two are cooped together. He says that the "gapes" in chickens is probably diphtheria, and the "worm" which is drawn from the throat by poultry raisers is usually a piece of membrane. There is also danger of infection lurking in the fur, hair and feathers.

THE FIRST step has been accomplished in the rebuilding of the Charité Hospital at Berlin: the pathologic

museum has been completed, thanks to Virchow's untiring efforts. It has been most justly named after him, and represents all that science and experience can suggest for the utilization of the rich collection for study and class teaching. As the general public now learns at once of scientific matters, the management has thrown open part of the museum to the knowledge-hungry layman that he may learn by personal observation rather than from partially-comprehended newspaper articles.

AT A RECENT meeting in New York City, called by the Medical and Legal Relief Society, a rough draft of a bill designed to protect the public from the interference of "Christian Scientists" in the care of the sick was presented. The bill provided that whoever advised or persuaded another against employing medical or surgical aid in cases of illness or injury, will be guilty of a misdemeanor, and if such illness or injury result fatally, shall be guilty of manslaughter, provided no medical or surgical aid has been received by the patient. The bill was referred to a committee of nine, appointed by the president of the society.

A NEUROLOGICAL SOCIETY was organized in Paris, June 8. It has adopted as one of its by-laws that no member shall present a paper which will require more than fifteen minutes in its delivery, or occupy more than one page of the official organ, in print. The official organ will be the *Revue Neurologique*, which will be issued on the fifteenth of each month. The officers of the society are: president, Professor Joffroy; vice-president, Professor Raymond; secretary, M. Pierre Marie.

THE PARIS correspondent of the *Lancet* states that a Parisian who was lately traveling by train refused to show his ticket to a traveling inspector of the company. The passenger was accordingly summoned by the company for refusing to show his ticket, as he was bound to do by law. He argued, however, that he had not refused to show it (présenter), that he had let the inspector see it so that he could easily satisfy himself as to its being in order, but that he certainly had refused to let the ticket inspector take it into his hands because his hands were so dirty. He, the passenger, therefore was unwilling to put into his pocket a ticket which would be contaminated with microbes and might very likely give him some disease. After a long legal discussion as to the exact meaning of the word "show" (présenter) the court fined the ardent disciple of modern hygiene the sum of one franc.

REPRESENTATIVE W. L. CLIFFE, of the State Pharmaceutical Association of Pennsylvania, recently called on the chief officer in the Bureau of Health office relative to an act lately passed by the Legislature prohibiting the sale of medicines and drugs in second-hand bottles and jars. Mr. Cliffe is reported as saying: (*Ledger*)—"Under the terms of the act it is unlawful for a druggist to fill a bottle brought to his store by a customer unless a prescription is to be refilled. If, for instance, the customer wants Jamaica ginger and brings a bottle which has contained Jamaica ginger the druggist must tell him that he must buy a new bottle. From this fact the customer might think the druggist was working for his pecuniary interest." In his opinion the law will result in much confusion. The penalty is a fine of not more than \$25 or imprisonment for the first offense, any subsequent offense to be punished by a fine of \$100 or imprisonment not to exceed three months. No legal opinion has yet been expressed.

AN INVESTIGATION by the Lunacy Commission and

the Board of Directors, conjointly, is being held at the Agnew's Insane Asylum, California. Some time ago it became evident that a female patient was pregnant, and as she has been confined to the asylum for some time conception must have commenced while a patient in the asylum. A "trusty" had been seen at various times, by both patients and attendants, to enter a basement window of the women's building. It is stated by the attendants that the fact was at once reported to the superintendent, Dr. F. M. Sponagle, on the daily written reports. When the reports were called for by the investigators, those for the days mentioned by the attendants were found missing, so that no written evidence of the fact having been reported is available. It is rumored that the Napa Asylum is also to be investigated, as stories of similar occurrences at that institution are current. These stories are vigorously denied by the officials at Napa.

BRITISH MEDICAL ASSOCIATION.—The sixty-seventh annual meeting of the British Medical Association will be held at Portsmouth, Eng., August 1, 2, 3 and 4. The meetings of this Association are conducted in a similar manner to those of the AMERICAN MEDICAL ASSOCIATION, being different only in minor details, although there is evidently more time devoted to social functions by our British brothers than is our custom. The working body of the Association is divided up into twelve sections, viz.: *a*, medicine; *b*, surgery; *c*, obstetrics and gynecology; *d*, state medicine; *e*, psychology; *f*, anatomy and physiology; *g*, pathology; *h*, ophthalmology; *i*, diseases of children; *j*, pharmacology and therapeutics; *k*, laryngology and otology; *l*, tropical diseases. The first meeting is a religious one, and is held at one of the large churches, at which a sermon is preached and regular church services conducted. This year the sermon will be preached by the Bishop of Winchester. The general meetings for business, etc., are held in the afternoon. There is no address made at the first meeting, the time being devoted to a report of the Council, reports of committees and other general business. At the general meeting of the second day is delivered the Address in Medicine; this year Sir Richard Douglas Powell is the orator. At the third session, Thursday afternoon, is given the Address in Surgery, by Professor Alexander Ogston. The concluding general meeting is held Friday afternoon, and devoted entirely to business. The section meetings are usually held from 10 a.m. to 1 p.m., and judging from the program, this is all the time that is devoted to section work. No section dinners are held, but in place of these is the great association dinner, to be held on Thursday evening at 7 o'clock. The evening sessions are given up partly to business and partly to pleasure. The first evening, at 8:30, there is a general session, at which the president's address is delivered. On Wednesday evening a reception and concert is to be given by the local profession. On Thursday evening the annual dinner of the Association, which has been referred to above, will be given; later, at 9:30, a reception. Friday afternoon local excursions will take place, and in the evening a reception and ball is given by the Mayor and Mayoress of the city at which the meeting is held. Saturday is, as a rule, devoted entirely to excursions. This year there will be four of these. One is to Salisbury and Stonehenge, which means a trip by rail, and visit to important places at Salisbury and Stonehenge, luncheon tendered by the resident members of the profession and return by coach. The second excursion is to Winchester, which is by rail to this interesting and

historic city, with entertainment at luncheon, and return by a different route. The third is the one that would be of the most interest to the majority, it being to the Isle of Wight and Ventnor, and the fourth is to Southampton and the New Forest. As a rule, few of the members of the Association leave before Saturday, and practically all join in these excursions, which are, as a rule, a pleasant relaxation after the week's work, and full of social pleasure. Several members of the profession from the United States are represented in the program as follows: Dr. Woods Hutchinson has a paper on "The Form of the Chest in Tuberculosis, and its Significance;" Ernest Laplace exhibits his new Forceps for Intestinal Anastomosis. Among those on the program for discussion we note Drs. James Tyson of Philadelphia; Wm. Osler of Baltimore; Herman Knapp of New York; Samuel Risley, Philadelphia; George E. deSchweitz, Philadelphia; Samuel Theobald, Baltimore; Stephen Ayres, Cincinnati; H. Scheppegrell, New Orleans; Sargent Snow, Syracuse, N. Y., and J. H. Bryan, Washington.

Therapeutics.

Urotropin in Septic Infection of the Bladder.

This new drug is receiving favorable mention by many observers. In closing a clinical report in *Die Therapie der Gegenwart*, the author, Prof. O. Huebner of Berlin, says:

In the first place it seems desirable only to employ the urotropin treatment in cases in which the alkaline or neutral reaction of the freshly voided urine demonstrates the early appearance in that fluid.

In the second place the administration of the drug must not be discontinued too soon after improvement in the patient's condition has appeared. It will probably be best to continue the use of the urotropin steadily for three weeks, provided that any improvement at all is seen. If then it is discontinued, and the urine again becomes turbid and foul, it should be administered anew for double the length of time; to be then stopped for trial as to the permanency of its effect. A third course, for a still longer time, may then be necessary, etc. The older the disease the longer will be the course of treatment for which we must be prepared.

No objectionable effects upon the digestion or the nervous system from the prolonged use of urotropin in the doses that I used was observed by me. These were 9 to 30 grains (.6-1.95 gm.) daily in children from 7 to 10 years of age. In one case a four-year-old child bore daily amounts of 15 grains (1 gm.) in 3½-grain (.25 gm.) doses very well. I always administered the drug in divided doses of 3½ to 6 grains (.25-.39 gm.) given three or four times daily.

The drug has been declared of exceptional value in all the suppurative diseases of the genito-urinary tract; such as pyelitis, cystitis, with ammoniacal decomposition of the urine,—whether due to stricture or bacillary infection—chronic posterior urethritis, prostatitis, and inflammation of the pelvis of the kidney. It is an antidote for the urinary poisoning which so commonly occurs in these cases. In gouty and rheumatic affections, where increased activity of elimination of uric acid and urates is required, its beneficial effect is marked. It is very useful in phosphaturia, its action being apparent for a considerable time after cessation of its administration. It should be employed as preparatory treatment in every case of operation upon the urinary organs, to approximately sterilize the urine and prevent infection of the wound.

Crede's Ointment in Cerebrospinal Meningitis.

Schirmer reported nine cases, in the *New York Med. Monats*, treated by inunctions of unguentum Crede one ounce (31.10 gm.) being applied daily for three days and in case of a relapse one-third of an ounce (10.36 gm.) As adjuvants to the remedy hot water was applied to the spine, and trional ad-

ministered as a sedative when necessary. The nasal fossæ were disinfected. In the cases reported there were no mortalities and no sequela, while in several of the cases, the inoculations were followed by immediate improvement.

Headaches.

Dr. Joseph Collins suggests the following prescriptions for various forms of headache:

- R. Pulv. opii.....gr. ss 03
- Zinci phosphidi.....gr. ss 03
- M. Ft. pil No. xx. Sig. One pill three times a day for headaches following the infectious and exogenous intoxicants.

Early in the treatment the following tonic should be administered:

- R. Ferri et ammonii citrat.....gr. xl 2/60
- Liq. potass arsenit.....m. xl 2/50
- Syrup zingiber.....ʒss 15/55
- Infusi calumbæ. ad.....ʒiv 124/40
- M. Sig. Two teaspoonfuls after meals.

UREMIC HEADACHE.

- R. Potassii citratis.....ʒiii 7/80
- Tinct. hyoscyami.....ʒiii 7/80
- Spts. eth. nit.....ʒiii 7/80
- Infusi scoparie.....ʒvi 23/40
- M. Sig. Tablespoonful in water three times a day.

HEADACHE ASSOCIATED WITH FLATULENCY AND PYROSIAS.

- R. Sodii bicarb.
- Bismuthi subgall.
- Pulv. acacia aa.....ʒi 3/90
- Liq. ammon. anisi.....ʒiii 7/80
- Aque destill. ad.....ʒviii 248/80
- M. Sig. Two tablespoonfuls before meals, repeated in three hours if necessary.

HEADACHE WITH ATONIC DYSPEPSIA.

In headaches associated with atonic dyspepsia, but without any considerable flatulency, Collins makes use of the following pills, and especially in the headaches occurring in women:

- R. Ferri sulph.
- Quinin sulph. aa.....gr. xv 1
- Sodii arsenitis.....gr. ss 03
- Pulv. rhei.....gr. x 65
- Pulv. zingiber. aa.....gr. x 65
- M. Ft. pil No. 12. Sig. One pill three times a day after meals.

HEADACHE FROM SLUGGISH CIRCULATION.

- R. Ext. cannabis ind.....gr.1/3 02
- Ext. gennabi.....q. s
- M. Ft. pil.

HEADACHES FROM GENERAL ANEMIA.

To overcome the sluggish condition of the digestive tract with headaches dependent upon a general anemia:

- R. Quinin sulph.
- Ext. aloes aq. aa.....gr. xii 78
- Pulv. capsici.....gr. vi 39
- Pulv. ipecac. aa.....gr. vi 39
- Glycerin. q. s.
- M. Ft. pil No. 12. Sig. One pill at midday.

If associated with considerable vital depression, he uses the following pill instead, giving at the same time some absorbable form of iron:

- R. Ext. meis vom.....gr. ss 03
- Pil. rhei comp.....gr. iii 20
- Pulv. capsici.....gr. ¼ 016
- M. Ft. pil. Sig. One pill at midday.

NEURASTHENIC HEADACHE.

Hamilton prescribes the following in neurasthenic headache:

- R. Ammon. carb.....ʒiii 11/70
- Tinct. moschi.....ʒvi 23/40
- Spts. lavandulæ.....ʒi 31/10
- Extr ammon. valerianat.....ʒviii 248/80
- M. Sig. Two teaspoonfuls at a dose in water.

The following is recommended by Lucking:

- R. Ext. cannabis ind.....gr. 1/6 010
- Zinci phosphidi.....gr. 1/10 006
- Acidi arseniosi.....gr. 1/30 002

For one pill. Give twice daily for some time.

Leonard Weber claims that the following combination will relieve headaches promptly, and better than any single colateral remedy:

- R. Acetanilid.....gr. i 065
- Phenacetin.....gr. v 32
- Antipyrin.....gr. v 32
- M. Sig. For one powder.

HEADACHE DEPENDENT UPON OVARIAN DISEASE.

- R. Ammonii bromid.....ʒvi 23/40
- Ext. hydrastis fl.....ʒss 15/50
- Tinct. gentian comp.....ʒss 46/60
- Aque.....ʒiv 124/40
- M. Sig. A dessertspoonful three times a day. —Sinkler.

Quinsy.

- R. Tinct. aconiti rad.....m. xvi 1
- Tinct. ferri chlor.....ʒi 3/90
- Sodii chloratis.....ʒi 3/90
- Glycerin.....ʒvi 23/40
- Aque, q. s. ad.....ʒii 62/20
- M. Sig. A teaspoonful every hour to be swallowed slowly and left as long as possible in contact with the fauces. —A. H. Smith.

- R. Potassii bromid.....gr. lxxx 5/20
- Sodii salicyl.....ʒi 3/90
- Tinct. opii deod.....ʒi 3/90
- Cascara cordial, q. s. ad.....ʒi 31/10
- M. Sig. Teaspoonful every four hours in water. —E. Fletcher Ingals.

- R. Tinct. guaiaci ammon.
- Tinct. cinchone comp. aa.....ʒss 15/50
- Mellis despumat.....ʒss 46/60
- Benc simul agita, et adde:
- Potassi chlorat.....ʒiiss 9/75
- Aque, q. s. ad.....ʒviii 248/80
- Fiat gargarysma. Sig. Use as a gargle every half hour and swallow a teaspoonful every four hours. —Samuel O. L. Potter...

- R. Ol. eucalypti.....m. xv 7/2
- Spts. camphor.....ʒss 5/85
- Tinct. guaiaci.....ʒiiss 13/65
- Glycerin, q. s. ad.....ʒi 31/10
- M. Sig. Ten drops on sugar, to dissolve in the mouth, every hour or two. —Miles.

Hay Asthma.

The asthma of hay-fever is often intense and demands measures for its relief apart from what may be done for the constitutional condition. A combination which has served this purpose most efficiently in a large number of cases is the following, which was originally advised by Mays:

- R. Phenacetin.....gr. lxxiv 4/16
- Quinin sulph.....gr. xxii 1/43
- Ammonium chlorid.....gr. xc 5/85
- Pulv. capsicum.....gr. iv 26
- Strychnin sulph.....gr. i 065

Make in 32 capsules and give one as needed.

The phenacetin here relieves the neurotic portion of the attack which is often very prominent. The quinin is antiperiodic. The ammonium chlorid is strongly expectorant and markedly relieves the congestion of the mucous membranes. The capsicum neutralizes the depressant effect on the stomach of the phenacetin, while the strychnin of course is the strongest general tonic with very powerful action upon the respiratory system.

Cholera Infantum.

In the treatment of cholera infantum it must never be forgotten that wonderful results are possible, even in apparently moribund cases, from thorough flushing of the colon. In an infant of 14 months, ill with this disease for sixty hours, with cyanotic skin, cold extremities and a rectal temperature of 104 degrees, Stengel reports immediate relief from the pressing symptoms, with ultimate recovery, by the introduction into the bowel, through a catheter inserted 12 inches, of two quarts of water at a temperature of 90 degrees. The water is permitted to flow out through the tube, thus washing the bowel as thoroughly as possible to free it of infective and fermenting

material. By this method the temperature is reduced more surely than by the bath, and at the same time rational and harmless effort is made to remove the cause of the disease. Very often also in these cases the terrible collapse is in no small part due to a circulation depressed by the loss of blood-serum through the watery discharges from the bowels. These discharges are so profuse that the amount of uncombined water in the tissues rapidly becomes tremendously reduced, and the heart fails from very lack of sufficient pressure in the vena cava to fill the auricle, by reason of diminution in the quantity of the circulating fluid. This indication for relief, of what is practically shock, is promptly and surely met by leaving in the bowl, for absorption after the flushing, a small quantity of water. Beyond doubt it is the prompt absorption of this fluid by the thirsty tissues that causes these little patients so instantly to show beginning recovery from their terrible collapse. In addition a few fractional doses of calomel to clear the upper bowel of offending material, a diffusible antiseptic, such as spirits of chloroform and aromatic sulphuric acid, with a little paregoric for the powerful supporting qualities of the opium, and sponging the skin with cool water or alcohol, constitute a practical, simple and effective method of dealing with these distressing cases.

Acute Diarrhea.

A very excellent formula for the acute diarrhea of children in summer is one suggested by Hare. It combines antiseptic and astringent properties with the supporting and analgesic qualities of minute doses of opium. It is as follows:

R. Aromatic acid sulph.	gtt. xxiv	1	20
Ol. caryoph.	m. viii		50
Tinct. opii. camph.	℥ss	3	75
Spts. chloroform.	gtt. xlviii	2	40
Syrup zingiber q. s. ad.	℥iij		90
Mix. Sig. A teaspoonful every two hours.			

Miscellany.

Foreign Bodies in Esophagus.—If a fish bone or any foreign object has been swallowed, it can be safely and easily extracted, according to a communication in the *Journal d'Hygiene* of June 29, by swallowing some thread snarled into a tangle, keeping hold of one end of the thread. When it has been swallowed, pulling it out by the end held will bring the foreign article with it.

Treatment of Exophthalmus by Ligature of Carotis.—There are 58 cases of exophthalmus on record, treated by ligating the carotis communis, with 26 cures. Bodon reports 2 more, both successful. In one the affection persisted until the carotis on both sides was ligated. The dilated vena ophthalmica was resected on account of violent, continuous headache.—*Deutsche Zftf. f. Chir.*, li. 6.

Malaria and Lime.—A recent communication to the Paris Academie de Medecine asserts that countries in which the upper layers of the soil, the mud and river beds, contain a large proportion of lime, are exempt from malaria, and suggests that malaria might possibly be banished from localities where it prevails by artificially incorporating lime with the superficial layers of the soil.

Tuberculous Splenomegalia.—A case diagnosed as a malignant neoplasm of the spleen, accompanied by influenza, phlegmasia alba and diarrhea, although the blood was normal, was found at the autopsy to be primary tuberculosis of the spleen with no manifestations elsewhere. The organ was enormous (1200 gr.), the hypertrophy caused by hemorrhages and necrosis of the splenic tissue.—*Gaz. degli Osp.*, June 27.

Roux Method of Preventing Relapse of Femoral Hernia.—After removing the hernial sac the femoral vessels are drawn out and Poupart's ligament fastened to the pubis with a pointed wire shaped like a double pointed tack, driven into the pubis, slightly slanting, so that one leg is nearer the interior of the

pelvis than the other. This contrivance affords a solid support like a lattice work, preventing the recurrence of the rupture. —*Anjou Med.*, 1899, No. 2.

Old Oregon Law Repealed.—The supreme court of Oregon holds, in *re Ferdon*, that the medical practice act of that state, of 1895, operates as a repeal of the former law on the subject, including in its repeal the provision in the act of 1899, as amended in 1891, which required that any itinerant vendor of any drug, nostrum, medicine, ointment or appliance of any kind intended for the treatment of disease or injury, who should, by writing or printing or any other method, publicly profess to cure or treat diseases, injuries, deformities or ailments of any kind thereby to take out a license.

Fat in Urine Pathognomonic of Yellow Fever. E. EDELMANN asserts that a granulo-fatty degeneration occurs in this disease, most pronounced and first manifested clinically in the kidney. Fat in the urine is therefore pathognomonic of yellow fever, a fact never signaled before, he states. The first day mucin is noted in the urine; after this albumin and fat, and we can follow, step by step, the destructive and necrotic process of the invasion of the kidneys by the fat. When icterus follows, the renal lesions become much aggravated by the irritation of the bile.—*Havana Medica*, June.

Diabetes from Copaiba.—Betman relates that a person with a light case of diabetes, granulo-fatty degeneration, and slight gastric disturbances, found that the amount of sugar in his urine increased from 13 and 20 grams a day to 45 and 72 with the ingestion of 2.5 to 3 grams of copaiba. Further tests confirmed this experience, that copaiba produces diabetic phenomena in the predisposed, except when there are cutaneous lesions, erythema or urticaria, in which case the renal modifications are usually absent. Turpentin has been known to produce a similar effect.—*Berliner Klin. Woch.*, 22.

Death from Electricity.—Prevost and Battelli have been experimenting with dogs, at Geneva, and announce that animals apparently killed by an electric shock can be revived by prolonged and persistent artificial respiration. The effect of a current of 2500 volts is to arrest the functions of the nervous system and cause the cessation of circulation. Artificial respiration and traction of the tongue are particularly effective in this condition if kept up long enough for the nervous system to recover from the effects of the shock, when all is restored to normal. But with a weak current, forty-five volts, if the heart partially or entirely stops beating it is necessary to send a current of a higher tension through the body for a brief stimulus, supplemented by artificial respiration, to restore suspended animation.

New Instrument for Gauging the Arterial Pressure.—Prof. G. Gartner of Vienna has invented an apparatus, the "Tonometer," which consists of three parts connected, by rubber tubes, with the three ends of a T-shaped tube: a pneumatic ring that fits over the finger, a manometer and a rubber bulb, forming a hermetically closed hole. The ring is about 1 cm. wide with a metal tube inserted at one point, a thin rubber membrane drawn air-tight over the inner end. The ring is fitted over the second phalanx of a finger or the end phalanx of the thumb. The blood is then expelled from the first phalanx by means of a thimble-like contrivance, and pressure is produced in the pneumatic ring by pressure on the bulb. The thimble is then removed, leaving the finger pulp empty of blood. The pressure on the bulb is then gradually suspended, and at a certain moment the blood rushes into the tip of the finger, when the degree of pressure can be read on the manometer. A mercury manometer is more precise in its indications, but for general use the Bourdon metal manometer will be found sufficiently accurate.—*Munch. Med. Woch.*, June 27.

Right of Physician to Practice Dentistry.—The question was presented to the supreme court of the state of Rhode

Island, in the recent case of *State vs. Beck*, whether authority to practice medicine and surgery gives the right to practice dentistry. The answer, the court says, depends on the construction to be given to the statute regulating the practice of dentistry taken in connection with that regulating the practice of medicine, as independent of these statutes, there can be no doubt of the right of a physician to practice dentistry. Now, the one Rhode Island statute provides that all persons intending to enter on the practice of dentistry must pass a satisfactory examination before the board of registration in dentistry and get a certificate which shall be registered with said board. The other statute makes it unlawful for any person to practice medicine or surgery, in any of its branches, without first obtaining and registering a certificate from the State Board of Health. In the passage of the act relating to the practice of dentistry, the court thinks that it was the evident purpose to protect the public from being imposed on by persons who, while holding themselves out as competent to extract, clean, or repair teeth, or replace them by artificial ones, yet, from want of instruction and skill in the art, were wholly unfit to perform such a delicate and highly important function. For this and other reason, it holds that, while, by the strict terms of said statute, taken by itself, it doubtless does prohibit physicians, as well as all other persons, from practicing dentistry without first obtaining the required certificate, as the inhibition is general, and no exception is made in favor of physicians, nevertheless, it is not to be construed as applying to the practice of dentistry by regular physicians. A "physician," it continues, is one who practices the art of healing disease and of preserving health; a prescriber of remedies for sickness and disease. He is presumed to be familiar with the anatomy of the human body in its entirety; to understand the science of physiology and the laws of hygiene; and to be able to minister, as far as may be, to the relief of pain, disease, and physical ailments of all sorts and kinds whatsoever. His certificate authorizes him to practice medicine and surgery in all its branches. Dentistry is now a well-recognized branch of surgery. A dentist is a dental surgeon. That sphere is included in the larger one of physician and surgeon. Thus does the court come to maintain that a fair and reasonable construction of the two statutes, taken together, comes to this: That by the use of the broad and general language used in regulating the practice of medicine and surgery it was intended to except physicians and surgeons from the restrictions imposed on other persons regarding the practice of dentistry. It also takes account of the fact that any construction of the law which would prevent the general practitioner from treating any part of the human body, or would restrict him in the discharge of his professional duties, would be a menace to the public health, and would deprive the physician of his right to practice a branch of his profession that is as old as the history of medicine itself.

Rational Treatment of Pulmonary Tuberculosis.—There is, perhaps, no more hopeful subject in the whole realm of medicine than the treatment of pulmonary tuberculosis. That spontaneous recovery not rarely takes place is well known and generally recognized, and that much can be done by judicious management and the intelligent use of remedial agents to bring about such a result is being demonstrated daily. Nor is it too much to hope that the near future will provide us with a therapeutic agent as efficacious in the treatment of tuberculosis as the antitoxin of diphtheria is in the treatment of that disease. The united and organized efforts being made at present in many parts of the world for the suppression of tuberculosis give promise and justify hope that the disease will gradually be rendered less prevalent and less fatal.

An interesting consideration of the rational treatment of pulmonary tuberculosis, based on comparative studies extending over a period of nearly twenty-four years, of some ten thousand carefully recorded cases, was presented at the Inter-

national Congress for Tuberculosis, held recently at Berlin, by Coghill, who died from perforating ulcer of the stomach only a few days afterward, and who had been for many years senior physician in the Royal National Hospital for Consumption and Diseases of the Chest, at Ventnor. Coghill recognized two distinct stages of the disease, the acute or pyrexial, and the chronic.

The former has much the graver significance. It usually passes into the second, or it may recur again and again in the course of the latter, indicating a resumption of destructive activity.

The available therapeutic methods may be grouped under the following heads: 1. Hygiene or general treatment; 2, regimen or dietetics; 3, medical treatment, including the symptomatic and the special.

In acute pulmonary tuberculosis, absolute repose of body and mind should be secured so far as possible. In extreme cases it may even be necessary to insist on the continuous maintenance of the horizontal posture, not necessarily in bed though, for a considerable length of time. The equality of the temperature of the air is of more importance than its range. It should not be allowed to vary much from 55F. It is better to make the patient comfortable, if necessary, by additional light covering than by raising the temperature. If these conditions can, with proper precautions, be fulfilled in the open air, so much the better. If the patient is confined to the room, this should be large, and well ventilated, and freely exposed to air and sunshine, with the windows, and if possible the doors also, open day and night, and with the bed standing well out from the wall. Conversation, especially on exciting or depressing topics, should be deprecated, but the patient should be encouraged to occupy his mind outside of himself by the perusal of light and cheerful literature. The general bath should be prohibited, but if possible the whole body should be sponged every night and morning with eau de cologne, or spirit of wine and hot water, or toilet vinegar. A large meal of any kind, or red meat should not be permitted at any time. Food should be given in small quantities at regular intervals, e. g., every two hours during the day, and every three during the night. It should be varied as much as possible, both in materials and in cooking, in accordance with individual or national taste. It should consist of fish, poultry, white game, pigeons, sweetbreads, eggs, light soups, milk and egg pudding, and rice, while ripe fruits, especially strawberries, may be taken freely, but always early in the day. The more substantial of these should be given in the form of meals at regular intervals alternately with the lighter, which should be taken as refreshment in the intervals. Milk *ad libitum* may alternate or be taken with each more substantial repast, if the capacity and taste of the patient permit it. If the digestion is weak, pre-digested food, or peptonized meat extracts may be given. Stimulants should be used with extreme reserve. If the appetite is poor, and the strength and vitality are low, a tablespoonful of old Cognac beaten up with a fresh egg may be given at intervals during the day, according to the demands of the case, or two or three teaspoonfuls of mature whisky in each ration of milk. A glass of dry champagne may be allowed twice a day with a meat meal if the mouth is dry and the appetite is poor. Malt liquors and all red wines are more or less incompatible with a diet into which milk largely enters. Lemonade taken with red wines seems to make them lighter, more palatable, and more digestible.

The medical treatment is general, symptomatic, or special or specific. Drugs should never be used, except on the clearest indications. If the tongue is coated, minute repeated doses of calomel may be given every ten minutes, until one-third of a grain has been taken, followed by sodium salicylate in ten-grain doses, with tincture of nux vomica and gentian mixture, once or twice a day, and if there are hepatic complications, with or

¹ Lancet, June 3, 1899, p. 1479.

without constipation, compound tincture of rhubarb may be added in appropriate doses. In case of failure, ammonium chloride in twenty-grain doses may be substituted for the salicylate. When the tongue is epitheliated or irritable, and there is nausea, preparations of bismuth are indicated. If there is anorexia and the tongue is clean, small doses of strychnin, dilute hydrochloric acid and quinin may be given. When cough is distressing or injurious a few drops of a mixture of chloroform-one part and guaiacol three parts may be inspired as deeply as possible through the mouth and respired through the nose. Cod-liver oil and malt extract are special foods directed to supplement nutrition. Tuberculin is the single remedy that has established any distinct claim to be considered a specific.

Creosote and guaiacol and their carbonates have in recent years found much favor in the treatment of pulmonary tuberculosis. These may be advantageously combined with strychnin hypodermically. They reduce the temperature without causing undue perspiration or reaction of any kind. When the pyrexia has been reduced by this means smaller doses by the mouth are substituted, and when markedly strumous indications are present, from 5 to 15 minims of tincture of iodine in cod-liver oil are given in addition three times a day. If the temperature does not quickly respond to injections of guaiacol, 15 grains of sodium salicylate together with 5 grains of antifebrin or phenacetin, or 10 grains of antipyrin are given. In the presence of cyanosis and indications of cardiac debility, 5 grains of caffeine citrate are added. Guaiacol may be given hypodermically, also in chronic cases when the destruction of lung is extensive, and the amount of expectoration is large and does not lessen when the drug has been given internally. Guaiacol carbonate has been found useful in cases complicated by diarrhea and other irritable conditions of the bowel.

In cases of chronic pulmonary tuberculosis the treatment indicated is mainly disciplinary and dietetic, and environment now takes a more important part in the process of convalescence, though the tendency of the arrested morbid process is toward repair and recovery, and purely hygienic treatment assumes an important role. To be efficacious this must be carried out systematically, and in properly located and appropriately constructed sanitariums under efficient medical control, and it must be carefully adapted to the idiosyncrasies and personal requirements of each individual patient. At the Royal National Hospital for Consumption and Diseases of the Chest, at Ventnor, the following rational therapeutic system is carried out: 1. The diet, into which milk largely enters, is ample, simple, and yet varied, and is adapted to the general condition of the patient and the stage of the disease. It is arranged into convalescent, special, and pyrexial varieties, but in every detail it is modified according to the exigencies of each case. 2. Rest and exercise are carried out on the principles generally recognized. 3. The freest exposure possible to the open air, of all the patients, pyrexial patients being carried on their beds or couches on to the veranda on which their rooms open, and the supplementing of the natural ventilation of the rooms by mechanical means while in occupation. 4. The scientific treatment of symptoms by remedies directed as much as possible to the disease processes within the body in which they originate. 5. The reinforcement of the purely medical supervision of the patients by a body of specially trained nurses. 6. The appreciation at their true value of the accessory conditions of climate, site, elevation, shelter or exposure, rainfall, sunshine, and nature, and the relations of soil to water.

New York City.

WATER POLLUTION.—The unprecedented drought of the early summer has not only brought to attention the menace of a water famine but, as well, the quality of the water-supply of the several distinct boroughs of the city. Two of these corporate entities, Manhattan and the Bronx, depend on the Croton system; Brooklyn combines both public and private sources of supply derived from outlying districts of Long Island; Queens has a small system only just capable of supplying its present needs; Richmond draws on several sources in Staten Island. The present complaints are most strongly made in the two large boroughs, Manhattan and the Bronx and Brooklyn, and the complaints bear on quantity and quality. As for the former item, temporary relief will follow the coming of normal conditions of precipitation, and the dangerous inefficiency of the sys-

tem will probably be quite forgotten until the next period of stress which shows the inefficiency of the service system. The remedy of the poor quality will not be the same, for abundant rains falling on the polluted watershed and catchment area will at first make matters worse. At present the Croton water is muddy to look at, populous under the microscope, and decays most rapidly when set aside in any vessel. This has been found particularly true of the Croton service in Manhattan, and in Brooklyn, of the municipal supply known as Ridgewood. Whatever is now suggested for the improvement of the water-supply, both in quantity and quality, falls for the present under two heads. The first looks to the increase of the present supply by including larger territory in the catchment area. In the case of New York and Brooklyn there are physical reasons why such measures shall be only palliative. The available area of watershed is determined by the engineer with his application of physiographic principles, and these show that the limit has been almost reached. The fuller appreciation of the eventual needs of the metropolitan district looks to the Adirondack sources for the supply of unlimited water of the purest character. The distance is great and the initial expense will be great. But there are intermediate cities along the Hudson which will take the service and by so doing reduce the cost to New York City. This plan is now being worked out in full detail, and enough of its possibilities is known to prove that it is no more difficult than the plan now under way to supply the cities of central California, as far as San Francisco and Oakland, with mountain water from Lake Tahoe.

SOFT COAL SMOKE NUISANCE.—Among the many duties imposed on the Department of Health, by the New York Consolidation Act or charter, is the repression of the nuisance caused by the using of soft coal on vessels within the municipal waters and ashore at various factories. The evil is of recent growth, for New York has always been an anthracite-burning community until the opening of new fields of bituminous coal, new transportation combinations, together with the enhanced cost of mining anthracite has made it an objective point for bituminous operators. The law prohibits the use of bituminous coals, but in practice the law is not enforced in cases where smoke-consumers are used which really do consume the smoke. The first offenders were the tugs and ferry-boats. When it was found impracticable to equip these vessels with efficient smoke-consuming devices the law was rigidly enforced against them and they were obliged to return to the use of anthracite. The most recent offenders are certain manufacturers in Brooklyn, mainly breweries and a new sugar refinery. For several weeks they have been belching out foul clouds of black smoke. There is an active citizens' association organized expressly to look after users of offensive soft coal. They brought suit through the ordinary police channels and met a setback. But the Department of Health took note of the matter from press reports, and the sanitary police are now securing the necessary evidence which will shortly enable the Department to take action in the case. Over any large city there must be a certain amount of smoke, but in the clear air of New York any offender against the smoke ordinance is very noticeable, and with interest manifested by the Department of Health the nuisance is soon abated.

The Public Service.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., to and including July 13, 1899:

Fercy Ahrous, acting asst.-surgeon, from New Orleans, La., to Division of Cuba.
 Dallas Bache, colonel and asst. surgeon general, U. S. A., president of a board convened at West Point, N. Y., for the physical examination of candidates for admission to the U. S. Military Academy.
 Edward N. Bowen, acting asst.-surgeon, from Springfield, Mass., to San Francisco, Cal., for duty in the Department of California.
 Henry H. Bradley, acting asst.-surgeon from the general hospital at

Savannah, Ga., to Camp Meade, Middletown, Pa., to accompany the 18th Inf. to Manila, P. I.

Thomas S. Benton, captain and asst.-surgeon, U. S. A., from Fort Stevens, Tybee Island, Ga., to Camp Meade, Pa., to accompany the 19th Inf. to Manila, P. I.

Rollin T. Burr, acting asst.-surgeon, from Pomona, Cal. to Division of Cuba.

Joseph H. Chmelicek, acting asst.-surgeon, from New York City to San Francisco, Cal., for duty in the Department of California.

A. F. D. Clerly, acting asst.-surgeon, now on duty at Atlanta, Ga., to proceed to Camp Meade, Pa., to accompany the 19th Inf. to Manila, P. I. Samuel P. Cottrell, acting asst.-surgeon, from the Department of Santiago and Puerto Principe, Cuba, to duty at Camp Meade, Middletown, Pa.

A. Deane, lieutenant and asst.-surgeon, U. S. A., from duty as attending surgeon and examiner of recruits at St. Paul, Minn., to San Francisco, Cal., for duty in the Department of California.

Lieben De Poorter, Jr., acting asst.-surgeon, from New Orleans, La., to the Division of Cuba.

Charles M. Gandy, captain and asst.-surgeon, U. S. A., member of a board convened at West Point, N. Y., for the physical examination of candidates for admission to the U. S. Military Academy.

Leonard K. Graves, acting asst.-surgeon, leave of absence extended.

Joseph N. Henry, major and surgeon, Vols., assigned to the 31st Inf. Vols., to proceed from Washington, D. C., to Fort Thomas, Ky., for duty with his regiment.

Deane C. Howard, captain and asst.-surgeon, U. S. A., from Fort Columbus, New York Harbor, to West Point, N. Y., for temporary duty.

Jefferson R. Keen, major and surgeon Vols., (captain and asst.-surgeon U. S. A.) now on duty as chief surgeon Department of the Province of Havana and Pinar del Rio, Cuba, is relieved from his station at Fort Warren, Mass.

Louis A. La Garde, major and surgeon, U. S. A., member of a board convened at West Point, N. Y., for the physical examination of candidates for admission to the Military Academy.

Clarence B. Millhoff, lieutenant and asst.-surgeon, U. S. A., former orders so amended as to direct him to report to the commanding general, Department of California, on the arrival of the 18th Inf. at San Francisco, Cal.

Francis S. Nash, acting asst.-surgeon, to examine recruits for the 27th Inf. Vols., at Washington, D. C.

George J. Newgard, captain and asst.-surgeon, U. S. A., from Fort Adams, R. I., to Camp Meade, Pa., for duty at the camp hospital.

George Newlove, acting asst.-surgeon, member of an examining board at Fort Leavenworth, Kas., in place of Lieut. Basil H. Dutcher, acting asst.-surgeon, U. S. A., relieved.

James M. Parrott, acting asst.-surgeon, from Kinston, N. C., to the Division of Cuba.

Frederick H. Sparrenberger, acting asst.-surgeon, from Passaic, N. J., to the Division of Cuba.

Frederick C. Weaver, acting asst.-surgeon, to San Francisco, Cal., for duty in the Department of California.

J. L. White, acting asst.-surgeon, from the Department of Porto Rico to report at Washington, D. C., to the Surgeon-General.

Timothy E. Wilcox, major and surgeon, U. S. A., from duty in New York City to post duty at Fort Schuyler, N. Y.

Assignments.—The following assignments were made of medical officers recently appointed in the U. S. Vols., to rank from July 5, 1899:

To the 24th Infantry, Vols., headquarters at Plattsburg Barracks, N. Y.: Major Charles F. Mason, surgeon; Capt. Frederick A. Washburn, Jr., asst.-surgeon; Lieut. John E. Boyd, asst.-surgeon.

To the 27th Infantry, Vols., headquarters at Camp Meade, Pa.: Major Ogden Rafferty, surgeon; Capt. James H. Hepburn, asst.-surgeon; Lieut. Leonard K. Graves, asst.-surgeon.

To the 28th Infantry, Vols., headquarters at Camp Meade, Pa.: Major Thomas C. Chalmers, surgeon; Capt. S. Chase de Krafft, asst.-surgeon; Lieut. Allen J. Black, asst.-surgeon.

To the 29th Infantry, Vols., headquarters at Fort McPherson, Atlanta, Ga.: Major Charles L. G. Anderson, surgeon; Capt. James C. Miner, asst.-surgeon; Lieut. Leoman S. Anderson, asst.-surgeon.

To the 30th Infantry, Vols., headquarters at Fort Sheridan, Ill.: Major John R. McMill, surgeon; Capt. James J. Irwin, asst.-surgeon; Lieut. Albert H. Eber, asst.-surgeon.

To the 31st Infantry, Vols., headquarters at Fort Thomas, Ky.: Major Joseph N. Henry, surgeon; Capt. Abram L. Haines, asst.-surgeon; Lieut. Ralph S. Porter, asst.-surgeon.

To the 32d Infantry, Vols., headquarters at Fort Leavenworth, Kas.: Major Frank C. Armstrong, surgeon; Capt. John R. Hereford, asst.-surgeon; Lieut. William H. Cook, asst.-surgeon.

To the 33d Infantry, Vols., headquarters at Fort Sam Houston, Texas: Major B. Albert Lieberman, surgeon; Capt. W. E. Parker, asst.-surgeon.

To the 34th Infantry, Vols., headquarters at Fort Logan, Colo.: Major James E. Shellenberger, surgeon; Capt. Frank W. Foxworthy, asst.-surgeon; Lieut. Patrick J. McKenna, asst.-surgeon.

To the 35th Infantry, Vols., headquarters at Vancouver Barracks, Wash.: Major Julius A. Schmelke, surgeon; Capt. Luther B. Grandy, asst.-surgeon; Lieut. John A. Metzger, asst.-surgeon.

Captains James H. Hepburn and Luther B. Grandy will join their respective regiments upon the arrival thereof in the Philippine Islands.

The other officers named in this order will proceed at once to the headquarters of their respective regiments and report in person to their regimental commanders for assignment to duty.

Movements of Navy Medical Officers.—Changes in the medical corps of the U. S. Navy for the week ending July 15, 1899:

Surgeon L. B. Baldwin, detached from the Key West Naval Station and ordered to hospital, New York, for treatment.

P. A. Surgeon R. G. Brodriek, granted sick leave for six months.

Asst.-Surgeon R. K. McClanahan, detached from the naval hospital at Philadelphia, Pa., and ordered to the Key West Naval Station.

P. A. Surgeon L. L. Young, sick leave extended three months.

Surgeon J. M. Steele, detached from duty in connection with recruiting rendezvous at Baltimore, Md., and ordered home to wait orders.

Marine-Hospital Changes.—Official List of Changes of Station, and Dates of Commissioned and Non-Commissioned Officers of the U. S. Marine-Hospital Service, for the seven days ended July 13, 1899.

Asst.-Surgeon W. R. McAdam, granted leave of absence for fourteen days.

Asst.-Surgeon Carl Ramus, relieved from duty at the Cape Charles Quarantine Station and directed to proceed to Havana, Cuba, and report to Acting H. R. Carter for duty.

Surgeon Asst.-Surgeon J. P. C. Foster, granted leave of absence for thirty days.

Hospital Steward W. J. Stearns, relieved from duty at New York City (Stapleton, Staten Island), and directed to report to the medical purveyor New York City, for duty.

Hospital Steward G. C. Allen, relieved from duty at Baltimore, Md., and directed to proceed to New York City, and report to the commanding officer for duty and assignment to quarters.

Hospital Steward F. H. Peck, relieved from duty at the Egmont Key Detention Camp and directed to proceed to Baltimore, Md., and report to the commanding officer for duty and assignment to quarters.

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended July 15, 1899:

SMALLPOX—UNITED STATES.

Florida: Jacksonville, July 1 to 6, 3 cases.

Illinois: Chicago, June 24 to July 1, 2 cases.

Kentucky: Louisville, June 23 to July 6, 8 cases.

Louisiana: New Orleans, June 24 to July 8, 5 cases, 1 death; Shreveport, June 24 to July 8, 1 case.

Massachusetts: Boston, July 8, 3 cases, 2 deaths.

Mississippi: Natchez, July 7, 1 case.

New York: New York, June 24 to July 8, 7 cases, 1 death.

North Carolina: Charlotte, June 24 to 30, 1 case.

Ohio: Cincinnati, July 7, 2 cases; Cleveland, July 1, 2 cases.

Oregon: Portland, June 29 to date, 4 cases.

Pennsylvania: Philadelphia, July 1 to 8, 1 case.

Virginia: Cape Charles, July 8, 1 case; Danville, July 6, 3 cases, total 30 cases.

North Carolina: Norfolk, July 6, 6 cases; Portsmouth, July 8, 4 cases.

Washington: Tacoma, July 3, 1 case.

SMALLPOX—FOREIGN.

Argentina: Buenos Ayres, April 1 to 30, 1 death.

Brazil: Rio de Janeiro, May 27 to June 8, 77 cases, 29 deaths.

China: Fuchuan, May 6 to 13, prevalent.

Cuba: Havana, June 23, 1 death.

England: London, June 17 to 24, 1 case.

France: Marseilles, June 25 to July 1, 1 case.

India: Bombay, June 6 to 13, 4 deaths; Madras, May 27 to June 2, 2 deaths.

Mexico: Mexico, June 23 to July 2, 8 cases, 3 deaths.

YELLOW FEVER.

Argentina: Buenos Ayres, April 1 to 30, 4 deaths.

Brazil: Rio de Janeiro, May 27 to June 9, 19 deaths.

Cuba: Havana, July 6, 2 cases; Santiago June 15 to July 10, 148 cases, 28 deaths.

Mexico: Vera Cruz, June 29 to July 6, 25 deaths; on bark *Dolores Romano* at Vera Cruz, Mexico, July 1, 7 cases.

CHOLERA.

India: Bombay, June 6 to 13, 1 death; Calcutta, May 27 to June 3, 23 deaths; Madras, May 27 to June 2, 3 deaths.

PLAGUE.

Egypt: Alexandria, June 16 to 23, 6 cases remaining.

India: Bombay, June 6 to 13, 55 deaths; Calcutta, May 27 to June 3, 32 deaths.

Japan: Formosa, Tamsui, April 23 to May 3, 147 deaths.

CHANGE OF ADDRESS.

Adams, J. L., from Morgan, Minn., to Anacondas, Colo. Beckler, J. P., from 503 S. Warren, to 318 W. Onondaga St., Syracuse, N. Y. Brown, G. M., from Chicago to Davis Junction, Ill.

Brooks, S. D., from Nat'l Quarantine Sta., Angel Island, Cal., to U. S. Marine Hospital, Portland, Me.

Bennett, A. L., from St. Anne, Ill., to 1483 Pearl St., Denver, Colo.

Croschmitt, W. L., from Louisville, Ky., to Holland, Texas.

DeBor, H. B., from 352 Blue Island, to 625 S. Ashland Av., Chicago.

Edmondoff, E. H., from Galveston to San Antonio, Texas.

Gates, L. A., from Thermopolis, Wyo., to Bridges, Mont.

Goggia, R. J., from Pulcifer to Swing, Wis.

Kay, from Dupont to Continental, Ohio.

Hix, A. E., from 1431 Monroe St., to 1009 Warren Av., Chicago.

Lawson, F. W., from 1-1/2 Irving to Caldwell, Mich.

Mincey, J. N., from Van Alstyne to Howe, Texas.

O'Brien, M. C., from New York City to Lewiston, Me.

Paquin, J., from St. Louis to Asheville Sanitarium, Asheville, N. C.

Ransom, C. C., from New York City to Richfield Springs, N. Y.

Snow, B. G., from Ann Arbor to Caldwell, Mich.

Saltzger, W. R., from Van Wert, Ohio, to Knoxville, Tenn.

Tappan, J. C., from 507 B. St., E., to 65 R. St., N. W., Washington, D. C.

Thompson, J. R., from Richmond, Va., to Colley, N. C.

Weitz, J. A., from Detroit, Mich., to Montpelier, Ohio.

The Journal of the American Medical Association

VOL. XXXIII

CHICAGO, ILLINOIS, JULY 29, 1899.

No. 5.

Address.

THE ESOPHAGUS.*

CICATRICAL STRICTURE THEREOF: ITS TREATMENT.

CHAIRMAN'S ADDRESS.

BY W. J. MAYO, M.D.

SURGEON TO ST. MARY'S HOSPITAL,
ROCHESTER, MINN.

Esophageal obstruction is a subject which must command the attention of every thoughtful surgeon. The inaccessible situation of the gullet, its relation to important structures, and the difficulty attending manipulations within its narrow lumen, all tend to place it among the surgical problems which are difficult of solution. The cases are sufficiently rare to render an individual experience incomplete, and yet are frequent enough to stimulate our best endeavor for their relief.

Koenig makes a very practical classification of esophageal obstructions into:

1. Those located within the esophagus, such as inflammatory spasmodic or cicatricial strictures, foreign bodies, tumors and diverticula.

2. Pressure obstructions located without the esophagus, especially tumors involving the thyroid body, tracheal and mediastinal glands, or aneurysms of the arch of the aorta. Abscess from Pott's disease may also be the cause of pressure obstruction.

It is to a variety of the first group that I wish to call your attention at this time.

ETIOLOGY AND GENERAL CHARACTER.

Cicatricial stenosis of the esophagus is the result of the healing of an ulceration. The latter is produced by a traumatism, such as the swallowing of caustic alkali, acids or hot fluids; occasionally by a wound, or may be due to the prolonged lodgment of a foreign body. The most common cause, and especially so in children, is the accidental swallowing of concentrated lye.

In adults carbolic acid, ammonia, etc., are not infrequently taken, but the immediate mortality from the poisonous effects of the substance swallowed reduces the number who live to develop cicatrix to a small proportion.

The breaking down of a syphilitic gumma may leave an ulceration, and cases of stricture having its origin in this manner have been reported by Lubinski. Sonn says that syphilis may cause a fibrous stricture of any portion of the alimentary canal and states that it is not ulcerative in character.

Tubercular ulceration of the esophagus is usually secondary to the swallowing of infected sputum. Flexner reports 19 cases and Cone 28 of this variety. None of these cases healed to such an extent as to cause stricture. Primary tuberculosis of the gullet is very rare:

however, it occurs and may be the cause of stenosis. Zenker reports such a case. Poncet cites a case of obstruction due to the ulceration attending actinomycosis; no attempt at healing was noted, the interference being mechanical. Fibrous strictures of the esophagus without ulceration have been variously described as idiopathic, syphilitic, gouty, rheumatic or due to chronic esophagitis. Audry records two such cases supposed to be cancerous, which after death proved to be due to hyperplasia of the muscular coat. Ingals reports several instances occurring in one family. Rumpel cites a case of fusiform dilatation of the esophagus, due as he believes to a spasmodic contraction of the thickened muscular coat at the lower end of the gullet and collects 20 cases from medical literature.

The pathologic condition found in the reported cases of this description shows a remarkable resemblance to the large fibrous stricture of the pylorus and to that form of fibrous stricture of the rectum the etiology of which has been the subject of controversy for years. It is probable that these strictures of the alimentary canal have a common origin, and for convenience fibrous strictures of the gullet are classed with the cicatricial form.

Simple strictures of the esophagus, of unknown origin, are not uncommon. Kendall Franks records a number of this variety. Ewald states that the simple or peptic ulcer may be the cause of stenosis and cites cases; it is possible that this is the etiology of many of the so-called simple strictures. Congenital strictures are described at length by Carey, with a report of cases from the literature of the subject.

As the treatment of the simple and congenital forms is essentially the same as that of the variety under discussion, they are included in the same class. The locations of strictures of the gullet for anatomical reasons are most common in three localities: 1, at the isthmus of the esophagus opposite the cricoid cartilage; 2, at or near the bifurcation of the trachea where the gullet is crossed by the left bronchus; 3, at the diaphragmatic opening. According to the researches of Hacker this latter locality is most commonly affected by caustics.

In the adult the gullet is from nine to ten inches in length, and Richardson has shown that from the incisor teeth to the diaphragmatic opening it is about 14½ inches, measurements which aid the exact location by the sound. If the stricture can be passed by an olive bougie, Tillman advises that the tip be inserted well beyond the stenosis; on withdrawing, the handle is marked as resistance begins and again as it passes through the stricture. The distance can thus be easily estimated. Not infrequently several strictures are found, or the whole of the esophagus may be obliterated, as in cases reported by Richardson and also by Hacker.

DIAGNOSIS.

The diagnosis of the obstruction is easy, in fact, advanced mechanical stricture gives a group of symptoms which are self-evident; of these dysphagia and regurgi-

*Presented to the Section on Surgery and Anatomy at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

tation of food are most prominent and if the obstruction lies in the cervical portion dysphonia and dyspnea may be observed. Sounding with suitable bougies completes the diagnosis.

In children with advanced cicatricial stenosis, the emaciation, the anxious, hungry expression, the constant desire for liquids and rapid regurgitation form a clinical picture which hardly needs a question. In adults the differentiation as to the nature of the stenosis may be more difficult.

Spasmodic stricture is not rare, and usually occurs in people of a hysterical tendency. According to Mansell Moullin, slight traumatism are frequently the exciting cause of the hysterical form and the injury may be grossly exaggerated by the patient. The lack of sufficient cause, the suddenness of the onset and the neurotic history will usually suffice to clear up the diagnosis. Yet cases are recorded by Pepper and others in which it was necessary to resort to sounding under anesthesia to positively exclude organic stricture.

Esophageal diverticuli may cause difficulty in diagnosis. The origin of these pouches is stated by Maylard to be: 1, congenital; 2, the result of a strictured condition below; 3, from pressure or traction. These diverticuli are most common on the posterior wall about on a level with the cricoid cartilage. Error in sounding is thus liable to occur, the bougie passing into the pocket. The possibility of such occurrence will put one on guard and prevent serious difficulty in differentiation.

Butlin has collected a number of cases from the London hospital reports, many of which have been diagnosed as stricture. Malignant strictures and pressure tumors suggest at once clinical phenomena which will render exclusion easy.

Esophagoscopy cannot be considered an important aid to diagnosis. Hacker in Billroth's clinic used a Leiter pancelectric light, with small benefit, and while numerous devices have been developed since, not much evidence of value has accumulated. Stork describes a new esophagoscope, but its usefulness seems uncertain. Einhorn is one of the few authorities who place reliance upon this clinical method in diagnosis.

PROGNOSIS.

The prognosis of untreated cicatricial stenosis is bad, there is a constant tendency to contract, indeed there seems to be no limit to this process.

The esophagus gradually dilates above the stricture, its muscular coat hypertrophies and by a squeezing process some nourishment is forced through the stenosed portion until a late date, the starvation being a very slow process. In time fatty degeneration of the muscle fiber renders it unequal to its task and also makes instrumentation exceedingly dangerous. Many deaths have been reported from instrumental perforation, by Sands and others. A casual examination of the literature of the subject leads one to think that this is not an uncommon accident in attempts at sounding in late cases. Weinelechner describes an island-like stricture which may prevent the passage of solid food and yet not cause complete obstruction to a fluid diet for an indefinite time. I have observed such a case.

CASE 1.—Stricture of Esophagus Impermeable to Bougie—Comfortable Existence for Years on a Fluid Diet.—Mrs. P. McK., aged 36 years, the mother of a large family, in August, 1891, gave a history of having swallowed caustic lye when a child; since that time she has lived on a fluid diet, being able to swallow only strained liquid food. She has frequent attacks of regurgitation lasting several days at a time, and

thinks that on an average one-third of the food is regurgitated. At times she gets very thin.

She is a badly nourished woman, of slender build and anemic appearance. Careful sounding reveals a dense stricture near the cardiac end of the esophagus. Above the stricture the esophagus is dilated to a considerable extent. Repeated examination failed to pass the stricture. The patient refused any operative interference, and has passed from observation.

TREATMENT.

The treatment of traumatism of the esophagus at an early period, before contraction takes place, is of the utmost importance. Many of the unfortunate results in this way can be avoided or rendered manageable. After the swallowing of a caustic substance systematic sounding should be commenced in from two to four weeks (Meyer). Foreign bodies should not be allowed to remain in the esophagus until ulceration is produced, and prolonged attempts at removal through the mouth can not be considered good surgery. Gerster directs attention to the case with which foreign bodies can be removed through an external esophagotomy if done early, before ulceration has taken place; in this way Dr. C. H. Mayo has on five occasions readily removed foreign bodies from the lower part of the esophagus. The X-ray is of great value in locating many of these bodies, and a right incision in the neck instead of the ordinary left may be indicated, as in a case of an impacted overshoe buckle in which the loop to the right and the sharp prongs to the left decided the question.

In the lower esophagus the method of Maurice H. Richardson—removal through an incision in the stomach wall—is of the greatest value and must rank as one of the achievements of modern surgery. Tillman strongly advocates preliminary gastrostomy for feeding purposes in the primary stages of acute ulceration, thereby lessening the infection and hastening cure. In tubercular and syphilitic ulceration appropriate constitutional treatment should be used in conjunction with the sounding during the period of cicatrization.

DILATABLE STRICTURES.

Gradual dilation is the method of choice in this form of stenosis. The larger and softer the dilator the better, but in many advanced cases such instruments are wholly worthless. In these cases the use of whalebone olive-tipped probes are best for the smaller varieties, and for the larger bougies a whalebone stem to which increasing sizes of metal or ivory olive tips can be attached are the most valuable. If the tip is made very long and tapering it will engage in the stenosed portion more quickly than the ordinary olive tip, which expands so rapidly that one can not easily appreciate whether it is engaged in the stricture or not.

In a previous paper on this subject, read before the Minnesota Academy of Medicine in March, 1894, I exhibited what I then believed to be a new probe in which three or four increasing sizes of bulbs were made on a single stem (Trousseau's), the idea being that the small tip would railroad the others through. As a matter of fact it prevented that elasticity within a few inches of the tip which is a prime essential in a good bougie, enabling one to pass through the curved pharynx without injuriously impinging on the posterior wall. This elasticity is necessary, as it also permits of some play at the point and facilitates search of the face of the stricture for the opening.

Many cases appear to be impermeable to the probe, which in time may be safely passed. The frightened little sufferer adds to the general discomfort and renders a hasty judgment in this regard only too natural. I once heard an eminent genito-urinary surgeon say that

impermeable strictures of the urethra happened largely in an early experience, and I am sure that this is true of esophageal stricture. With care and gentleness a bougie can usually be inserted in the opening, although several sittings may be required. In such cases a number of whalebone bougies lubricated with glycerin should be passed into the gullet and against the stricture in the same manner as filiforms are used in the urethra, and by alternating probes one will usually slip through. It is best to stop here, and then every other day repeat the process, using perhaps several increasing sizes at one sitting; the first probe introduced should have a very flexible handle, and when in place straightens the throat curve so that the larger and stiffer bougies readily follow, each one being left in the stricture until the next one is ready by its side. In a few cases it may be necessary to use an anesthetic the first time or two, but usually the patient will sit on a low stool facing the opera-

At no time since the injury has solid food been taken, and a large part of liquid nourishment swallowed is regurgitated. Before admission to the hospital several attempts at sounding the esophagus had been made, but without success. On examination a stricture was detected in the thoracic esophagus. Under anesthesia several whalebone bougies were placed in position, and by using first one and then another, a probe was finally passed into the stomach. The stricture dilated easily and a fair-sized bougie was introduced at this time. Systematic sounding every third day was carried out, and March 8, 1898, the little patient was discharged, able to take liquids easily, and chopped meat and softened bread with but little difficulty. Since that time Dr. S. H. VanCleve of Mantorville has continued sounding at intervals, the esophagus being of nearly normal caliber.

NON-DILATABLE STRICTURES.

Stenosis involving a large extent of the esophagus may prevent gradual dilatation or even continue to contract while attempts at dilatation are being carried out, and in a few cases the difficulties and dangers attending the sounding of a tight stricture makes a resort to some more rapid method desirable.

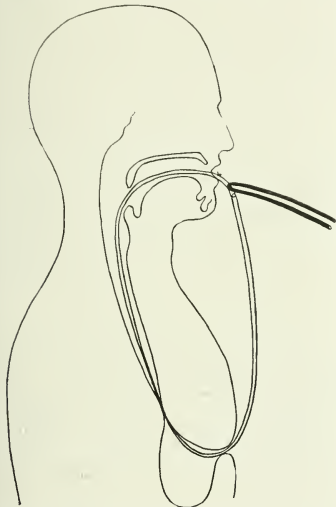


Figure 1 shows manner of introducing the silk cord with the rubber drainage tube looped in position ready for introduction.

Figure 1a shows the manner in which the tube is drawn out in order to pass through a tight stricture.

tor, and from the relief afforded by the ability to retain a little nourishment will soon face the ordeal with an unexpected degree of fortitude. The frequency of sounding depends on the case, every other day being sufficient, and in sensitive cases perhaps too frequent. Many months are occupied in this gradual dilatation, and after apparent cure a sound should be passed occasionally for years.

Case 2.—*Stricture of Esophagus—Gradual Dilatation—Recovery.*—T. C., a male, aged 2 years, of Mantorville, Minn., was admitted to St. Mary's Hospital, Rochester, Minn., Feb. 24, 1898, with a history of having accidentally swallowed concentrated lye seven weeks previously. Difficulty in swallowing developed at once. At first this was due to traumatism and resulting ulceration, later to the contraction.

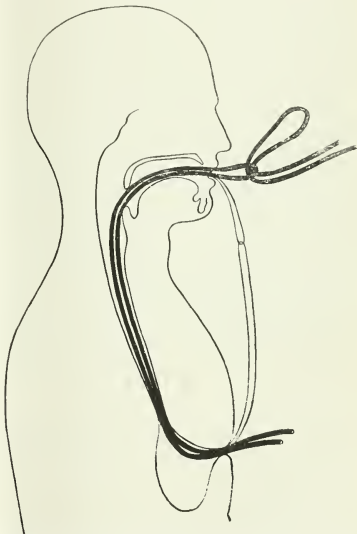


Figure 2 shows a double rubber drainage-tube, looped into one already drawn through. As many tubes as may be necessary to obtain the desired dilatation may be drawn through in this way.

For strictures in the vicinity of the cricoid cartilage external esophagotomy after Billroth is the operation of choice. Like the perineal cut for stricture of the urethra, funnel-shaped retraction of the cut portion is caused by adhesion to the external tissues divided and it lessens future contraction. This operation, first performed by Mitchel and later by Annandale, has stood the test, and should not be long delayed. A most interesting case of this kind is recorded by Christian Fenger. Kendall Franks has successfully performed esophagectomy in a case of simple stricture in this portion of the esophagus, the divided ends being sutured over a tube passed through the nose.

For dense stricture above the arch of the aorta and

below the point which can be directly divided, Gussenbauer's combined esophagotomy is the best operation; through an external incision in the neck a tenotome is introduced and passed downward to the stricture, which is then divided.

I take the liberty to introduce an illustrative case previously reported:

CASE 3.—*Two Strictures of Esophagus—Prolonged Dilatation and Combined Esophagotomy—Recovery.*—J. Hanev, aged 4 years, was seen in January, 1893. In the spring of 1892, while living in North Dakota, the child swallowed concentrated lye. After a month's severe illness, he gradually recovered, but with an increasing difficulty in swallowing. During the past three months all food had to be strained and he has frequent attacks of regurgitation. The material regurgitated is brought up somewhat slowly. He is a moderately nourished boy, of good disposition, which materially aided treatment. On the introduction of a catheter it was arrested at the isthmus of the gullet. After some manipulation a No. 3 urethral catheter was passed three inches farther downward, where it was completely arrested.

It was very evident that there was a stricture at the level of the cricoid cartilage, and a second in the intrathoracic portion of the esophagus, undoubtedly produced by the action of the esophageal muscles at the time of the original accident, causing the effect of the lye to be located at these points.

Regular sounding was instituted and continued at intervals of three to ten days, by myself or Dr. C. H. Mayo, with but slight interruption for one year. At the end of two months the lowest stricture was passed by a fine whalebone bougie. This stricture was very dense, and resisted sounding obstinately; it could be only at intervals of several sittings that the bougie could be introduced into the stomach. At the end of a year's perseverance the upper stricture had yielded to the extent of admitting a No. 5 catheter and the lower one a No. 3. The boy was well nourished, did not regurgitate unless he took solid food, and was able to take softened bread and finely chopped meat. During the preceding two months no perceptible improvement was manifest; therefore, on Feb. 15, 1894, he was admitted to St. Mary's Hospital, Rochester, Minn., and on Feb. 16, left external esophagotomy was performed by Dr. C. H. Mayo. The upper stricture was now readily dilated by forceps. The lower stricture, which was below the level of the upper end of the sternum, was carefully nicked with a dull knife on a grooved director and dilated with forceps, permitting of easy catheterization of the esophagus.

Unfortunately, the majority of dense strictures are in the lower esophagus, or if there is one stricture in the upper portion another will usually be found lower down. In three cases in the experience of the writer more than one stricture was present, but the lower in each instance was the more dense.

How to reach strictures situated below the arch of the aorta in the thoracic esophagus by direct means has been, and is yet, a problem. Nasoloff, Quénu and Hartmann developed an operation for external esophagotomy on the cadaver, which Rehn first performed on the living subject, an incision from the fourth to the eighth rib on the right side of the spinal column being employed.

The difficulties and dangers of this plan of attack are so great that indirect measures are to be relied upon.

For this purpose two methods are available—Abbe's string-saw and Ochsner's operation; in the latter a loop of rubber tubing is used as a dilating medium. The one method supplements the other. Division of the stricture by the string-saw invented by Abbe has been performed a number of times with great success.

Through a gastrostomy wound a stout silk cord is passed in a retrograde way through the esophagus and out through the mouth or through an external esophagotomy. The stricture is made tense by engaging bougies into it from below, and by a sawing motion of the cord, the tight bands are divided, while the important soft parts are crowded back out of the way. After full dilatation has been secured the incisions can be closed, or a rubber tube is inserted to a point above the stricture and brought out of the gastric incision, the

latter being united to the margins of the abdominal wound. In two or three days the tube is removed and sounding from above employed in the usual manner.

CASE 4.—*Stricture of Esophagus—Division and Dilatation After Gastrostomy and External Esophagotomy—Testimony as to the Value of Abbe's String Method of Division.*—H. W., aged 3 years, of Amboy, Minn., was admitted to St. Mary's Hospital, Rochester, Minn., on Oct. 5, 1892, with the following history, given by her mother.

One year previously the child accidentally swallowed caustic lye. For four years she was very sick, then gradually improved for several months, although totally unable to swallow solid food at any time. During the last six months she has had great difficulty in swallowing liquids, and has regurgitated from the esophagus more than half of the nourishment taken. She is emaciated to a considerable degree. Upon being given two ounces of milk it was drunk with avidity, but was nearly all regurgitated. The dilated esophagus above the stricture holds nearly four ounces of fluids. Bougies were inserted through the pharynx into the esophagus, but were completely arrested at its lower end, while careful search of the face of the stricture with a number of whalebone bougies, under anesthesia, failed to pass the stenosed portion. At intervals of four days this search was continued, but without result. While undergoing these repeated examinations the child became much better and was able to retain a larger proportion of liquid nourishment, and improved visibly.

Proper manipulation was much interfered with by the short, sharp curve of the child's pharynx and its small size; therefore external esophagotomy was urged upon the parents to permit of more direct access to the parts involved. This was declined, and the little girl was taken home at the end of two weeks.

On July 19, 1893, the child was readmitted to the hospital. The slight improvement had been of short duration, a gradual closing of the small channel had taken place, and for the past four weeks it had been nearly, if not quite, impermeable, so that the little patient had been nourished by rectal enemata.

She was emaciated to a marked degree. As before, careful search utterly failed to pass the stricture. External esophagotomy with a hope of finding a way through the damaged esophagus did not promise the rapid relief that the child's nutrition demanded; therefore, on July 20, 1893, a gastrostomy was made after the method of Fenger, the incision being made as high up and as close to the median line as possible, to permit of retrograde dilatation.

Fenger's operation was chosen, as permitting more direct and easy access to the cardiac orifice of the stomach, in place of that of Hacker or that of Witzel, which are far superior as to the preventing of leakage from the fistula, but also present greater obstruction to intragastric manipulation. The child was now well nourished through the gastric fistula, and twice a week the lower face of the stricture, which was at the diaphragmatic opening, was carefully searched for an outlet. On two occasions the finger was introduced through the fistula into the stomach and used as a guide for the probe, the patient being anesthetized. The dilation of the fistula necessary to introduce the finger in so small a subject greatly increased the leakage through the gastric opening, and the child again began to fail, from the inability of the stomach to retain nourishment.

On Aug. 25, 1893, a left external esophagotomy, at a low point in the neck, was performed by Dr. C. H. Mayo, and a bougie introduced by him through this opening and pressed against the stricture, pushing it downward into the stomach and holding it steadily. With a finger in the stomach, careful search now enabled me to pass a long malleable German-silver probe from the stomach through the stricture and out of the esophageal fistula in the neck, and a heavy double strand of braided silk was drawn through the channel, having an end out of the opening in the esophagus and also out of the gastric fistula. The stricture was about three-quarters of an inch in length, as nearly as could be ascertained. By using one strand to cut the tissues, after the method recommended by Dr. Robert Abbe, while knots were tied on the second strand and pulled into the obstruction to keep the stricture tense, the opening was greatly enlarged. This method of Abbe's was of the greatest value, and had but one disadvantage—that of cutting the edge of the gastric fistula when drawn taut. This was in part obviated by holding the lower end of the cutting thread in the bite forceps, held on a plane with the stricture from within the stomach. Knots on the second thread, to render the stricture tense, were equally good and easier of execution than pushing bougies from below into the small opening, as recommended by Abbe.

During the succeeding month at intervals of four days, this

process of division was carried on, and perforated shot clamped upon the thread were drawn through to assist in the dilatation, as they readily followed the tortuous passage. Bougies then became permissible, inserted first from the neck and later through the mouth.

In five weeks the threads were removed and dilatation was carried on with olive-tipped whalebone bougies made for the purpose. A sister of the little patient was taught to pass the probe, and the child was discharged in two months in a good general condition and able to drink milk readily and to take chopped meat and bread with little effort. The esophageal fistula had spontaneously closed, and the gastric opening, after being touched with the cautery was nearly cicatrized. March 19, 1899, the patient is well.

Ochsner's operation is performed as follows: The anterior wall of the stomach is drawn out of a left oblique incision through the abdominal coverings; a small opening is made into the stomach sufficient in size to introduce the finger. A whalebone probe, to the tip of which a silk string guide has been tied, is now passed through the esophagus either from above or retrograde, as in the Abbe method. With this guide a loop of silk is drawn out of the gastric incision in such manner as to leave the guide as a third string. Into this loop a small soft rubber drainage-tube three feet or more in length is caught in the middle; by traction on the ends of the doubled thread through the mouth, this loop of rubber tube is drawn through the stomach and made to engage in the stricture.

The greater the amount of traction the smaller the stretched rubber tube until it is sufficiently reduced in size to enter the stenosed portion; by alternating the direction of the pull the tube is drawn out by its free ends and in by the silk loop. Increasing sizes of tubes can be employed, and if necessary the third string can be used as a string saw after the Abbe plan of procedure. This operation was first successfully performed by Dr. A. J. Ochsner, of Chicago, in February, 1899. In April, 1899, I had an opportunity to employ this method, with the most satisfactory result.

CASE 5.—Stricture of the Esophagus—Gastrostomy and Dilatation by Ochsner's Method—Recovery.—G. H., a female, aged 9 years, of Etna, Minn., was admitted to St. Mary's Hospital, March 3, 1899, with the following history. Four months before, she accidentally swallowed concentrated lye. The ulceration produced was slow in healing and the difficulty in swallowing gradually became more pronounced. For the past month only liquids have been attempted, and the greater part has at once been regurgitated. Emaciation was extreme. On examination, a stricture in the lower esophagus was readily detected by a bougie. After considerable effort a fine whalebone probe was passed. There appeared to be two points of contraction, about an inch apart, the lower being at the diaphragmatic opening. Systematic probing during the next seven weeks did not yield much result; occasionally a larger probe could be passed, and again only the finest could be used. During this time renal feeding was employed to supplement the very limited nourishment obtained by means of the esophagus. The little patient became so reduced that on April 20, 1899, the abdomen was opened by a left oblique incision. A fine probe armed with a silk thread was passed through the esophagus into the stomach. The thread was caught and drawn out of the incision; by this means two threads of heavy silk were drawn upward and the silk guide left in position.

A quarter-inch rubber drainage-tube was lubricated and caught by the middle in the loop; by traction from above, the tube was drawn through the stomach and into the esophagus, considerable traction being required to engage it in the strictured area. By first using traction upward on the strings and then downward on the free ends of the tube, the stricture was rapidly dilated. The dilating tube was removed and a half-inch rubber tube was introduced into the gastric opening, and through this tube the three threads were drawn, the free ends being tied to the ends projecting from the mouth.

A gastric fistula was then formed after the method of Bernays, the rubber tube being enclosed by three superimposed circular purse-string sutures of catgut, one-fourth of an inch apart, introduced in the wall of the stomach around the incision, the margin of the fistula being then sutured to the ab-

dominal wound. This causes a cone or nipple-like projection of the wall into the lumen of the stomach, and through this tube sufficient nourishment was introduced. The general condition rapidly improved and systematic sounding was carried on as before, with increasing sizes of bougies. The patient is still under treatment.

Internal esophagotomy, first performed by Maisonneuve in 1861, has been made about twenty-five reported times (Richardson), with a death rate of over 25 per cent. Above the arch of the aorta it is unnecessary, below it is a chance shot and success a lucky accident. Koenig believes that permanent gastrostomy is preferable. Sands' instrument shares with Mackenzie's the doubtful honor of being best for the purpose. Meyer, in an interesting summing up of internal instrumental esophagotomy, says that the danger of accidental injury to important structures is not greater than the introduction of infective material without the gullet, such infections being responsible for more than half the mortality. He recommends gastrostomy for the purpose of feeding and also to allow of preliminary cleansing of the operative field, if internal instrumental esophagotomy is adopted. Internal division is nearly as dangerous as the cutting operation and less effective. Fletcher's esophageal divulsor has been used a few times. Dr. S. J. Mixer has devoted a great deal of attention to this subject. He recommends that Symonds' tube as originally advocated for malignant strictures be introduced, and believes that that steady pressure will gradually increase the caliber. It would seem that a stricture of sufficient size to permit of permanent tubage could be overcome by gradual dilatation. The literature of the subject is filled with cuts of more or less ingenious instruments for the purpose of dilating these strictures: the spiral rolled tin sounds of Rosenheim, the laminary tent of Senator, and a host of others, interesting but of questionable value; of these linear electrolysis as introduced by LeFort has had the greatest reputation. The marvelous nature of the cures wrought in many cases leads one to think that the enthusiastic advocates of electricity failed to exclude the spasmodic variety with sufficient care. One bears much less of the cure of strictures in this manner than five years ago.

IMPASSABLE STRICTURES.

In a moderate number of strictures a probe can not be passed through the mouth, yet after an external esophagotomy the bougie can be manipulated to so much better advantage that the opening may be found and, after a few soundings, conducted through the fistula; the future dilatation is continued through the mouth. Graser particularly advises this in children. Kammerer reported a case before the New York Surgical Society in which, after failing to pass the stricture by retrograde sounding through a gastric incision, success followed probing from above through an external esophagotomy. Koenig had a series of fine silver balls made and threaded; one swallowed at bed-time would usually pass the stenosed area during the night and was drawn back through by the thread in the morning. Zeeheisen records two cases in which an opening passable to a sound was secured in this manner. Billroth succeeded in several cases with a cylindrical cloth bougie partly filled with mercury, the weight and adaptability of the metal carrying it through.

Gastrostomy and retrograde dilatation were recommended by Schede in 1883, and first performed by Trendelenburg. Kendall Franks collected twenty cases cured in this manner. Since that time a large number of successful cases have been recorded. Great and unexpected difficulty is often experienced in attempting

retrograde dilatation through a gastric fistula. It is a surprising fact that under such circumstances it may be next to impossible to find the cardiac opening. For this reason the dilatation should be carried out as the primary operation if possible. Richardson directs that the anterior wall of the stomach be delivered and a small transverse incision made into its cavity near the lesser curvature, in the neighborhood of the pylorus; by traction on the stomach just below this incision the lesser curvature forms a sulcus along which the instruments glide into the cardiac orifice.

Hagenback turned defeat into triumph in a case in which he was unable to find the stricture from below, and made a gastric fistula for feeding purposes. He caused the patient to swallow a small perforated shot to which a thread was attached; this passed through the stricture and was hooked out of the fistula, acting as a guide for future manipulation.

Abbe recommends that a string guide be introduced by which dilating bougies can be drawn upward retrograde, and that this guide should be retained in place until a sound can be introduced from above. Observation has shown that it is possible to pass an instrument retrograde when impassable from above, but that regular dilatation from below without a guide may prove very difficult.

Twenty-eight cases from the literature of retrograde dilatation are analyzed by George Woolsey, and the comparative merits of the various methods of cutting are clearly stated.

It may happen that the condition of the patient will not permit prolonged attempts at retrograde dilatation, and a rapid gastrostomy should be done by the Witzel or the multiple purse-string method of Bernay, as either permits immediate feeding, does not leak, and yet can be readily converted into a direct opening by a dilator when needed for later attempts at retrograde dilatation. With the improvement in nutrition which follows gastrostomy and the absolute rest to the esophagus, in a short time a probe may be passed from above.

CASE 6.—Cicatrical Stenosis of the Esophagus—Gastrostomy—Gradual Dilatation Through the Mouth.—V. M., aged 3 years, of Madison, S. D., was admitted to St. Mary's Hospital Rochester, Minn., July 1, 1894. Nine months previous to admission the little fellow had accidentally swallowed concentrated lye. Symptoms of esophageal obstruction becoming more and more pronounced, attempts were made to dilate the stricture gullet without success. At first solids were regurgitated, later fluids, and for six weeks nourishment had been maintained by rectal feeding.

The child is emaciated to an extreme degree and is too feeble to stand. Fluids were eagerly swallowed only to be at once regurgitated. Attempts to pass whalebone probes through the stricture were unavailing. Gastrostomy after the Witzel method was performed and immediate feeding resorted to.

Regular feeding through the gastric fistula soon improved the general condition. Systematic search for an opening through the stricture from above was made every other day for several weeks before a small whalebone probe passed. After this success the bougie failed to find the orifice a second time for a number of days. Three months of persistent effort finally developed a moderately sure passage. For five months all the feeding was carried on by the gastric fistula, a good-sized opening through the stricture having developed by this time.

On Feb. 22, 1895, the patient was discharged, being able to eat ordinary food and since that time he had been regularly sounded and had remained in excellent health, until June, 1898, when he was readmitted with complete obstruction, having three days before accidentally swallowed a mass of chewing gum which had tightly wedged in the opening; this was removed with some difficulty.

During the four years which had elapsed the same bougies were continued by his parents without taking into account the growth of the child.

Proper sized probes were obtained, and he has since remained in good condition.

There will yet remain a few cases in which a large part of the esophagus is obliterated, and permanent gastrostomy after the Frank method is the melancholy outcome.

In summing up, the following conclusions may be formulated:

1. Systematic sounding should be commenced in from two to four weeks after the swallowing of a caustic substance.
2. Should the traumatism be severe, immediate gastrostomy will lessen inflection and hasten cicatrization, sounding being carried on as before.
3. Non-dilatatable strictures in the vicinity of the cricoid cartilage should be divided by external esophagotomy.
4. Stricture above the arch of the aorta may be safely cut by a combined internal and external esophagotomy.
5. Dense thoracic strictures are best dilated by Ochsner's method, and, if necessary, divided by Abbe's string saw.
6. Impassable strictures should be treated by retrograde dilatation.
7. A dilated stricture should be occasionally sounded for years, if not for life.

BIBLIOGRAPHY.

1. Mayo: *Northwestern Lancet*, Dec. 1, 1896.
2. Fenger: *Medical Age*, March, 1898, No. 6.
3. *Northwestern Lancet*, April 15, 1894.
4. *N. Y. Medical Journal*, April 7, 1894.
5. *Annals of Surgery*, 1894.
6. *Ibid.*, 1893, p. 253.

Original Articles.

QUININ IN MALARIA.*

BY GEORGE DOCK, M.D.

ANN ARBOR, MICH.

A perusal of current literature and an experience with physicians in active practice show many differences of opinion regarding the use and value of quinin in various malarial diseases. The recent war, by exposing large numbers of men to real or imaginary malaria, brought out in a striking manner many of the most common views, and the numerous articles directly and indirectly touching the subject seem to justify a somewhat dogmatic consideration of certain salient features.

Why We Use Quinin in Malaria.—It should not be forgotten that our use of quinin is due to an accidental discovery and that the value of the drug and fairly reliable methods of administration were known long before we had any accurate knowledge of the cause of the disease or the nature of the changes produced by it in the body.

As is well known, malaria is a disease that in most cases tends naturally to recovery, so far as each attack is concerned, with a tendency, almost as strong, to relapses. It might, therefore, be considered good practice to treat the patient expectantly as many treat other self-limited diseases. Without wishing to appear as advocating such a policy in any self-limited disease, I wish to point out why we should not, as a matter of routine, in malaria.

Each malarial paroxysm does harm in certain well-known ways, and in some not so well known. Of the first it is enough to mention the destruction of red blood-corpuses, which, even in a seemingly mild case, may be quite extensive, and in a severe paroxysm may amount

* Presented to the Section on Practice of Medicine at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus Ohio, June 6-9, 1895.

to the loss of a fifth or more of all the blood-corpuscles in the body within less than forty-eight hours. At present we have no means of recognizing in practice whether a given attack is going to cease spontaneously or not. Rather complicated stains and considerable time spent in an examination may enable an expert to make a very accurate prediction, but such methods may lead us astray by revealing very few parasites in a specimen, suggesting the probability of a mild case, when the very next paroxysm may be very severe. So, about twelve hours after the first chill in the relapse of a malaria acquired at Santiago, in an examination lasting half an hour, I found very few organisms. Dried preparations, stained and examined carefully, later on confirmed the examination, but the next day it was easy to find parasites belonging to three distinct generations, tertian, in large numbers.

When we remember that we have a drug that will cut the attack short with almost absolute certainty, and usually with little risk to the patient, it is easy to see how the problem differs from that of treating rheumatism with salicylates, or any other acute disease by specific means, not excepting diphtheria and its antitoxin.

Choice of Preparations.—In this paper I use the term quinin in a wide sense, including all the more useful of the cinchona alkaloids. At present the quinin salts and the promising euchinin are the only ones necessary to choose from.

Dose.—One of the most unsettled problems among practitioners in general is the dose of quinin, although among those with special experience the diversity of view is not so marked. In the late war doses of quinin as large as 50 to 100 grains of the sulphate per day were frequently given in the West Indies, and even in army hospitals in this country 48 to 60 grains per day were often used. Yet the most experienced men in Africa, Italy and the East Indies rarely find it necessary to give more than 30 grains per day and usually get good results from half that dose, while 45 grains per day is the maximum of many of the most judicious physicians. In the northern half of the United States the milder intermittents are often checked by a single dose of 5 grains, more certainly with 10. In general, however, 15 grains may be looked on as an average dose in such cases. In the severe and more obstinate estivoautumnal forms 20 grains a day may be taken as the normal dose.

One Dose or Divided.—There is another point on which views differ. A consideration of the processes involved seems to prove to me that the remedy will be most effective if given in one dose. The problem is to check the growth, or to kill, if possible, the parasites. This can most reasonably be expected by bringing the greatest possible quantity of the remedy, consistent with the safety of the host, in contact with the parasites. This is the method most frequently followed by success in the case of many intestinal parasites, and the conditions in malaria would seem to be not dissimilar. In practice it is not uncommon to find patients unaffected by doses of two grains every hour, who are at once relieved of further paroxysms by a single dose of only one-half or one-third the quantity formerly taken in a day. As an intermediate method we may consider that of giving moderate doses, say 5 grains three or four times a day. This method is often successful, much oftener, I believe, than that of giving two grains every hour. Its success, I believe, depends on the fact that the single dose was large enough in the case in question, if given at the right time, to produce a distinct effect on the parasites, and there are some cases in which, owing to the con-

dition of the patient, and his temporary or usual reaction to quinin, this method may be followed with advantage. In ordinary cases, however, where the paroxysms are distinct, the best method is that of giving the whole amount at once, or within a time not longer than two hours.

At What Time Should the Dose be Given?—From the time of Sydenham some of the most eminent physicians have given the drug in the decline of the paroxysms. This is the method recommended within recent times by such men as Baccelli, A. Plehn, Maclean, Manson, Ziemann, and many East Indian physicians. On the other hand there is a tendency at present to give quinin with reference to the expected paroxysm. This practice is perhaps largely due to the influence of Golgi, whose authority in matters malarial is deservedly great. The subject has always been more or less affected by speculation. Sydenham thought that if he gave "the bark just before the fit," he would "check the method by which nature would get rid of the febrile matter." The explanation advanced in favor of the other plan is that by giving the drug several hours before the paroxysm, the parasites just set free would be taken in their most susceptible stage.

The matter seems one that should be settled rather by experiment than by a priori reasoning. This was indeed the method followed by Golgi,¹ but it has always seemed to me that his observations do not bear the conclusions he and others drew from them. He showed that quinin given in the stage of segmentation prevents the growth of the young forms. He claimed that the action of the drug was less certain when the parasites were in the endoglobular stage, and asserted that although given in this stage the paroxysms were often checked, especially in tertian fever, yet there was greater risk of relapses than when the drug was given before the paroxysm. Golgi's observations were made for the most part on quartan fevers, of mild type. In tertian fevers he found that the paroxysms could be checked by giving the drug in the apyrexia, when the parasites were in the endoglobular stage, and he had to suppose that in tertian fever the red blood-corpuscles offer less difficulty to the entrance of quinin than they do in quartans, a supposition that seems rather gratuitous. Golgi, of course, did not aim at aborting the oncoming paroxysm by giving the remedy several hours before. He thought that by so doing he had the greatest certainty of preventing the next paroxysm. Baccelli² made some careful experiments with reference to the most favorable time for giving quinin, using intravenous injections. He found that quinin given at the beginning of the febrile attack, or three hours earlier, did not abort the paroxysm, and that given in the acme, the crisis was not hastened. If given at the decline or end of the paroxysm, it either prevented the next one or rendered it milder. He therefore recommended the decline as the best time for giving the drug, especially in subcontinued fevers.

I had been making observations for two years on the effect of quinin given at different times, when Baccelli's article appeared, and immediately began to give the remedy in the decline. The results were more certain and more satisfactory in every respect than by other methods, so that I have followed it with rare exceptions. In some cases I have given the remedy from three to five hours before the paroxysm. I have also had opportunities for seeing cases treated in the latter way, or at various other times, by colleagues. A number of medical acquaintances have taken up the Sydenham plan, and among these Dr. F. H. Williams³ has published some in-

structive histories, with charts. The real and apparent contradictions between the Sydenham and Golgi methods are well worthy of careful control-observations in which the conditions of the parasites and the temperature and other symptoms, and the administration, absorption and excretion of quinin go hand in hand. As an example the following may be given:

H. G. acquired malaria in Santiago in July, 1898. He was admitted to my clinic, December 31, having had a chill about 11 a. m. The last chill prior to this was two weeks before. For several days before admission there was pain in the back. Just after the chill the blood showed a few half-grown endoglobular bodies, and very few larger ones. In dried and stained preparations the latter showed numerous small vacuoles and in general stained badly. At 8 p. m. there were only a few endoglobular forms, larger than at noon. Many of these were in many small round masses, connected by narrow filaments, suggesting degeneration. No medicine had been taken and none was given.

January 1, at 9:30 a. m., there were many parasites in the blood, one or two in every field—oil-immersion. These were about equally divided between half-grown and almost mature bodies, indicating a double (tertian) infection with paroxysm imminent. The larger forms disappeared without showing segmenting bodies, between this and 12 m., and the temperature rose—between 12 and 1:30; 99.5 degrees and a chill at the latter—reaching 104.5 degrees at 3 p. m. The chill lasted an hour. The temperature began to fall at 4 p. m.: at 4:45 sweating began and continued until 6.

At noon the smallest ameboid forms began to appear in the red corpuscles, and by 4 p. m. it was clear that the endoglobular forms seen before really belonged to two distinct sets, one then about half grown, the other almost mature. The latter were too numerous as well as too far from the stage of segmentation to permit the conclusion that they were belated bodies from the paroxysm in progress, so that a triple tertian was diagnosed. During the chill and fever the patient was given codein in spirit of mildereris, and lemonade.

At 6:45 p. m. the temperature having fallen to 101.6, 5 grains of quinin hydrochlorate were given in solution, and repeated at 7:15 and 7:45. By the time the last was taken the ears were ringing.

The urine was collected every half hour from 6:45 p. m. and quinin tests (bromin) made in the ethereal extract by my assistant, Mr. S. R. Boyce, Ph. C., who devoted much skill and care to the work. Fluorescence appeared half an hour after the first dose, the blue color half an hour after that, and the thalleoquin reaction was most intense from that time up to 8:45 p. m.

At 9 p. m. the temperature rose without a chill to 103.8 degrees and fell from 12 midnight to 9 a. m., reaching 101 degrees. It again rose, reaching 103.8 degrees at 11:30 a. m. At 11:45 there was a chill, lasting 45 minutes. Sweating began at 4.

In the morning the blood showed only large endoglobular bodies, with one flagellate. At 12 noon a few unpigmented ameboid bodies appeared in the red blood-corpuscles. There was, therefore, only one generation left.

At 1 and 1:30 p. m. five grains of quinin were given in solution as before; at 1:45 the patient vomited. As the temperature record shows, the medicine was given too early. The decline of the fever was not positively in progress. Tests of the urine at 1:45 and 2:30 made it probable that some quinin was absorbed, since the reaction became more intense after the second dose. At 7,

7:30 and 8 p. m. the medicine was again taken and the urine examined as before. All traces of the former doses had disappeared. In half an hour after the first dose the reaction was present; marked in an hour, and for two hours after that. It was weak after twelve hours, but visible up to nineteen hours. The parasites were therefore brought in contact with the drug not less than about eight hours after segmentation. They failed to develop, and the patient remained free from paroxysms after 30 grains of quinin retained and 10 partly absorbed, no more being given for seven days.

The case illustrates the rapid absorption of quinin. We did not have an opportunity of making observations on the time of absorption when given before the paroxysm, but two observations on prophylactic doses in the same patient, seven and fourteen days after the last chill, showed slower absorption and more persistent final reactions.

It has been thought by some that Professor Koch has come out as an advocate of the Golgi method in African fevers, which are etiologically the same as our summer and autumn malaria. The matter is only apparent. Koch claimed that in these fevers the quinin must be given at the time when the parasites are in the large stage. In the cases whose charts are published this corresponds to the later part of the decline, and from six to eight hours before the rise of temperature in the next paroxysm.

There are some practical facts bearing on this question that are not introduced into the discussion as much as they deserve. It is often forgotten that the chill does not always occupy the same place in the temperature curve, but comes anywhere from the beginning to the end of the rise, or even later. Since the chill is often taken as the guide to the time of the paroxysm, the difference may render illusory the time limit of three to five hours given by Golgi. Many of Golgi's followers have lengthened the time to eight hours, thus going back to a period at which Golgi claimed the results are likely to be poor. Directions based on the chill are especially faulty in the severer fevers, because there may be no chill.

The real condition of the development of the parasites can only be discovered by the microscope, but such observations may take a great deal of time, and, except in the case of an expert with plenty of time, may be misleading. Even in such a case, the ripening of the parasites in successive individuals extends over so long a time as to throw difficulty about a strict following of Golgi's rule. In tropical cases, such as occur in many parts of the United States, the generations are often very much confused, and the disease is rarely so simple and typical as Koch assumed from his first observations in Africa. Prolonged examinations of the blood are essential for those who wish to study the therapeutics of malaria, but in practice we can hardly ask more than that the microscopic diagnosis be made, with as close an approximation to the stage of development, the forms of the parasites and the condition of the blood as the exigencies permit.

The Golgi method involves two risks which, though usually trifling, can be avoided by the Sydenham plan. The first is that a patient seen in a primary paroxysm may anticipate a tertian fever, and, while waiting for the five hours' time, be taken with the paroxysm of a double infection. Had he taken his medicine in the beginning at least one, perhaps two, fits might have been prevented.

In the second place, the last dose ordered five hours

before the expected paroxysm is often useless, since the parasites are gone. This can be discovered by the microscope. As Williams has well remarked, the method advocated saves quinin.

That absorption from the stomach is less certain and prompt in the time just before the paroxysm, and in the onset, is widely believed, and I think it is true. It is also widely believed that the symptoms of cinchonism are more marked if the effects of the drug appear in the early part of the fever. I think this is also true, though the point is difficult to demonstrate.

A careful consideration of all the data led me to the following conclusions:

In a tertian or quartan intermittent, or any combination or duplication of these, quinin should be given in the decline of the paroxysm if possible; or not later than at the end of the apyrexia. The difference depends on the time the patient is seen or the diagnosis made. The dose should be given at one time, or in parts at short intervals, in such a form that absorption may be confidently expected. I have found it very satisfactory to give the full dose in the form of the hydrochlorate, in capsules, followed by 15 drops of dilute hydrochloric acid. In patients who have been unable to retain other preparations, I have been successful by giving three five-grain capsules half an hour apart, with a small dose of dilute hydrochloric acid after each, with directions to repeat in half an hour if any dose was vomited.

In an ordinary single infection, when the drug is given in the decline, there will not be another paroxysm. In double infections there may be another paroxysm, often milder than the preceding. If there is a rise of temperature of more than a degree, or if the blood shows parasites, a second dose should be given, also in the decline, and if necessary even a third or more. Few cases require more than three. After the temperature falls no quinin need be given for the specific effect, and if it be used as a tonic not more than two grains three times a day should be taken. Other remedies may be used as indicated, the indication for iron being controlled if possible by an expert examination of the blood besides that of the patient in general.

The evidence of the decline of the temperature is best based on the thermometer, used every hour after the chill, but in case the characteristic profuse sweating occurs, it is a sufficiently accurate guide, and the great changes in the body following sweating probably assist in the absorption of the drug.

In the remittent or estivoautumnal fevers, the intervals are not so clearly defined as in the tertian and quartan infections. If they are, the decline of the fever can be recognized by careful use of the thermometer, or by the improvement in the subjective sensations. Very often in these cases the parasites become mature at times varying widely, so that not only is the curve difficult to interpret but the parasites are not equally influenced by the remedy. Very often, too, the symptoms are so alarming or the number of germs found in the blood so large that immediate treatment seems necessary. In such cases the quinin should be given in doses of five to ten grains, according to the severity of the case, at intervals of four to six hours, until a marked remission occurs, and then the daily intermittent dose be given until the fever disappears, or, better, until the condition of the blood shows that quinin is not indicated.

Relapses.—The treatment of the relapses of malaria is a matter of importance. Except in mild cases, a return is to be expected and guarded against. This is a fact long known but apparently often forgotten. Pa-

tients are often aggrieved to find that the "dead-sure" prescriptions of their doctors—usually polpharmaceutic marvels—have not stopped their chills for all time, as they were led to expect.

The relapse often takes place on the seventh day or some multiple of it, either fourteen or twenty-one days, or later. In severe infections, it often comes earlier and in the relapse of Cuban fevers the fifth day or the fourth after the last fit may see the return of a paroxysm. The cause of the relapse is not difficult to explain. The parasites are scotched, not killed, and only reach sulciant numbers to cause another paroxysm after a lapse of time. They can be found, by careful search, before the day of the paroxysm, and they sometimes cause slight elevation of the temperature in the days preceding the relapse. Golgi's claim that relapses are less frequent in cases treated according to his plan than if the drug is given in the decline must have many exceptions. It is therefore advisable to give quinin at intervals after the paroxysms have stopped, even if his method is used. The interval in ordinary tertians should be seven days, in more severe cases five days. In this way we not only lessen the danger of relapses, but we also cause a discontinuous or intermittent sterilization of the blood and hasten the complete recovery of the patient.

Prophylaxis.—The study of relapses throws light on the prophylactic treatment of malaria. Up to the present time no unanimity has been reached regarding the prophylactic use of quinin. We still find that daily doses, both large and small, are in use, usually without securing the desired end, and rarely failing to be more or less deleterious to the stomach. It appears, however, that the discontinuous method is gaining ground. A. Plehn modified the method of F. Plehn by giving the medication every five days instead of every week, and in severe malarial localities this is certainly advisable, on account of the shorter time necessary for the development of an attack in such places. According to his latest statement, F. Plehn prefers to give from one-half to one gram of quinin every week for five or six weeks, then to gradually lessen the dose and lengthen the interval, and to use similar doses after unusual exposure or other probable assisting causes as necessary. The fact that this has been recommended by Professor Koch¹ will no doubt go far toward extending the use of Plehn's method.

Malarial Hemoglobinuria.—One of the most important subjects at present before the profession is that including the so-called malarial hemoglobinurias and quinin hemoglobinurias. These questions are important from the practical standpoint in many parts of the world, though it is probable that the problem is one that really varies in its essential nature in different parts. As examples of the conditions in the eastern hemisphere, we can take the contradictory statements of Koch, the Plehns, Doering and others on the theory and practice of the disease.

Koch was inclined to think, after his first investigations, that the so-called black-water fever of Africa, called by many malarial hemoglobinuria, is a quinin poisoning due to an idiosyncrasy.

Doering² has a report in the same volume in which Koch published his report, in which he considers this subject in detail. His experience with malaria has evidently been more extensive than Professor Koch's. Whether he is as trustworthy I do not know. Doering calls blackwater fever "malarial hemoglobinuria." He declares the immediate cause to be quinin in combination with active malarial parasites. In some cases quinin causes the hemoglobinuria in persons whose blood has

been altered by the tropical life, but he has also seen simple malaria, untreated by quinin, pass into black-water fever. Doering avoids the use of quinin during the existence of black-water fever, but looks on the use of Plehn's method of prophylaxis as the most certain method for its prevention. While Plehn and Doering avoid the use of quinin, many other African physicians, German and English, use it, seeing no bad effects, but obtaining good ones.

It seems hardly satisfactory to ascribe the results of quinin, reported by so many physicians in different parts of the world, to an idiosyncrasy. The geographical distribution of the cases seems to oppose such a view. That quinin may cause breaking down of red blood-corpuscles in those whose blood is already impoverished by malaria, with or without other depressing factors, may easily be admitted. Even if we admit this, however, the question why this occurs in East Africa and not in Algiers, in Arkansas and not in Italy, is not answered. The germs appear to be the same. A further consideration of this would lead us too far from the present subject.

Hemoglobinuria (and Hematuria) and Malaria in the U. S.—From the titles in medical journals one might suppose malarial hemoglobinuria or hematuria very common in this country. Yet a careful study of the literature gives very little valid evidence that such is the case. Proof of malaria, the finding of the characteristic parasites in the blood, is rarely forthcoming in the works of those who claim the disease is malarial at the time of the hematuria. It is generally conceded that microscopic evidence must be submitted before a discussion of even so simple a process as intermittent malarial fever can be profitably carried on. How much more necessary then is such evidence in a condition like hemoglobinuria. In fact, in the current reports even the ordinary clinical features are not always as clearly presented as one might wish, and in discussions of the pathology the more recent additions to our knowledge are often conspicuous by their absence. One finds the work of Béranger Péraud quoted more frequently than Bastianelli, while the important observations of the Plehns, Doering and other recent writers seem almost wholly neglected. It is a suggestive fact that, while in Africa the malarial black-water fever is a hemoglobinuria, in the United States the condition is almost invariably hematuric. In some parts of the country all hematurias are called malarial, just as all neuralgias, all fevers, and many other symptoms are so called. Yet in the South, besides the ordinary hematurias, there is the possibility of numerous cases due to other parasites, neglected as completely in diagnosis as those of Laveran. In some of these districts the patients with hematuria from any cause may easily have a history of past or present malarial infection. This may have an important bearing on the treatment, but does not necessarily entitle the disease the predicate malarial. The profitable inquiry as to the possible relation of past attacks of malaria to the hemoglobinuria, and the careful study of the blood, have been even more neglected than the search for active infection.

The positive study of the so-called malarial hematurias has just begun, and, as was to be expected, statements differ, just as we may readily understand the facts may differ in various cases.

Pending a conclusion, the first thing to do after taking charge of a case of suspected malarial hematuria is to ascertain the possibility of malarial origin or influence, by the history and by exclusion of other possible causes. This is obviously not an easy thing to do. Even outside of malarial regions we find numerous cases of hematuria and hemoglobinuria, the causes of which are difficult,

or sometimes even impossible, to discover within a time useful for etiologic treatment.

More important still, and fortunately easier, is it to discover the presence or absence of malaria at the time. Here the blood examination is all-important, and it cannot be denied, impossible as the thing seems, that ability to make the necessary examinations should be expected of those who practice in malarial localities. I say it seems impossible because it is a fact that other similar knowledge, much longer available, is not as generally applied as it should be. One has only to mention examinations of the urine and sputum.

Taking for granted that the precise conditions have been made out by a complete examination, the question remains: What is to be done? I must limit myself to the use of quinin.

If there is no evidence of active malaria, no matter how much there may have been, quinin is not to be used. This truth is still far from being generally accepted. There is still a belief, difficult to eradicate, that quinin has some mysterious properties in all things called malarial. Yet so far as we know, quinin cannot stop the breaking down of red blood-corpuscles, nor the exit of red cells through the kidneys. True it may act as a tonic, in small doses, but there are other drugs, if necessary, just as useful for that purpose.

It would perhaps be safe to lay down the rule that, in a hematuria the malarial nature of which is not known but only a matter of conjecture, quinin in more than small doses will probably do more harm than good.

If there is a malarial infection with active parasites shall quinin be used? Around this question discussion has been more than warm. Both theory and practice have been called in to solve the problem, but the answer seems more remote than ever. A number of facts should be borne in mind. Quinin is often more or less irritating to the urinary tract. It may therefore, especially in large doses, aggravate a local disease of the kidney—malarial in origin—and cause or increase hematuria. In chronic malarias, with active parasites still present, there may be a large number of young and vulnerable red blood-corpuscles. They may be broken down by the circulating quinin and hemoglobinemia and hemoglobinuria result. This is possible, but whether it occurs, or will occur, in any given case has not been proved and can hardly be positively predicted. In the cases in which quinin is said to have done harm the material element has not been demonstrated. On the other hand some of the most capable Southern clinicians deny such an occurrence, and Woldert, who appears to be the only one who has had experience with the microscopic diagnosis in the South, agrees with them. Curiously enough, many who fear to use quinin in such cases use drugs apparently as dangerous, especially turpentin, and claim to get good results.

Even if the quinin can cause or increase hemoglobinuria, it is not logical to give it up without further consideration. Without the quinin a destruction of blood is likely to occur that is often greater than any hitherto attributed to quinin. The development of each parasite breaks up a red blood-corpuscle, if not completely, at least so much so that it must speedily be entirely broken up in the body. This development of parasites may continue a number of days, unless checked by quinin. In some cases it has been noticed by African observers that the hemoglobinuria seems to coincide with the disappearance of the parasites, but this cannot safely be assumed except by the aid of the microscope. Viewed in this way quinin in malarial hematuria may be compared with an operation for the cure of a dangerous disease—

the anesthesia may be fatal. Or, just as quinin may cause so much breaking down of blood that the kidneys cannot functionate properly, so may the anesthetic seriously affect the heart or kidneys, or give rise to pneumonia.

To sum up, the question of quinin in malarial hemoglobinuria must be settled by careful clinical observation and experiment, and statements regarding it must be given credit in proportion to the accuracy with which the observations are made. In the meantime, quinin can be used cautiously, if parasites are present, giving the drug in a form most likely to be absorbed, in doses within the limit of ordinary safety, and stopping its administration as early as the microscope shows this to be proper. A temporary increase in the severity of the symptoms should not alarm the physician. It is not necessarily due to the drug. At the same time that the specific is being given, other methods of treatment must not be forgotten. The quinin is given to check the malaria, not for any particular symptom or complication.

BIBLIOGRAPHY.

1. Golgi: Deutsche Med. Woch., 1892, Nos. 29-32.
2. Bacelli: Berliner Klin. Woch., 1890, p. 486.
3. Williams, F. H.: Boston Med. and Surg. Journal, March 9, 1893.
4. Koch: Verhandlungen der deutschen Kolonial-Gesellschaft, 1897-8, Heft 7.
5. Doering: Arbeiten aus dem Kais. Gesundheitsamte, Bd. xiv.

QUININ IN MALARIA.

THE UNSATISFACTORY RESULTS OF ITS HYPODERMIC ADMINISTRATION.*

BY G. A. FACKLER, M.D.
CINCINNATI.

The application of medical knowledge is most gratifying when it results in accuracy of diagnosis and treatment. In the consideration of malaria we certainly have an opportunity to indulge in such gratification. The clinical picture, supplemented by manifestations on the part of the blood as presented by microscopic examination, furnishes the data for accurate diagnosis. The efficacy of quinin as a curative agent in the treatment of malaria has placed it among the small list of specific remedies. The comparative ease with which we can now diagnose a case of malaria and the confidence with which we can predict its defeat by quinin leaves only the consideration of the best and most reliable method of its administration.

Prior to the summer of 1898 I had occasionally resorted to the hypodermic administration of quinin in the treatment of malaria, but lack of brilliant results failed to stimulate me to the general adoption of this plan. The encouraging reports casually offered by some army surgeons who had resorted to the subcutaneous use of the drug in malarial patients of the Southern camps induced me to employ it in a series of cases which came under observation in the Cincinnati Hospital in the summer and fall of last year. Herewith, then, are offered the clinical facts elicited by a review of twenty cases, confirming the cursory previous observations made as to the unreliability of quinin administered hypodermically in malaria. Refraining from a complete report of these cases such as would render them proper for publication, I submit an abridged statement of the salient features thereof, adapted to the time limit and your patience. The cases may readily be assigned to one of three classes: Three to the first class, successfully treated by hypodermic injection of quinin; 7 to the

second class, successfully treated by quinin administered by the mouth; 10 to the third class, treated ineffectually by quinin hypodermically, but effectually by substitution of quinin by the mouth.

Classes 1 and 2 may be offered in sums total, Class 3 will be treated with sufficient detail to bring out the points that exemplify the object of this report in the most striking manner.

CLASS I.

Cases 1 and 2 were patients presenting all symptoms of double tertian fever, Case 3 a patient with a history of irregular chills and fever for three weeks, and blood examination disclosing numerous crescents and ovoids—a total picture of an estivoautumnal type of malarial infection. In these three cases quinin bisulphate, gr. xv administered hypodermically twice daily, controlled the paroxysms within thirty-six hours, and, continued in gradually decreasing doses for a week, prevented a return.

CLASS II.

Cases 4 to 10, inclusive, were readily diagnosed as double tertian. In all these cases the daily administration of gr. xx to xxx of quinin bisulphate, usually in morning and evening doses, controlled the paroxysms within twenty-four to forty-eight hours. In none did the daily temperature attain a height above 100 after twenty-four hours of quinin treatment and in none did the temperature rise above normal after seventy-two hours.

CLASS III.

Case 11.—James Scott, admitted Aug. 19, 1898, had paroxysms of chills and fever daily since August 15.

Aug. 19. At 1:50 p.m., temp. 105. Intracorporeal pigmented and non-pigmented plasmodia found in large numbers.

Aug. 20. At 9 a.m., temp. 98.4; quinin, gr. x hypodermically; at 12 m., chill for twenty minutes; at 1 p.m., temp. 105.6.

Aug. 21. At 6 a.m., temp. 98.8; quinin bisulph., gr. x, at 9 a.m. hypodermically; at 12 m., temp. 105.8, preceded by chill at 11:20 a.m., quinin bisulph., gr. x, at 9 p.m. hypodermically.

Aug. 22. At 6 a.m., temp. 99; quinin bisulph., gr. x, at 9 a.m. hypodermically; 12 m., temp. 104.6, after chill; quinin bisulph., gr. x hypodermically at 9 p.m.

Aug. 23. At 6 a.m., temp. 99; quinin bisulph., by the mouth, 9 a.m.; 12m., temp. 102.2; quinin bisulph. by mouth at 6 p.m.

Aug. 24. At 9 a.m. and 6 p.m., quinin bisulph. by mouth, gr. x; temp. not over 99, normal throughout succeeding three days during which this treatment continued.

Case 12.—Harry Carr, admitted August 19, had been ill for six weeks, with irregular attacks of fever daily. His daily lowest temperature was about 12 m. varying from 98.2 to 98.8, rising with occasional chill.

Aug. 19. Temp. rose to 103.4 at 6 p.m.

Aug. 20. Temp. rose to 101.2 at 6 p.m.; quinin bisulph., gr. x, hypodermically at 8 p.m.

Aug. 21. Temp. 102 at 5 p.m.; quinin bisulph., gr. x, hypodermically at 5 p.m.

Aug. 22. Temp. 102.6 at 5 p.m.

Aug. 23. Temp. 102.6 at 5 p.m.

At 6 p.m., Aug. 23, and at 9 a.m. and 6 p.m., Aug. 24, quinin bisulph. was administered by mouth. As a result, the temperature never rose above 99. Treatment continued for three days.

Case 13.—George Wilson, admitted Aug. 20, had quotidian chill and fever during the preceding two weeks.

Aug. 20. Intracorporeal pigmented and a few hyaline plasmodia. Lowest daily temperature, between 6 and 9 a.m., from 98 to 98.6.

Aug. 21. Highest point reached was 102.2, at 6 p.m.

Aug. 22. Quinin bisulph., gr. x, hypodermically at 10 a.m.; temp. rose to 104.6 at 6 p.m.

Aug. 23. Quinin bisulph., gr. xv, hypodermically at 12m.; temp. rose to 104.6 at 6 p.m.

Aug. 24. Quinin bisulph., gr. xv, hypodermically at 12m.; temp. rose to 104.2 at 5 p.m.

Aug. 25. Quinin bisulph., gr. xv, by mouth at 12 m.; temp. rose to 101 at 3 p.m.

Thereafter quinin was administered at 6 a.m. and 6 p.m., in doses of gr. xv, and temperature normal.

Case 14.—Armstrong, admitted Aug. 29, had been ill for six weeks prior to admission. During the first three weeks he had chills and fever on alternate days, and thereafter quotidian paroxysms.

Aug. 29. Found intracorporeal pigmented hematozoa occupying nearly the whole of the corpuscle. Lowest daily temperature at about 6 a.m., varying from 97.6 to 98.2. Highest point reached was 101, at 4 p.m.

* Presented to the Section on Practice of Medicine, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

Aug. 30. Quinin bisulph., gr. x, hypodermically at 10:30 a.m.; temp. 104.4 at 12 m.

Aug. 31. Quinin bisulph., gr. x, hypodermically at 9 a.m.; temp. 105 at 12 m.

Sept. 1. Quinin bisulph., gr. x, hypodermically at 9 a.m.; temp. 98.4 at 12 m.

Sept. 2. Quinin bisulph., gr. x, hypodermically at 9 a.m.; temp. 105 at 3 p.m., and repeated the dose at 9 p.m.

Sept. 3. Quinin bisulph., gr. x, hypodermically at 9 a.m.; temp. 103 at 9 p.m. Repeated the dose at 9 p.m., and thereafter at 9 a.m. and 9 p.m.; quinin bisulph., gr. xv, by mouth, brought and held temperature at normal.

Case 15.—Chas. Stahl was admitted Sept. 16, with history of irregular attacks of chills and fever during preceding two weeks. Blood examinations were negative until Sept. 19, p.m., when large flagellate plasmodia were found. From Sept. 16 to Sept. 20, temp. varied from 98 to highest between 6 and 9 p.m.—from 104 to 105.4.

Sept. 20. At 9 a.m. and 9 p.m., quinin bisulph., gr. xv, hypodermically; temp. 9 p.m. 104.

Sept. 21. At 9 a.m. and 9 p.m., quinin bisulph., gr. xv, hypodermically; temp. 9 p.m. 104.

Sept. 22. At 9 a.m. and 9 p.m., quinin bisulph., gr. xv, by mouth; temp. 99.8 at 6 p.m.

Sept. 23. Treatment continued with temperature normal.

Case 16.—Albert Miers, admitted Sept. 16, had onset of present illness the day before admission with chill and fever; lowest daily temperature between 3 and 9 a.m., varying from 98 to 99. Highest temperature Sept. 17, at 12 p.m., 103.8; Sept. 18, at 12 p.m., 103.6; Sept. 19, at 12 p.m., 102.2. Blood examination showed intracorporeal bodies.

Sept. 20. Quinin bisulph., gr. x, hypodermically, at 9 a.m. and 6 p.m.; temp. 102 at 9 p.m.

Sept. 21. Quinin bisulph., gr. x, hypodermically, at 9 a.m. and 6 p.m.; temp. 102.2, 9 p.m.

Thereafter quinin by mouth, gr. x, twice daily, with total subsidence of symptoms; no elevation of temperature over 99.2.

Case 17.—H. Herberg, admitted Sept. 19, with history of chills and fever daily for several weeks. Sept. 20, blood examination showed intracorporeal pigmented bodies; lowest daily temperature between 3 and 6 a.m. varying from 97.4 to 98.

Sept. 20. Highest point attained 105, at 12 m.

Sept. 21. Quinin bisulph., gr. xv, at 9 a.m.; temp. to 104.4 at 1 p.m.

Sept. 22. Quinin bisulph., gr. xv, at 9 a.m. and 6 p.m.; temp. to 105.4 at 12 m.

Sept. 23. Quinin bisulph., gr. xv, at 9 a.m.; temp. to 104 at 12 m.

Sept. 23. At 6 p.m. and Sept. 24 at 9 a.m., quinin bisulph., gr. xv, by mouth; temp. to 100.2 at 9 p.m.

The same treatment continued resulted in elevation of temperature Sept. 25, to 100 at 6 p.m.; thereafter normal.

Case 18.—Jacob Jauch, admitted Sept. 19, with history of chills and fever for two days preceding admission. Sept. 19, small hyaline intracorporeal bodies found; lowest daily temperature at about 6 a.m., varying from 100 to 102.

Sept. 19. Highest temperature at 3 p.m., 106.

Sept. 20. Highest temperature at 9 p.m., 106. Quinin bisulph., gr. xv, hypodermically at 9 p.m.

Sept. 21, 22, 23. Quinin bisulph., gr. xv, hypodermically, twice daily; temp. rising with chill each day between 3 and 6 p.m., to 104.8 to 105.5.

Sept. 24. Resorted to administration of same doses of quinin by mouth, morning and evening, and continued this method with following result.

Highest temp. on Sept. 24, 103; Sept. 25, 101; Sept. 26, 99; thereafter normal.

Case 19.—Schwenk, admitted Sept. 21, had chills and fever daily for about two weeks. On day of admission numerous pigmented and nonpigmented intracorporeal bodies were found; lowest daily temperature at 3 to 6 a.m., from 97.8 to 98.2.

Sept. 21. Temp. at 3 p.m., 105; quinin, gr. xv, hypodermically, at 6 p.m.

Sept. 22. Quinin, gr. xv, hypodermically at 9 a.m. and 6 p.m.; temp. at 3 p.m., 104.6.

Sept. 23. Quinin, gr. xv, hypodermically at 9 a.m. and 6 p.m.; temp. at 3 p.m., 104.

Sept. 24. Quinin, gr. xv, hypodermically at 9 a.m.; temp. at 3 p.m. 102.6; quinin by mouth at 6 p.m., and thereafter at 9 a.m. and 6 p.m., with abeyance of all symptoms on Sept. 25.

Case 20.—Seiler, admitted Sept. 21, onset of illness indefinite.

Sept. 22. Numerous crescents and ovoids and some hyaline intracorporeal bodies were found; ostivoautumnal; lowest daily temperature at about 6 a.m., about 99.

Sept. 21. Temp. to 103 at 12 p.m.

Despite hypodermic administration of quinin bisulph., gr. xv, at 9 a.m. and 6 p.m. on Sept. 22, 23, 24, temp. rose to 103 to 104.2 between 9 and 12 p.m.

Sept. 25. Order was changed to quinin by mouth, in same dose and at same interval. Temp. highest Sept. 25 at 9 p.m., 99.4, and thereafter normal.

A general resumé of the 20 cases furnishes the following data: In 3 cases quinin hypodermically was successful; in 10 cases quinin was not successful; in 7 cases quinin by the mouth was successful; in 10 cases quinin by the mouth was successful after hypodermic administration had failed—a total of 17 cases in which quinin by mouth was successful as a curative measure in the treatment of malaria. In only 3 out of 13 cases, in which the remedy was introduced subcutaneously was an abeyance of symptoms secured. This experience was certainly at variance with that reported casually by some of our army surgeons.

It is but natural that we should seek for a rational explanation of this fiasco of hypodermic medication. We were assured of the correctness of the diagnoses, for no cases were designated as malarial unless the blood examinations furnished evidence which would warrant the diagnosis. All compounds of quinin, or better said, all salts of the alkaloid, have a toxic effect upon the malarial organism, and hence a curative action when administered in malarial diseases. The failure cannot be attributed to the compound employed, per se. The beneficial effect of the same preparation from the same stock when given by the mouth dispelled all doubt as to the therapeutic power of that compound. The procedure adopted for injection and the site selected were in perfect accord with the plan followed by most clinicians and observers. Where then was the defect in the inherent curative value of the method? The therapeutic failure of any remedy can not be ascribed to it essentially unless positive evidence of its absorption is furnished. It was a noticeable observation in all of our cases in which hypodermic medication was resorted to that after the majority of injections, the patients complained of pain in the region implicated by the injection. In some instances a distinct deep-seated hardness of tissue persisted for days after the treatment. It is a conjecture, in all probability bordering upon a certainty, that the solution, while dilute, as it must be with the use of the bisulphate, causes decided irritation of the tissues with which it comes in contact. The resultant localized disturbance of the circulatory conditions of the parts involved interferes with the absorptive power of the area and thus the remedy creates a bar to its own absorption.

If the observations thus submitted to you are indicative of the general experience among a larger number of cases with the same or other compounds of quinin we are forced to the assumption that the hypodermic use of quinin in malaria is never indicated except in cases in which stomach and bowels reject the dose ingested or injected. Unless my observations and deductions are erroneous, because of the uncertain action of the hypodermic injection of quinin, its administration by the mouth should be adopted in all cases.

DISCUSSION ON PAPERS OF DRs. DOCK AND FACKLER.

DR. CHARLES G. STOCKTON of Buffalo.—It seems to me the papers are most timely. For some time there has been growing confusion as to the exact place of quinin in the treatment of malaria. Now, in the matter of the time for the administration of quinin by the mouth, as suggested by Dr. Dock, I beg to take exception. There should be no rule of time for all individuals alike; it requires a study of each individual case to determine at what particular time the drug will affect the plasmodium. It depends too upon the primary digestion of individuals. In some instances the effect of the drug is ex-

erised in the course of an hour. Dolge's method of giving quinin previous to the paroxysm has not met with the expected success.

Cinchonism is found to be more intense if the quinin shows an effect, and yet the paroxysm still comes on. Quinin is said to be difficult of administration; all will not agree with the writer; it is easy of administration. I question the hypodermic use of quinin mentioned by Dr. Fackler; I have had experience during the past year, and I have come to the same conclusion that he has reached. In one case there was failure to relieve the paroxysm by hypodermic use of the drug, but the patient was relieved by the administration of the drug by the mouth. In that case, as well as in two others, there happened troublesome abscesses at the seats of injection, which was something I had never seen before. The local irritation probably accounted for the slow absorption of the quinin and the non-relief of the symptoms.

Dr. JUDSON DALAND of Philadelphia.—I wish to express my pleasure in hearing the paper and wish to speak in regard to two points. So far as the use of quinin is concerned, my experience has taught me that two things are to be considered—does malaria exist, and is quinin absorbed? Exclusive of hospitals, experience teaches that less than half the cases diagnosed as malarial are truly malarial. I am speaking of the cases that come in the ordinary course of practice, and not the cases that come under close observation in hospitals. I was especially pleased with the statements made in reference to the quantity of quinin to be employed, and also as to the time it should be administered. Personally, I am distinctly of the opinion that the bichlorid of quinin is the preferable salt, on account of its solubility and the fact that the solution is reliable. So far as the dose is concerned, I agree with the statements made by Dr. Dock. As to the time of giving the dose it seems to me that one particular point should be considered, i. e., the time in the life cycle of the plasmodium when it is most susceptible to the action of quinin. In other words, I am inclined to the opinion that the time for giving the quinin is soon after the violence of the paroxysm has passed over. This corresponds to the time that there is a maximum quantity of free amoeboid bodies in the blood. It is highly probable that when the malarial parasite enters the red blood-cells, quinin circulated in solution in the plasma could not exert its effects so completely as when the parasite is free in the blood. This particular time accords well with the observations of Dr. Stockton and I am sure that benefit is to be obtained from a preliminary course of calomel. After the paroxysm there is an increase in the absorption of the cinchona salt. It is interesting to know that non-absorption of quinin is a common occurrence.

While observing a case of ordinary tertian intermittent fever the hematocrit showed a loss of 10 per cent. of red blood-cells as the result of a single paroxysm of chill, fever and remission.

Hemoglobinuria is a rare occurrence. I recollect one specimen sent me from Louisiana. Hemoglobin alone was present, but upon examining the sediment, a few shells of red blood-corpuses could be seen. I also recollect another case in which the albuminuria increased during each succeeding paroxysm of the attack.

Dr. F. S. JOHNSON of Chicago.—The absorption of quinin is very uncertain. It is impossible to treat in any other way than by hypodermic injection or by inunction and be sure of your results. I will relate one case as an illustration of this. A man who had been very strong and who became extremely weak, was given quinin by the mouth without effect. Hypodermic injections of large doses of quinin were given, 40 to 60 grains by deep injection, and soon the malarial subsided and the patient got well. It was so weak at the time that it was impossible for him to rise from the bed. The hypodermic injection was made by deep puncture. Quinin given subcutaneously may cause sloughs; but if deep injections be given there will be no sloughs or abscesses if the solution used be sterile. In many cases quinin by the mouth has a different effect from that given in some other way. I saw a lady with well-pronounced intermittent fever, not of severe type. When she took quinin by the mouth she had delusions and hallucinations. She took it several days without effect, but when the fever began to respond to the quinin and the paroxysms became less severe she had dreams. She recognized them as dreams, but one morning she thought that all the dreams she had had were real. The quinin was stopped and the hallucinations subsided, but then the fever returned. I was in a quandry as to what treatment to give. The rectum was irritable, so I could not treat her in this way. She was a highly nervous, sensitive woman and I did not dare to propose the use of this method. I then gave her from 150 to 200 grains of quinin mixed with equal parts of oleic acid

and one-third the amount of cocoa butter, and this was rubbed in daily. The temperature then came down and did not return, nor did she have any more hallucinations. Quinin by the mouth has a different effect from that when given by the skin, by inunctions or hypodermatically. In another case of a returned soldier the quinin was given by inunction; 200 grains were given daily. He could not take the drug by the mouth or rectum, for it would not be absorbed. He was afraid to take the injections through fear of abscesses. He took it by the skin in this way, and his recovery was very prompt.

Dr. H. A. HARE of Philadelphia.—It seems to me the discussion of an important subject illustrates one of the most important points. The readers of the papers and the discussers, including myself, are men who may have less opportunity of studying the conditions now discussed than many of the gentlemen in the audience. I think it is rather unfortunate that physicians who have large opportunities credited to them have not done more toward the study of this subject.

What has been said regarding the absorption of the drug is true. I think one of the greatest questions connected with the therapeutics of quinin is regarding the time to give the drug; physicians are not sure of the alimentary canal, whether it is in condition to receive the drug. Quinin is precipitated by the juice of the stomach, and it is often found that it will not be absorbed at all. The use of mercurials and acids as resorted to in the South is exceedingly advantageous. I am inclined to believe that many physicians, not having been trained in the use of the microscope, often make a diagnosis of this disease when malaria is not present at all; I often come across cases illustrating this point. Again the diagnosis is often made of malarial fever, mild in character, which is not malaria at all. I would like to reiterate the fact that where the clinical course is like certain types of malarial fever a blood examination alone will prove the diagnosis to be correct.

It is unfair to Dr. Dock to refer to a certain method as the God's method. My experience has taught me that this is the proper time to give the quinin, and I have used it months with great success.

One other point regarding the hypodermic administration of the drug; this is most useless. I make a difference between the hypodermic method and the intravenous injections. There is great difficulty in absorption except in an acid medium. Quinin in the tissues is precipitated by the alkaline juices of the tissues. The quinin is precipitated and is immediately surrounded by an inflammatory exudate and is absorbed like cat-gut ligature. The drug should be injected into the veins; the medium in which it is carried is a normal saline solution, and it should be injected slowly. There is one important point that physicians should remember: that is that when quinin comes in direct contact with the heart it is terribly depressing; in animals it acts in the same way as in man. In a Newfoundland dog quinin was injected into the veins and the heart stopped at once. Do not forget the point that large doses are depressing to the heart, and may do the patient much damage.

Dr. DEXHAM of Cincinnati.—I wish to make a plea for the use of the hypodermic syringe. There is a salt of quinin which is sometimes overlooked, and that is a double salt put up by Merck. It is soluble in equal parts of water, and can be injected in small quantities between the gluteal fold. This injection will be absorbed, and cases will yield readily if it can be kept out of the muscles, and the inflammation kept down. All cases of malaria need not be treated by hypodermic injection, but only those cases where it is impossible to get quinin into the system in any other way. The great trouble seems to be in finding out when to give the quinin, and whether you have not something else to contend with. There is nothing nicer to give with quinin than calomel or a little acid; I prefer the calomel. The time of giving quinin is very important—that is, the time of getting quinin into the blood. If quinin is brought into the blood at one time it is one thing; but if at another time, it is another. If the malarial organism is surrounded by red blood-corpuses it is difficult to get the quinin to act upon the organism. If the quinin is introduced after segmentation, good effects will follow. In the tertian or quartan forms you do not get the full effects in the first day; it is best to catch the organisms as they are segmenting. By using the double salt of quinin you can place in the blood your drug at the time it is needed. The pain in using the hypodermic injection is very greatly reduced—almost to a minimum—by using the double salt of quinin, using two parts of water, and by keeping between the deep gluteal muscles.

Dr. J. C. WILSON of Philadelphia spoke of his experience in the German Hospital of Philadelphia with reference to outbreaks of malarial disease latent for weeks and months, in soldiers who had served in Cuba and Porto Rico. Many of these cases had stubbornly resisted quinin by the mouth, even

in large doses and administered under most varied circumstances, but yielded to moderate doses by the hypodermic method—in some instances the double salt of quinin and urea being used; sometimes the hydrochlorate of quinin.

With reference to the precipitation of the quinin salts in the alkaline fluid of the subcutaneous tissues our knowledge is somewhat limited. If precipitated it is certainly redissolved and absorbed, as shown by unquestioned therapeutic results. If precipitated under these circumstances, it is equally liable to be precipitated in the blood when introduced into the veins.

The cases of Panama and Chagres fever, at one time common in our coast-wise vessels, usually admitted to the hospital comatose, yielded promptly to large doses of quinin hypodermically and by the rectum.

Dr. GEORGE DOCK of Ann Arbor, Mich.—In order to make my paper short I left out all else except that which referred to quinin alone. Individuals differ, and a great deal is often required besides the giving of quinin. Regarding Dr. Fackler's paper, he has given strong evidence of what a number of observers have stated. In all cases of Dr. Fackler's, quinin was given at a time when it was less likely to do good. In regard to the hypodermic injection I only wish to state that the hypodermic method, in my opinion, is necessary in many cases. Deep injections are better than strong injections. If given in the muscles there is less pain and less tendency to the formation of abscesses. In any case the salt of quinin is apt to give pain and to cause abscess; these facts cannot be lightly turned aside.

Dr. G. A. FACKLER, in conclusion, wished to be positive that his statement in regard to the method of quinin injection was not misconstrued. In every case the deep injection was resorted to. In no case was an effort made to administer the remedy at a time coincident with a certain phase of the fever, and, yet, to some of our patients it was accidentally given in accordance with the suggestions of Dr. Dock. The question of the proper time for the exhibition of quinin in malaria is still *sub judice* and will probably never be settled to the satisfaction of all. The preceding discussion illustrates the various opinions ascertained as to the absorption of quinin. It is universally acknowledged that the condition of the digestive tract and of the circulatory organs play an important role in the absorption of the drug. The amount absorbed and the period required for this act must vary with the condition of the part into which it is introduced. Hence the utter folly of predicting the positive action of quinin within or at a specified period of time after its administration by mouth or injection. Much more rational is the introduction by either method into the body, of a dose, at stated intervals in the course of the day so as to insure the presence of a therapeutically effective amount of quinin in the circulating media at all times during that day. This plan was followed in all our cases and the results secured were certainly practical illustrations of its efficacy. I desire finally to call attention to the dearth of detailed reports of series of cases treated by the hypodermic injection of quinin and the uncertainty of the value of observations made upon one case by one individual. It would certainly be desirable that those who have made general assertions as to the efficacy of this method in the treatment of malaria should contribute specific reports of their cases to the literature upon the subject.

EXSTROPHY OF THE BLADDER.*

BY C. A. WHEATON, M.D.
ST. PAUL, MINN.

None of the congenital defects of man have elicited a greater diversity of opinion as to etiology, or more difficulty in correction than those affecting the genital extremity. Until a comparatively recent date the deformities of the genitalia of the male and female offspring were attributed to failure in the evolution of the structures which go to make up the distinctive characteristics of sex.

Embryology teaches us that the allantois is the fetal structure from which is derived the bladder and its suspensory ligament; that the urethra is primarily a groove opened below, which gradually advances from the urogenital sinus, and from the imperfect closure of this groove and the imperfect elaboration of this allantoic structure arise the defects which I have selected to here

discuss briefly. The latest, and perhaps the best, résumé of this subject is to be found in an article written by F. Tilden Brown¹. In this he leads us to understand that the etiologic factor in the production of hypospadias and epispadias is practically the same, that "both conditions are due to the rupture of the urethra in consequence of urinary retention by the absence or retarded formation of the glandular urethra."

"The usual theory of epispadias is similar to that which explains hypospadias as due to incomplete or faulty development of the parts affected. Thus, Thiersch regarded the malformation as due to a pelvic closure and division of the cloaca, which was faulty as regards time. Under normal circumstances pelvic closure occurs first, so that the corpora cavernosa, developing in connection with the rami of the pubes, are already agglutinated to the sexual buds before the sinus urogenitalis is pushed forward by the developing perineum. But if the cloacal division occurs before pelvic closure, the two halves of the corpora cavernosa are not united; the urogenital sinus is pushed forward between them, and they unite below instead of above it. This hypothesis evidently depends for its premise on the absence of the symphysis, and, unfortunately for it, the symphysis is not always absent. On the other hand, a number of facts undoubtedly favor the rupture hypothesis, and are quite inexplicable on any theory of defective development. Absence of imperviousness of the urethra leads to accumulation of urine in the bladder and dilatation of that organ; a rupture occurs at a time when the abdominal envelopes are not yet quite perfect, and this rupture may affect the entire urinary sac and the navel down, or only its lower part. So we get epispadias with extrophy of the bladder, or simple epispadias. Thus, Thiersch has proved, both in the dead and living subject, that the ureters are much dilated in all these cases; he even succeeding in passing a No. 6 English catheter through the ureters into the pelvis of the kidney. Scar tissue also is found all around the bladder opening, as from an unsuccessful plastic operation—distinct evidences of rupture and cicatrization.

"But the most incontestable proof of the correctness of this so-called mechanical theory of the origin of epispadias is found in the cases of intra-uterine healing of extrophy of the bladder and of epispadias, of which the best case is that of Kuster. Here, in a boy 1 year and 7 months old, an unmistakable scar stretched from the umbilicus on to the dorsum of the penis. In fact, it may well be that the separation of the pubic rami is the direct effect of the same urinary retention that causes rupture of the vesical and urethral walls. Thus, an early rupture of the urethra would give us a simple epispadias with normal symphysis, whereas, if this early rupture does not occur, the symphysis separates; if the urethra now ruptures, we get simple epispadias with absence of symphysis. If both bladder and urethra rupture we get extrophy of the bladder and epispadias."

It has been unquestionably demonstrated that the excretion of urine is active during the latter months of fetal life, and that the bladder undoubtedly fills and empties itself frequently during that period, and a careful review of the literature of the subject leads me to believe that this is the correct explanation of these peculiar caprices of Nature. It is not my purpose to discuss the causes of these defects; but to submit for your consideration the following cases which seem to me to be of special interest.

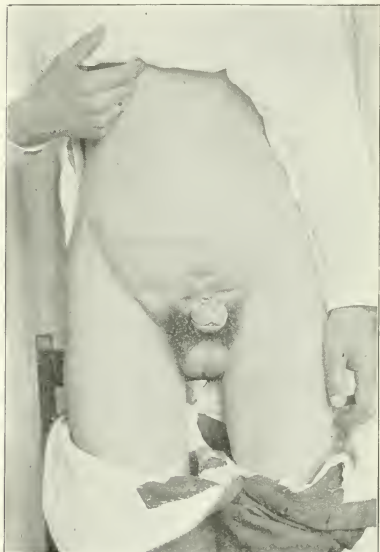
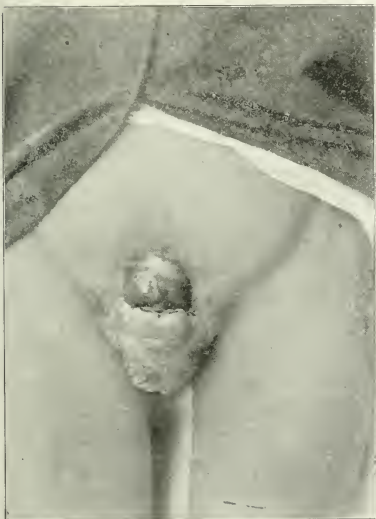
* Presented to the Section on Surgery and Anatomy, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1896.

¹ Disease and Injuries of Urethra; Morrow's "Genito-Urinary Diseases," vol. i.

The case of a Prussian, 23 years old, who presented himself for examination with the hope that I might be able to relieve his hypospadias and correct the incurvation of the rudimentary penis, is of interest. He was of good physique, but with a somewhat effeminate face; just a suggestion of a beard about the cheeks. Stripped, standing erect, with his face covered, he seemed to be a muscular woman. He had a well-developed bust, effeminate shoulders and upper arms. From the navel down, however, he was decidedly masculine. He had masculine hips, masculine thighs and legs; the external genitalia suggested a female vulva, but unusually prominent. When he lay on his back, with thighs separated, I was able to demonstrate a perineal hypospadias; that the structures which resembled the vulva were really the scrotal pouches containing a testis on either side of the median fissure and the urethral opening deep in the

this unusual condition by providing the young man with a mammary development which would be in consonance with his apparent sex. This case, in this light, is unique and worthy of record. I would add that an examination per rectum demonstrated the existence of a prostate and other pelvic structures normally a part of the genito-urinary apparatus.

Another case, a male of 17 years, of American parentage, and fair physical development, came to me for the relief of incontinence, the urine escaping from a penile epispadias of which he had been the unfortunate possessor since birth. The penis presented on its dorsal aspect, from beneath the pubic arch to the glans, a groove lined with mucous membrane which could be followed back beneath the pubic arch so that the finger could be



perineum, with a groove running forward to the rudimentary penis, lined with mucous membrane, and which suggested the introitus vaginae. This young man was masculine in his tastes and voice, and had it not been for the development of the mammae would have been of no special interest other than that of an aggravated hypospadias. He has no affinities for his own sex, stating that they were entirely confined to the opposite sex. There had never been any suggestion of menstruation; there had never been any periodic bleeding. The mammae were quite symmetric and the size of those of a girl of ordinary development at the age of 18 years. They were not of unusual size until the age of puberty, and developed at the time when the sexual characteristics became a pronounced feature of the development of the boy. He was then a mixture of the two sexes. It would almost seem that Nature, realizing the imperfection of the congenital development, had supplemented

introduced nearly to the neck of the bladder. The prostate seemed rudimentary, but was normal in shape. He was unable to keep himself dry because of the incontinence of urine.

I did not adopt the operation advised by Thiersch, namely, that of establishing a perineal fistula before attempting to close the epispadias; but made a roof to the urethra by bringing down a flap of skin which occupied the crescent-shaped, hairless surface immediately above the arch of the pubis. A trap-door was dissected down and laid along the dorsum of the penis, its epithelial surface being applied to the roof of the urethral furrow, and its lateral margins being let into slits on either side of the prospective urethra and there fixed by interrupted sutures. A catheter was kept in the bladder for a week and the boy kept sufficiently under the influence of opium to prevent erection. About half of the transplanted flap united, and incontinence has been entirely

overcome. The operation was a failure so far as restoring the canal in its entirety is concerned, and will have to be repeated in order that the organ may be of service for procreation. The physician who attended the accouchment at the birth of this child states that the little rudimentary penis was adherent to the abdominal wall and that he separated it from its adhesion by simple traction. These cases are sufficiently rare to justify their being made a part of the literature of this most interesting deformity.

The third case is one of aggravated epispadias with exstrophy of the bladder. This one I operated on when he was 16 years of age. He suffered, as all such unfortunately do, from eczema of the lower abdomen and thighs; was a constant source of offense to himself and everybody else, in consequence of the exposed surface of the bladder and the constantly leaking ureters. There

down beneath this bridle and fixed it by sutures. I then turned down a crescent of skin from above the bladder, inverting it, thus turning the epithelial surface inward. Then flaps of sufficient size were brought up from the groins, rotated on their pedicles and brought in contact with the raw surface of the crescent brought down from above. He recovered from the operation, which was made some five years ago, and has been made infinitely more comfortable by it. Of course, he has incontinence, but the urine is discharged only through the one opening, i. e., the urethra which I made, and he is able to direct it into a rubber urinal, which keeps him dry.

All these cases presented, in the immediate vicinity of the defects, the peculiar condition of skin referred to above, suggesting old cicatrization. There was comparatively little hairy development on the surface of the last boy's abdomen at the time I turned the crescent down to make a roof for the bladder. When I saw him a few days ago he told me that he was suffering from the presence of phosphatic deposits in and about the bladder, and on examination I was able to detect the presence of numerous little stalactites which had their origin from the deposits of urine salts on the hairy projections from the bladder roof.

In the case of epispadias without exstrophy of the bladder, the urethra terminated in a funnel-shaped opening beneath the pubic arch. The bladder was continent until the quantity of about eight ounces of urine was overpassed, when the incontinence commenced. The boy, while wet all the time, if asked to urinate, would pass about eight ounces of urine. The urine emerged from beneath the pubic arch in explosive fashion, and there was absolutely no ability to direct it into any receptacle. Since the operation he has been able to direct it with comparative accuracy. This condition of affairs demonstrates that, while the repressive influence of the deep urethra was deficient, it was not entirely wanting, inasmuch as my having been able to extend the urethra about an inch beyond the pubis has done away with incontinence and has put the function of the organ practically within his control.

EXSTROPHY OF THE BLADDER.*

BY DUDLEY P. ALLEN, M.D.

Professor of Surgery, Western Reserve Medical College; Surgeon to Lakeside Hospital; Member of the American Surgical Association.

CLEVELAND.

In presenting to this Association a case of exstrophy of the bladder, it is not my purpose to enter on a prolonged discussion nor into a lengthy historic sketch of the various operations which have been proposed for its relief. I wish simply to present a case on which I have operated, that it may be added to others operated on in the same way, and thus bear evidence of the success of this method of treatment. It may be in place, however, in presenting the case, to speak very briefly of the various operations which have been introduced for the relief of the malady, together with some of the objections to them.

All methods which have been introduced for the formation of a covering for the exposed mucous membrane of the bladder have two objections. The first is that, although by covering the exposed mucous membrane they preserve it from external irritation, they do not prevent



was a rudimentary penis and a rudimentary corpora cavernosa attaching to the rudimentary pubic bones on either side, the pubic symphysis being entirely absent. The right testicle was in the inguinal canal; the left undescended and could not be felt. The cutaneous margins of the exstrophy, particularly in the median line, presented a peculiar cicatricial appearance "as though an unsuccessful plastic operation" had been made, as mentioned in the foregoing portion of my paper, but strangest of all in this boy's case, was the absence of a navel. The allantoic structures had evidently failed to be continued to the normal point of attachment for the urachus, and the umbilical cord had emerged from the opening immediately above the exposed bladder. I dissected a quadrangle of skin free, the long axis of which was transverse to the vertical axis of the perineum, leaving both ends attached. I pulled the rudimentary penis

*Presented to the Section on Surgery and Anatomy, at the Fifth Annual Meeting of the American Medical Association, held at Columbus Ohio, June 6-9, 1899.

the escape of urine. This escapes and soils the patient, exactly as it did before the operation. The method of covering the mucous membrane by turning a flap of skin over on it, placing the epithelium of the skin next to the bladder, by whatever means it is accomplished, has a second very grave objection, viz., that the hair of the integument favors the incrustation of the interior of the artificially formed bladder with phosphates. The discomfort caused by the presence of phosphates in the cases which I have observed is far greater than the discomfort arising from the exposed mucous membrane. In several cases of this sort, operated on by other surgeons, and which have come under my observation, it has been necessary for me to clear away the phosphates. The suffering which they caused was so great that the operation has been worse than useless.

Murrey¹ has proposed an operation differing somewhat from those usually employed. He describes three cases in which he has covered the mucous surface of the bladder by flaps cut from either side of the bladder, the flaps being a little broader than the exposed mucous membrane, these rectangular flaps being drawn together over the bladder and united in the median line. The integument is not turned inward, as in most other operations, but the raw under surface of the flap comes in contact with the mucous surface of the bladder and heals by cicatrization. He claims that his cases have been less troubled by the accumulation of phosphates than those operated on by other methods of inverting the flaps.

I shall not undertake to describe the suggestions of Simon, Czerny, Segond, Pozzi, or any other of the vast number which have been made for relieving this deformity by plastic operations. By none of them, so far as I have been able to ascertain, has there been a single case in which the free escape of urine has been efficiently controlled. A plan proposed by Sonnenburg, of drawing the ureters downward and forward, close to the base of the penis, which is always in a condition of epispadias, has the advantage that it makes it much more easy to catch the escaping urine in a receptacle than it otherwise would be, and by this method the exposed and sensitive mucous membrane of the bladder is dissected away. In my judgment it is one of the best methods proposed, excepting that of Maydl, which I shall soon describe.

The plan suggested by Trendelenburg, of forcing the pelvic bones together at the pubes, where they are always separated to the distance of an inch or thereabouts, by dividing the pelvis at the iliosacral synchondrosis and afterward uniting the edges of the exposed bladder by drawing them together in the median line, while forming a small bladder out of the existing mucous membrane, does not form a new sphincter nor does it relieve the patient from the free escape of urine.

The methods of uniting the pubic bones, suggested by Koenig and Küster, by dividing with a chisel the iliac bone down to the great sciatic notch, or that proposed by Koch of Groningen, Holland, of bringing the bones together by *brissement forcé*, do not differ in principle from that proposed by Trendelenburg, offering no superior method for controlling the free escape of urine. Rutkowski² has reported a case in which he removed from the small intestine a section of the gut, preserving the mesenteric attachment, and bringing it outside of the abdomen and laying open this section longitudinally, used it to form a new anterior wall to the bladder. The method is most ingenious, but does not provide a sphincter to control the escape of urine.

The plan proposed by Reginald Harrison of extirpat-

ing one kidney and drawing the ureter of the other kidney out through the patient's side, so that the urine can be more easily caught than can be done in the pubic region, has little to recommend it. In fact, none of the methods mentioned prevent the uncontrolled escape of urine, and although they may make it easier to catch the urine as it escapes, they do not relieve the patient from what is one of the most extremely trying conditions.

In 1894 a method was described by Maydl of Prag, of grafting the ureters into the sigmoid flexure of the large intestine. At that time he described two cases operated on in this way. Two years later he described three other cases, and publishes³ five additional cases, making ten operated on by himself, and ten others operated on by other German surgeons. He says he has thus far found no cases operated by this method outside of Germany. He also reviews operations made by the Trendelenburg method.

The method which he proposed and the one which I have adopted in the present case is to remove all of the exposed mucous membrane of the bladder excepting that which is immediately around the openings of the two ureters. After this has been done the abdomen is opened, the ureters are mobilized and the sigmoid flexure is drawn from the abdominal opening. A longitudinal incision is made into the intestine and the extremity of the ureters with their mucous covering is inserted into the sigmoid and made fast by a series of sutures. When this has been done the intestine is dropped backward into the abdominal cavity and the abdominal cavity is closed. An operation of this sort requires great delicacy in its execution, to avoid infection and to insure a perfect result. The wounding of the ureters can be avoided by inserting a small bougie into their openings. In my case this was easy on one side. On the other it was attempted, but I failed to insert the bougie into the orifice of the ureter. The existing separation of the pubic bones from each other to a distance of an inch or thereabouts, and the dissecting away of the mucous surface of the exposed bladder leaves a weak spot in the abdominal wall which it is difficult to repair. In my case I split the rectus muscle on either side and united the divided portions of the muscle in the median line, thus repairing the defect and greatly strengthening the lower abdominal wall. After the ureters had been implanted into the sigmoid and the anterior abdominal opening had been closed, in order to insure the free escape of urine through the bowel, the sphincter ani was thoroughly stretched and a drainage-tube was carried well up into the rectum. The patient bore the operation well, complained of relatively little discomfort, and within a few hours after the operation began to pass urine per rectum. At no time was the patient's condition at all serious, and he made a rapid and most satisfactory recovery.

The operation was performed on November 3, and the patient was discharged from the hospital on Dec. 10, 1898. He has been in excellent health since the operation. He has had no irritation of any sort from the retention of the urine in the large intestine, and he retains it without difficulty during the day, from four to five hours, and during the entire night.

Dr. Fowler⁴ of Brooklyn has reported a modification of Maydl's method for implanting the ureters into the rectum. He surrounds the divided extremities of the ureters by an infolded flap of mucous membrane taken from the bowel. The method is very ingenious, but it seems to me questionable whether the artificial protection against infection of the kidneys thus secured sur-

passes that afforded by the natural openings of the ureters through the mucous membrane, as formed by nature.

The statistics of the operations which have been performed by various other methods up to this date are well summarized by Pousson*.

Up to the present time it seems to me no method proposed gives as much relief as that used on the patient above. The number of cases already operated on, the small number of deaths, the relief gained, and the exemption from consequent infection of the kidneys for periods extending up to several years are strong evidence of the value of the operation. It is far superior to any other method previously attempted. A final judgment must be reserved until the results have been followed for a longer period, but even should the kidneys become ultimately diseased as a result of the operation, I question whether a few years' comfort, permitting an individual to mingle freely with his fellows, would not be preferred to a longer existence under the previously existing disabilities and necessary isolation.

BIBLIOGRAPHY.

1. British Med. Jour., June 12, 1857.
2. Centralbl. f. Chir., April 22, 1899.
3. Wiener Klin. Woch., Feb. 4, 11 and 18.
4. Fowler: Am. Jour. Med. Sci., 1898.
5. Ann. des Mal. Organes G.-U., 1896, p. 103.

EXSTROPHY OF THE BLADDER.

OPERATIVE TREATMENT WITH SPECIAL REFERENCE TO
MAYDL'S OPERATION.*

BY RUDOLPH MATAS, M.D.

NEW ORLEANS.

The remarkable and brilliant results obtained by Dr. Allen, and the interesting practical paper by Dr. Wheaton, forcibly exhibit all the possibilities and resources of the most advanced surgical technic in dealing with this rebellious and pitiable condition, and they encourage us in the belief that the aspirations of a half century of earnest, incessant and laborious effort in a special field of surgical thought are about to be crowned with success. It is just such evidence as that presented to us by Dr. Allen that the mass of the profession has been patiently awaiting before accepting, as an accomplished fact, that which until recently has been looked on only as a hope, a possibility—the radical cure of exstrophy of the bladder. The importance and value of these contributions can not be overestimated when we consider that they are presented to us just as we have reached the turning-point between the two great epochs in the history of the subject—epochs which we would distinguish as the old or palliative and the modern or radical period.

The surgical history of exstrophy of the bladder is a fair reflex or mirror of the progress accomplished in surgery. The cure of ectopia vesicæ is a problem that has confronted and vexed the surgeon for nearly a century. The ancients simply referred to this condition and described it; to them it was a hopeless state, a *luxus naturæ* which was as distant from the resources of art as it was pitiable, distressing and degrading. If we except the early and unfortunate attempts of Dubois and Dupuy, in 1806, and of Gerdy, in 1845, we find all references to the treatment of this deformity passed by in silence until the last half of the present century, when, under the impetus given to operative surgery by an-

esthesia, we discover the first serious and sustained efforts to ameliorate the condition of its unfortunate victims. Here and there a daring genius, more adventurous than his contemporaries, had the courage to attempt methods of relief that were in advance of the resources of his period, but these isolated attempts failed and lapsed into oblivion. To this category belong the early, daring operations of Lloyd (1851), John Simon (1852), and Roux (1853), who suggested and attempted means of permanent relief by extirpating the offending organ and deviating the course of the urinary flow into the rectum. But the failure of such early efforts is not surprising when we consider the imperfection of the technic. As in the history of many other rebellious and difficult morbid states, such premature efforts had to remain sterile until further evolution had made the conditions ripe for their fructification and fulfilment. Thus it is that the surgical treatment of exstrophy of the bladder has in the last fifty years witnessed two distinct periods of surgical activity and enterprise, during which suggestions and methods of relief have accumulated and multiplied until the literature of the subject has attained voluminous and exhausting proportions.

As characteristic of the older period, which extends from the fifth to the ninth decade of the present century, we notice the prevalence and dominance of extraperitoneal operation—the purely plastic period in which every imaginable method of utilizing the skin adjacent to the bladder is suggested and devised. It is the period which Richard, Alquié, T. Holmes, N. Wood, Lefort, Thiersch, Humbert, Rydygier, Pancoast, Ayres, Greig Smith, Pozzi and many others have enriched with their ingenuity and experience. By these methods all that was aimed at and obtained was a cosmetic and palliative effect; the protruding, prolapsed bladder was covered with skin, and the accompanying epispadias was sometimes cleverly, though more often only clumsily, relieved. These methods have been fruitful in teaching us how to overcome the obstacles in the way of plastic repair in regions which are bathed with a septic and irritating fluid, and how best to utilize the skin so as to cover a large loss of substance. But, at best, the results were chiefly cosmetic, and only helped the sufferer by making his complaint more bearable, and by placing the parts in a more favorable condition for drainage. But apart from this, what could be expected from the purely dermatoplastic methods? They were incapable of providing a sphincter which would regulate the urinary flow, and they left the unavoidable cystitis unrelieved; on the contrary, even when a small receptacle or pouch was formed for the retention of a few centimeters of decomposing urine, the growth of hair on the inner or inverted surface of the skin flap favored the precipitation of urinary salts and the deposit of calcareous incrustations, which irritated the sensitive mucosa more than ever. No better results were obtained by the suggestion of Segond, who dissected the vesical mucosa out of its peritoneal bed and used the dissected membrane to cover the penile defect (epispadias), and held it in place by a flap ingeniously borrowed from the scrotum. Nor better, functionally, is the old and original method of Dubois and Dupuytren, resurrected subsequently in a more formidable and dangerous form by Trendelenburg, Passavant, and Neurdorfer. These operators aimed at a direct approximation of the vesical edges by forcibly narrowing the pelvic girdle and approximating the undeveloped pubic arch by sections made at the sacroiliac joint and other parts in the pelvic skeleton. The peril of such violent methods, coupled with their insufficiency, even when

*Presented to the Section on Surgery and Anatomy at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

the patients survived them, has led many operators, even up to the present, to abandon all efforts at reconstructing the bladder, or making it a useful receptacle. Many now satisfy themselves with Sonnenberg's (1882) operation, and simply transplant the ureters from their insertion in the bladder to the root of the penis, or even into the glans, where the urine can be directed more effectually into the artificial receptacle intended for the purpose.

While surgeons were still busy pursuing the ignis fatuus of a mode of cure by purely plastic methods, others sought a solution of the problem in more radical but also more perilous directions. The old and forgotten experiments of Roux, Simon and Lloyd were revived, and, with the encouragement offered by the success of aseptic methods, the modern radical period was inaugurated by the clinical and experimental observations of Thomas Smith of London (1879), Gluck and Zeller (1881), Bardenheuer, Novaro (1887), and more especially by Tuffier (1888), who obtained a unique success in the human subject by his method of extirpation of the bladder and transplantation of the ureters into the lower intestinal tract. But the results of these experiments and isolated operative attempts were almost constantly and uniformly unfavorable. Septic peritonitis and, more often a secondary pyelonephritis from ascending ureteral infection beginning at the open mouths of the transplanted ureters was almost the unavoidable and promptly fatal consequence of this mode of intervention.

Septic peritonitis, nephritis and stricture of the ureter constituted the formidable trio which had apparently combined to defeat the advance of the surgeon in this direction, and for a time the goal appeared to be as far from reach as ever. Nevertheless, the complexities and difficulties of the problem only appeared to arouse greater interest in the solution of the problem, and new methods and suggestions by which to avoid the most dangerous of the complications—pyelonephritis—soon multiplied to an almost embarrassing extent. The names of Morestin, Chaput, Giordano, Maclaure, Harvey Reed, W. Van Hook, Kuster, Budinger, Boari, Witzel, Vignoni Pisani and Krynski are among those made familiar to the student of the subject by the more or less practical suggestions and improvements they have contributed to the solution of this difficult question.

Nevertheless, and apart from a few isolated successes obtained in transplanting a single ureter (Chaput, Boari), the operation of ureteral grafting when simultaneously applied to both ureters had not been demonstrated to be a practical and successful operation in the human subject until Maydl, of Prague, startled us in 1893-94, with the report of two cases of exstrophy of the bladder which he had relieved permanently and happily by his original method of transplanting the ureters, including the sphincter apparatus, into the sigmoid flexure of the colon.

At first Maydl had few imitators. Berghem followed in 1895, then Krynski, Resigotti and Trombetta in 1896, in all five operations and five successes. In 1896 Maydl reported three additional new cases of his own with one death. In his latest contribution¹ he tabulates a total of twenty operations, including his own, and if we now add Dr. Allen's case, we will have a total of twenty-two cases with only three fatalities. This total of twenty-two cases and three deaths, or a little over 13 per cent., is a most extraordinary record for a new operation involving delicate and difficult manipulations in the abdominal cavity. Few abdominal opera-

tions of this magnitude have been followed by such a measure of initial success as in this case, and what is more striking and encouraging is that these results have been obtained not only by the initiator himself, but by a number of operators who have followed each other in close succession in different parts of the world.

The question arises, how many cases operated on by this method have not been reported; and, again, how many of these ended fatally? The well-known aversion of most men to admit or publish their failures justifies the belief that the mortality could probably be increased if we only knew where to ferret out the facts. But, on the other hand, this argument holds equally true for the other methods, and the fact remains that since the cure of exstrophy has been attempted by extirpation of the bladder and the grafting of the ureters into the lower intestinal tract, no record has been anywhere published which could compare in the number of cases and brilliancy of results, with that which Maydl can claim for his operation.

Are we prepared, on the strength of the evidence presented, to say with Trombetta that "the therapeutic problem involved in the radical cure of exstrophy of the bladder has found its complete solution in Maydl's operation, and that from this on it would be foolish to return to the autoplasmic methods which, up to the present have so unproductively exercised the brain and hand of the surgeon?" That this is not the opinion of all surgeons, and that there is still some doubt as to its superiority and greater safety over all methods recently suggested, is attested by the diverse procedures that have appeared and have been applied with variable success since Maydl's results became known to the profession. The contribution of Boari, who experimented successfully on animals, with his ingenious anastomotic button; the operations of Krynski, Vignoni, Pisani, G. Ryerson Fowler and Franklin H. Martin, are subsequent to Maydl's work, and suggest to us that these observers regard the advantage obtained by the transplantation of the elliptical piece of the vesical trigone, which contains the valvular insertion and sphincter apparatus of the ureters—a capital and distinctive point of Maydl's operation—to be illusory, or at least of doubtful advantage.

More recently still we have read in an article on exstrophy and vesical plastics by Max Rutkowski², an assistant in Obalinski's clinic at Cracow, that it is not in accordance with the conservative tendencies of modern surgery to sacrifice existing organs or parts of organs, provided these are healthy. He is therefore not in favor of Maydl's operation, which extirpates a rudimentary bladder, though he is compelled to admit the remarkable success thus far obtained with this procedure. He accordingly believes in a return to plastic methods, provided these are radically modified in accordance with modern and more rational ideas. He contends that the cause of failure of the old plastic operations was due to the unphysiologic attempt to repair a defect in the urinary bladder by substituting, for mucous membrane, skin, which not only acts as a foreign body, but is devoid of muscular fibers, and serves no useful purpose in the repair of a contractile organ. He then refers to the remarkable experiment of Tizzoni and Poggi who, in 1889, succeeded in completely reconstructing the urinary bladder, which they had previously extirpated, by borrowing mucous membrane from the intestinal canal. They formed this organ out of a segment of bowel which had been separated by exclusion from the intestinal tract; they then grafted the ureters into a newly-made receptacle and thus succeeded in creating a new bladder.

¹ Wiener Med. Woch., 1899, Nos. 6-8.

² Centralbl. f. Chir., April 22, 1896.

In imitation of this procedure, Rutkowski very ingeniously and with extraordinary skill proceeded to cure an exstrophy of the bladder in a boy, 12 years of age, who had previously undergone Trendelenburg's and Rydygier's operations unsuccessfully. Rutkowski's procedure is as novel and ingenious as it is dangerous. He made an abdominal section above the level of the exstrophied bladder and drew out a loop of the ileum and resected 6 cm. of intestine. This section of bowel he kept alive and nourished by leaving a mesenteric pedicle attached. The continuity of the intestinal tract was then restored by circular enterorrhaphy, the excluded segment was split at its convexity and the mucous membrane stretched out and sutured to the refreshed margins of the bladder. The mesenteric pedicle was sufficient to nourish the intestinal graft and then the abdominal walls were approximated so as to cover the bladder, and the boy recovered. Eight weeks after the operation he was able to retain 25 cm. of urine—over an ounce—for three-quarters of an hour, the urine being expelled in a jet at a distance of 30 cm. from the body. This is certainly a remarkable exhibition of what modern surgical technic can accomplish when it is reinforced by long and diligent training in a special direction.

Rutkowski's operation is certainly unique in the history of surgery, but does the survival of the patient and the result obtained justify the risks involved in the procedure? Does it convince us that the author's argument in favor of a revival of the plastic treatment of exstrophy has been demonstrated to be correct by the results obtained in this case? Can such a result remarkable as it is, compare for an instant with the final results of Maydl's operation? No! The only advantages that we can appreciate in Rutkowski's operation lies in the fact that the ureters are not disturbed from their attachment to the bladder, and that the dangers of septic pyelonephritis are obviated, but in every other respect it is a failure when we consider the functional result as compared with such cases as those reported by Dr. Allen and other surgeons who have followed in Maydl's footsteps. We believe that we are safe in prophesying that Rutkowski's case is destined to remain a unique precedent of its kind in operative surgery, and that it is not likely to find many imitators.

The operation that now remains for our consideration, and that must command our attention, is Maydl's operation, and our efforts should be directed toward perfecting its technic in order that its risks and dangers may be reduced to the safest minimum. The dangers that must be apprehended in this procedure are, in brief: 1. The sloughing of the valvular insertion and sphincter apparatus of the ureters, after this has been severed from its vesical connections and transplanted to the bowel. 2. The possibility of contaminating the peritoneum in the course of the vesicocolostomy, and subsequently, if sloughing should occur after the operation has been completed. 3. The possible failure of the valvular insertion of the ureters to serve efficiently after the vesico-ureteral graft has been successfully implanted into the bowel; in which event there is nothing to prevent the dreaded and fatal infection of the ureters and kidneys. 4. The existence of a congenital anomaly in the sigmoid or omega colon, in which the mesentery is so short that it will be impossible to drag the colon to the median incision, thus seriously complicating the technic, as in Park's fatal case.

The operator who cuts off both ureters from the bladder, and transplants them into the colon must experience a certain and unavoidable anxiety—an anxiety that only further experience will overcome—that is born of

the feeling that he has burned his ship behind him and has staked all his patient's chances, all his hopes, in the hazard of the game. It is the utter and absolute hopelessness of remedying the evil when this does occur that must make any conscientious operator vacillate and question his mind and his responsibility many times over, before deciding to embark in so perilous an undertaking. But is this an argument against Maydl's operation in particular? Again, No! For the dangers that we have referred to apply equally as well, and indeed with much greater emphasis, to all the methods of ureteral grafting alike. The danger of sloughing of the bladder graft, with its attendant dangers, which is uppermost in the mind of the operator, has been to a great extent dispelled by the careful anatomical researches of Margarucci, who demonstrated at the Twelfth International Congress, held in Rome in 1894, that the ureter is nourished by an independent vascular supply which, descending from the renal side, supplies not only the ureters but the mucous membrane about its orifice, where it forms an anastomotic connection with the vessels of the vesical trigone. This is a most reassuring fact. In addition to this, the danger of ultimate stricture from cicatricial contraction of the ureteral orifice is certainly obviated by Maydl's operation in a manner not equaled by any other operation. Krynski's, Martin's or Fowler's operations, which are the next best, not excepted. But, finally, more convincing than anything else, is the real test of merit and value, the accumulated evidence of the clinical test, which indisputably demonstrates that no other operation has thus far succeeded in overcoming the risks of renal infection with more certainty and success than Maydl's procedure.

We have purposely left out of consideration the question of intestinal and rectal intolerance, because it has been abundantly demonstrated that the rectal and colonic mucous membrane will readily adapt itself to the conditions of a urinary receptacle.

Personally, my attitude toward the cure of exstrophy of the bladder by the radical method has been most conservative, and, furthermore, my conservatism has not been influenced by the recorded experience of others, but chiefly by the results of my own experience. My disgust at the unsatisfactory functional results of the classic autoplasmic operations as observed in my own practice, has kept my interest ever alive to the possibilities of other methods. I have now two cases of exstrophy in which I would have long ago attempted Maydl's operation had it not been that my lack of success with ureteral transplantation in dogs made me timid and kept me from attempting the operation on the human subject. In 1896 I read Boari's communication in the *Policlinico* of Rome, in which the application of his ingenious buttons, devised for ureteral anastomosis, was presented in a seductive manner. I immediately sent to Italy, to the author, for a set of models, and proceeded to experiment with them without delay. I followed the technic as faithfully as possible, on two dogs, but both animals perished promptly from acute ascending renal infection. The technic was simple and beautiful, but the results were bad. This convinced me that the direct anastomosis of the ureter into the bowel without providing for a valvular arrangement was untrustworthy and should be rejected. In 1897, I undertook to perform Maydl's typical operation on two dogs; the bladder was extirpated in each and the ureters, with the elliptical flange of the vesical trigone, were sutured to the rectum. Both dogs died, one in twenty-four and the other in thirty-six hours after the operation. In both the vesico-ureteral grafts were perfect; there was no sloughing, and there was no urin-

ary or fecal leakage; in both, however, there were evidences of septic peritonitis, caused no doubt by infection from the bowel during the course of the operation; in the dog that survived thirty-six hours there were also evidences of a very intense hyperemia of the kidneys. I am fully convinced that the operation is much more simple in the human subject and less likely to be followed by septic infection, as contamination from the bladder or bowel can be much more efficiently guarded against—especially if the sigmoid mesocolon is long enough to permit the bowel to be dragged out of the median incision.

I would summarize my impressions as follows:

1. All autoplasmic methods proposed for the cure of ectroxy of the bladder are unsatisfactory and, at best, simply palliative.

2. Of all the radical methods which involve an excision of the bladder and a transplantation of the ureters to the rectum, Maydl's operation is by far the most complete, rational and satisfactory, from the technical point of view.

3. Maydl's operation offers the best conditions for the complete correction of the associate epispadias.

4. Notwithstanding the comparatively large number of successful cases accredited to this method, its relation is not yet fully ascertained, though the ratio, as obtained from published cases—over 13 per cent.—establishes the superiority of this method above all others from the prognostic point of view.

5. Notwithstanding the apparent theoretic simplicity of its technic, Maydl's operation is a difficult, laborious, and in many respects a dangerous, operation and should only be undertaken by those who have thoroughly familiarized themselves with its difficulties by special training in abdominal surgery, supplemented, if possible, by experimental work.

6. It should not be applied indiscriminately to all cases, but only to those patients whose general condition is such as to warrant a long tedious operation likely to be attended by serious shock; and whose eliminating organs, especially the kidneys, are normal and capable of effective elimination.

DISCUSSION ON PAPERS OF DR. ALLEN, WHEATON AND MATAS.

DR. J. RILUS EASTMAN, Indianapolis.—In the Doctor's case there has been no resulting proctitis. This has been the chief objection. Dr. Allen deserved the honor of being the first man in America to make successful the Maydl operation; it is not rational to make the operation; circumstances tend to combine which contraindicate this method. Sonnenberg of Berlin dissects the ureters out behind the peritoneum and stitches them in the tip of the penis. My case was one in which both kidneys were more or less disorganized—one side a pyonephrosis and on the right a chronic nephritis. I did not implant these ureters; my boy was exsanguinated; he had not the strength to stand such a heroic operation, so I applied the method of Sonnenberg. Before I made the operation, however, I removed the left kidney, which was in a condition of pyonephrosis and was emaciating the boy and would have killed him. I brought the ureter on the right side and stitched it into the tip of the penis, grooved it with an incision and stitched the right ureter into this, so the boy can now wear a urinal. I have made an aluminum tank which fits around his thigh, not over three-eighths or a quarter of an inch in thickness, and which is connected with the tubes by a rubber tube with a pneumatic collar, and into which the penis—the little clupepadiac penis—with its ureter will fit, and which I hope will give him some relief. When we bear in mind that this boy lived for twelve years in a most pitiable condition, the mother changing his diapers three or four times an hour, he being helpless for ten years, one can appreciate the amount of relief obtained; still it cannot be gainsaid that the Maydl operation is one of choice. Certainly this operation would indicate it, as it removes all this dribbling of the urine and the horrors of having to change diapers three or four times an hour.

DR. W. J. MEANS, Columbus.—We are all agreed that the Maydl operation is the one, and all are proud to see the ex-

emplification of this operation by an American surgeon. This boy was certainly a pitiable object when he was brought to the Protestant Hospital. He was 15 years old, and it was a question whether he was a boy or a girl; he was excluded from society. We sent him home, as you see, dressed up like a young man, true to his belief that the operation, while only palliative, will be a source of relief to him that will justify any experience he may have gone through. The operation in his case is not yet fully complete. I had intended to make a urethra that would have extended out to the glans, but you will remember that this operation was only made on the 13th day of April and I have just now gotten the parts entirely healed up. There is one trouble in making these operations. You always have plenty of water and you have to provide a way for it. You will notice that the cleft in the pelvis is at least three inches. I leave it to your judgment whether such a cleft should be closed with any degree of safety to this boy's condition, or whether it can be remedied by such an operation.

DR. D. P. ALLEN, Cleveland.—The thing is the necessity of preserving the mucous membrane about the openings of the ureters; the safety of the operation depends on it and prevents infection of the kidney. That question must depend on statistics; quite a number of cases have been observed for three, four, five and six years, without any infection of the kidney. As to work on the ureters, it seems to me that it is most hopeful. I succeeded the other day in making an end-to-end anastomosis in the case of a horse-shoe kidney, and I think if we can do that we can do a great deal with the ureter.

THE PROCESSUS VERMIFORMIS.*

ITS ANATOMY AND BIOLOGY.

BY G. G. EITEL, M.D.

MINNEAPOLIS.

The older writers on human anatomy make no especial mention of the processus vermiformis, as a separate anatomical entity, and this omission on their part probably has its explanation in the fact that this small offshoot of the intestinal canal was not looked upon by medical men generally as the cause or seat of any disease until a period so late as to be within the memory of comparatively young members of our profession to-day. It is a study, both interesting and instructive, to note the various expressions of opinion that have been advanced on the probable utility, etc., of this process by authorities on anatomy, biology and evolution. It is the purpose of this paper to invite attention to some of these writers who have devoted more than a mere casual word on the troublesome little body situated in the right iliac region.

Deaver stated, in his work on appendicitis, that the vermiform appendix in man is the undeveloped, true cecum of some of the lower animals.

Harrison Allen states that the vermiform appendix is of unknown function, that it is found only in man, in the man-like apes, and in a marsupial animal, the wombat. It retains the embryonic characters of the large intestine, and is probably a rudiment of the enormous cecum of quadrupeds of the rodent type. Although thus structurally insignificant, its possible lesions may give rise to important clinical questions, and it is not infrequently a factor in retroperitoneal abscess. As a rule, the appendix is bent once upon itself, or twisted. It may be concealed beneath the cecum, or may hang down in the cavity of the pelvis, where it has been known to effect adventitious adhesions with the pelvic organs, and even to perforate the bladder. Rarely it is lodged under the ascending colon, or deflected so as to be in contact with the abdominal wall. Cruveilhier records an instance in which it was contiguous with the liver. Other writers have mentioned the possibility of the appendix being caught in the mesentery, or forming an ingredient of inguinal hernia.

*Presented to the Section on Surgery and Anatomy, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1896.

Leidy refers to the cecum as the broadest portion of the colon, and says it is a capacious sack, two or three inches in length and as wide as the greater length. It is pouched, like the rest of the colon, and at its inner back part is extended in a cone which is abruptly prolonged into a vermiform appendix. This is usually from three to six inches long, about the thickness of a goose quill, commonly turned upward, and after a variable flexuose course terminates in a blind, free, rounded end. At birth it is less abrupt at its commencement, and appears more evidently a continuation of cecum. It is peculiar to man and some of his nearest allies, the higher apes, but exists also in the wombat, an animal at the opposite limit of the same class. It is regarded as a rudiment of the greatly elongated cecum of most herbivorous mammals. Sometimes it is short, and rarely it is altogether absent. The cecum occupies the right iliac fossa, to which it is closely or more or less loosely attached. In the former case, it is covered in front and on the sides by the peritoneum reflected to the fossa, and is attached behind by areolar tissue to the investing fascia of the iliac muscle; in the latter case the peritoneum invests the cecum to a greater degree, and attaches it behind by a doubling called the mesocecum. A fold of the peritoneum also extends from the vermiform appendix to the adjacent extremity of the cecum, serving to retain it in a more fixed position.

Wiedersheim of Freiburg describes the processus vermiformis as a feebly developed organ which lies at the end of the short cecum, and possesses a considerable morphological interest. In man, its average length is 8.5 cm., but it may be but 2 cm., or on the other hand some 20 to 23 cm. long. Considerable variation also occurs in its width and disposition, and in the folds of mucous membrane, which bound its ostium. Indeed, everything points to the retrogressive character of this appendage, and justifies us in concluding that the total length of the alimentary tract was formerly greater than it now is. The great variations in the form and size of the cecum also support this view. According to the best authorities, the processus vermiformis at different ages measures as follows:

At birth.....	3.4 cm.
Up to 5th year.....	7.6 cm.
5 to 10.....	9 cm.
10 to 20.....	9.75 cm.
20 to 30.....	9.5 cm.
30 to 40.....	8.75 cm.
40 to 60.....	8.5 cm.
Over 60 years.....	8.25 cm.

In embryos and new-born children on the one hand, and in adults on the other, the vermiform process varies in length in proportion to that of the rest of the intestinal canal; and since it is a degenerating organ, it is not surprising to find that it is most strongly developed in fetal times, and does not grow at a rate proportionate to advancing age. In the embryo, its length in proportion to that of the large intestine, is approximately 1:10, and in the adult 1:20. Further light is thrown on these facts by Ribbert's interesting discovery of the frequent occlusion of the vermiform process. He found it either partially or totally closed in 25 per cent. of the cases examined, with accompanying very decidedly regressive changes—pathologic cases excluded—in the related tissues; actual pathologic obliteration nevertheless occasionally occurs at the end of the vermiform process. The occlusions which result, and which are probably always due to inflammation, are less frequent than the typical obliteration. I cannot in this connection refrain from referring to the coincidence of the existence

of vestigial organs and the tendency to disease caused by them.

Taking only adults into consideration—i. e., omitting individuals under 20 years of age, in whom variations are comparatively rare—out of 100 vermiform processes, 32 were found partially or wholly closed. Complete occlusion throughout the whole organ was found in a very small number—about 3.5 per cent. Partial occlusion is much more frequent, all degrees being found, from the first narrowing to the complete closing of the lumen. In rather more than half of the cases the occlusion affected a quarter of the length; in nearly half of the remainder its extent varied between one-quarter and three-quarters, and in only a very small number did it affect more than three-quarters, or close the tube.

This process of occlusion is equally marked in both sexes, and the statistics concerning its occurrence at different ages are very striking. They make it clear that there is a marked increase in the frequency of its occurrence in advanced age, as will be seen by the following table:

OCCLUSION OBSERVED.

1st to 10th year.....	in only 4 per cent.
10th to 20th year.....	in only 11 per cent.
20th to 30th year.....	in only 17 per cent.
30th to 40th year.....	in only 25 per cent.
40th to 50th year.....	in only 27 per cent.
50th to 60th year.....	in only 36 per cent.
60th to 70th year.....	in only 53 per cent.
70th to 80th year.....	in only 58 per cent.

It follows from the foregoing table, that in more than 50 per cent. of people over 60 years of age, there is degeneracy of the vermiform process. In new-born children, on the other hand, this phenomenon has never been observed, and the youngest child in whom it has been found commencing was 5 years old. Total occlusion is also similarly connected with age, though not in nearly so marked a manner as partial closure. It has never been observed before the thirtieth year; and while it was not found once in individuals between 50 and 60 years, it was most frequent in those whose ages range from 60 to 70. Among these, nine out of twenty-one cases recorded show complete occlusion; and since, besides them, there were seven just on the point of closure, we may conclude that more than 50 per cent. were thus affected. A relation has further been proved to exist between the length of the appendix, and its degeneration. The longest appendices—21 to 15 cm. long—kept their lumen throughout; in those 14 and 13 cm. long, commencing obliteration of the lumen was observed in four cases, and in those 12 and 11 cm. long, it was not found. From this point, however, occlusion again increased as the length decreased. If we leave out of account individuals under 5 years of age, in whom occlusions have not been observed, we find that it occurs as follows; viz:

LENGTH OF APPENDIX.

20 cm.....	34 per cent.
9 cm.....	18 per cent.
8 cm.....	32 per cent.
7 cm.....	40 per cent.
6 cm.....	30 per cent.
5 cm.....	70 per cent.
4 cm.....	66 per cent.
3 cm.....	100 per cent.

Although this connection between length and frequency of occlusion is, as the table shows, somewhat irregular, we may at least conclude that, as a rule, the shorter appendices show occlusion more frequently than the longer.

Richard Owen shows the striking resemblances existing among a large variety of animals. Speaking of the water-vole, he says that here the ilium terminates at the

base of the sacculate cecum, the slender termination simulates a vermiform appendage; the colon begins by a pair of large sacculi, but quickly contracts to the caliber shown. Two oval patches are here, as usual, situated on either side of the ilio-cecal valve. In the *Leporidae* they are lodged in a special pouch; the vascular mucous membrane of the cecum in these herbivorous rodents is agitated by being produced into a broad fold, disposed spirally to near the slender termination of the cecum, which is glandular, like the vermiform appendage in man. Speaking of the aye-aye, and describing the intestinal canal he further says that the small intestines are rather more than three times the length of the body; the cecum is about one-fifth that length; measuring two inches and seven lines; for the first inch it is 10 lines in diameter, but suddenly contracts to a diameter of three lines, terminating rather obtusely and resembling an appendix vermiformis, but this is not marked off by any valvular structure from the wider part of the cecum, and it is continued, as in the human fetus, directly from the end of the wider part, or cecum proper. This type of cecum is repeated in *Stenops javanicus*, with a larger and narrower vermiform termination. Again; in *Hylobates*, the vermiform appendage reappears; it is terminal, and in some species short; but is more differentiated as such by its glandular tunic and marked commencement than in *Lemuridae*; the appendix is terminal, but is long and convolute in the orang; in the chimpanzees there is a more marked constriction between the appendix and the cecum. The colon is sacculated and moderately long in all *Catarrhines*; it is loosely suspended by a broad mesocolon, and only in tailless apes does the cecum begin to adhere, through an incomplete peritoneal investment to the right hypogastric region. Again: in a binturong I found a cecal projection, probably a vermiform process, of half an inch in length at the beginning of a large intestine, two feet in length; the small intestines are seven feet long; the length of the animal, exclusive of tail, was two feet.

Gray says that, starting from what was originally the apex of the tube, the inner and back portion of cecum, usually 1.7 cm. below the ilio-colic opening, is a famous narrow, round part of the intestine called the appendix ceci, or, on account of its worm-like appearance, appendix vermiformis. This is first seen low down among the mammals, in the marsupial group, in the wombat. No sign of it again appears until the ichneumon and pig are reached, but not then is it a proper appendix. It is next seen in the lemurs and higher apes, as chimpanzee, orang, gibbon and gorilla. Finally, in man, it is present as a functionless and dangerous structure. It attains its greatest length between the twentieth and fortieth years. Its length, compared to that of the large intestines, is 1 to 10 in the new-born, 1 to 20 in the adult. There is no relation between the size of the cecum and the length of appendix. The appendix has no set position. Treves considers it to pass most frequently up from behind the cecum to the left, behind the ilium and mesentery toward the spleen. Others regard this position as nearly abnormal.

Turner of Russia finds it hanging into the true pelvis in 51 out of 83 cases, and transversely across the promontory in 20 more of these cases. Berry gives the order of frequency as: 1, pelvic position; 2, retrocecal; 3, intestinal cecal—toward spleen; 4, variable.

The order of frequency found in this country by Joseph D. Bryant was most often inward; then behind the cecum, downward and inward, into the true pelvis.

According to Ribbert and Zuckerkandl, the cavity of

the processus vermiformis tends to undergo obliteration, not as a pathologic process, but a physiologic one. In children the lymph follicles of the appendix are very numerous and close. After the twentieth or thirtieth year, it is normal for them to atrophy.

Obliteration of the process occurs to some degree in 99 cases out of 400, or 25 per cent.; total obliteration in 3.5 per cent. (Ribbert). Or obliteration occurred in 23.7 per cent., total obliteration in 13.8 per cent. and partial—distal half most common—in 9.9 per cent. (Zuckerkandl). It never occurs in the new-born. After 60 years of age, more than half are obliterated. It occurs more often in a short process, 5 to 6 cm. long. One can never tell by macroscopic appearance as to the presence of obliteration. There are four authentic cases of absence of the appendix on record.

Charles Darwin, speaking of the rudiments, says: "With respect to the alimentary canal, I have met with an account of only a single rudiment, namely: The vermiform appendage of cecum. The cecum is a branch or diverticulum of the intestine, ending in a cul-de-sac, and is extremely long in many of the lower vegetable-feeding mammals. In the marsupial koala, it is actually more than thrice as long as the whole body. It is sometimes produced into a long gradually tapering point, and sometimes constricted in parts. It appears as if, in consequence of changed diet or habits, the cecum had become much shortened in various animals, the vermiform appendage being left as a rudiment of the shortened part. That this appendage is a rudiment we may infer from its small size, and from the evidence which Professor Canestrini has collected of its variability in man. It is occasionally quite absent, or again is largely developed. The passage is sometimes completely closed for half or two-thirds of its length, with the terminal part consisting of a flattened solid expansion. In the orang this appendage is long and convoluted; in man it arises from the end of the short cecum, and is commonly from four to five inches in length, being only about a third of an inch in diameter. Not only is it useless, but it is sometimes the cause of death, of which fact I have lately heard two instances; this is due to small hard bodies, such as seeds, entering the passage and causing inflammation.

Of course at the time this was written, it was the common opinion that appendicitis was always caused by the presence of some foreign body in the lumen of the appendix.

BIBLIOGRAPHY.

- Wiedersheim: Structure of Man.
 Haeckel: Evolution of Man.
 Huxley: Organic Evolution.
 Huxley: The Anatomy of Vertebrate Animals.
 Cope: Primary Factors of Organic Evolution.
 Cope: Origin of the Fittest.
 Thomas Gray: Gray's Anatomy, 1897.
 Huxley: Practical Biology.
 Hertwig-Campbell: The Cell.
 Eimer: Organic Evolution.
 R. Owen: Comparative Anatomy and Physiology of Vertebrates.
 Ch. Darwin: Origin of Species.
 Ch. Darwin: Descent of Man.
 H. Allen: A System of Human Anatomy.
 Brehm: Animals.
 Jos. Leidy: Human Anatomy.
 J. B. Deaver: Appendicitis.
 Jos. McClure: Surgical Anatomy.
 Geo. McClellan: Regional Anatomy.

[The foregoing is one of a series of six papers on Appendicitis. The discussion will follow the last paper of the series.]

"In December, 1890, I objected to two imported Guernsey cows being placed in a stable where 28 milch cows and calves were kept. This because I suspected tuberculosis. In December, 1891, I stood by and saw 22 of the 28 slaughtered, and shown to be tubercular." (Letter from J. E. Storey.)

THE UTERUS.*

SPONTANEOUS RUPTURE OF ITS BODY DURING LABOR.

BY HENRY D. INGRAHAM, M.D.

BUFFALO.

Rupture of the body of the uterus during labor, for any cause whatever, is fortunately of rare occurrence, at least in this country.

Garrigues estimates it as occurring in the ratio of 1 in from 3000 to 5000 cases; Harris as 1 to 4000, and Lusk as 1 to 6000 cases. In Continental Europe it is reported as occurring more frequently, for Winckell found it in the proportion of 1 to 666 cases. This average is above that given by many writers, however.

Charpentier, in his "Cyclopedia of Obstetrics," estimates that in more than 3,000,000 cases of labor reported by thirty different writers, rupture of the body of the uterus occurred once in from 2000 to 4000 labors. As all cases of rupture may be classified either as traumatic, that is, resulting from manual or instrumental injuries, or as spontaneous, that is, occurring without any such injury, it would be of interest to know in what proportion of each Charpentier's cases are divided, but this point he does not state. No doubt many cases of rupture are not reported, and it is very natural that a smaller proportion of the traumatic cases should be reported than of those which occur spontaneously.

In investigating this subject, by making inquiries of several of the more prominent obstetricians of Buffalo, I find that in an aggregate of about 48,000 cases of labor, 12 cases of ruptured uteri have occurred, 5 of these being traumatic, and 7 spontaneous; that is, rupture from any cause occurred once in 4000 cases, while spontaneous rupture occurred once in 6857 cases of labor.

Most of the cases of traumatic rupture of which I have any knowledge occurred in the practice of midwives, and were due to their efforts to deliver the patient when the child's position was abnormal. In two cases the midwife attempted to deliver in a shoulder presentation by pulling on the child's arm; while in two other cases the rupture followed attempts at version without chloroform. In all these cases physicians were finally called, but the patients were either dead or moribund.

But the scope of this paper is to deal especially with those ruptures which have occurred without interference from anyone, that is, those which have been designated as spontaneous. In illustration, I would call your attention to the cases somewhat in detail.

CASE 1.—This case occurred more than thirty years ago, in the practice of Dr. John Hauenstein. Being a young man not long in practice, and having more faith in the instruction of teachers at that time than he had in later years, he drove six miles to attend a confinement without taking his forceps. The patient was 40 years of age—a primipara. Labor progressed slowly but naturally for several hours, when the pains became severe and somewhat irregular in character. The head not engaging, the doctor sent for his forceps, but before he could get them the uterus ruptured and the patient died in a few minutes from hemorrhage. From that time Dr. Hauenstein always took his obstetric forceps with him and was as skilled in their use as any obstetrician who has lived in Buffalo. This case, the only one of the series ever reported, appeared in the *Buffalo Medical and Surgical Journal*.

CASE 2.—This case occurred in the practice of the

*Presented to the Section on Obstetrics and Diseases of Women, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

late Dr. Storck. The patient was 38 years of age—a multipara, whose three previous labors had been normal, but protracted. In this case labor progressed slowly, with pains moderate for several hours, then gradually increased in strength, becoming severe, but making little progress, owing to the fact that the head did not engage. Dr. James Smith, who was sent for to assist, answered the call at once but just before his arrival rupture took place and the patient died almost immediately. With the exception of one foot the entire child was expelled into the abdominal cavity.

CASE 3.—Twenty years ago Dr. Earl was engaged to attend Mrs. M., Irish, 40 years of age, with her seventh labor. Five of her six previous deliveries had been by forceps, and one was a craniotomy. At about 8 p. m. he received an urgent call, as the patient was in very severe pain, and had been for some time. On his arrival he found a man in attendance and was told that he was a friend of the family—a druggist. He said that he had neither given any medicine nor examined the patient; and left soon after Dr. Earl's arrival. The doctor found the cervix well dilated, head engaged, and pains strong, though irregular. Suddenly all pain stopped. The patient did not complain of anything unusual, the pulse and appearance were normal. The doctor applied the forceps, and easily delivered a healthy living child. The placenta was soon expelled—the uterus contracted well. By this time Dr. Earl learned that the family friend, the druggist, had been there all day, had made several examinations, some of the latter ones giving the patient severe pain, and had given more than an ounce of fluid extract of ergot. Dr. Earl remained with his patient an hour after delivery, and left her cheerful and apparently in a normal condition. Soon after he went home he was recalled, as the patient was "very bad." When he reached the house the woman was dead, although no signs of either internal nor external hemorrhage could be discovered. This sudden, unexpected and unexplainable death caused much comment, doctor and druggist blaming each other. Two or three days after burial the body was disinterred, and upon post-mortem examination a transverse rupture of the uterus just above the utero-vaginal junction was found, but no internal hemorrhage. All other organs were normal. Suit was brought against Dr. Earl, but the profession came to his rescue, and he was fully exonerated. The druggist left the city during the trial, and has never returned.

CASE 4.—This case occurred in the practice of a midwife. The patient, a Pole, 35 years of age, multipara, had been in labor several hours. Prof. P. W. Van Peyma was called, but when he reached the house the patient was dead from a profuse external and internal hemorrhage. Although the Doctor immediately opened the abdomen, at the request of the attending priest, the child was dead when delivered. The midwife said she had not given ergot, nor attempted version, nor interfered in any way. Dr. Van Peyma knew her well and considers her truthful.

CASE 5.—This case also occurred in Dr. Van Peyma's practice. He was called by a midwife to see a Polish woman about 32 years of age, a multipara, who had been in labor several hours, the pains being especially severe for some time. It was a vertex presentation, and after careful examination the Doctor decided to do a version, but found it necessary to get a physician to give the anesthetic. During his absence the patient got up, walked about, suffering from very severe pains. Upon his second examination, Dr. Van Peyma found that the

head, which he was unable to move before, had receded and was now freely movable. Immediately applying the forceps he delivered the patient of a living child, and then introducing his hand to remove the placenta he found a rent in the uterus, through which at least one-half of the placenta had escaped. This case occurred in the early days of the use of bichlorid of mercury, and the doctor washed out the uterus with a 1-2000 solution until he found that it was entering the abdominal cavity. On the second day the patient complained of considerable abdominal soreness and tenderness, and there was a slight rise in temperature. However, the Doctor was told that she did not wish further medical attention, so that he personally did not see her again, but one week from the day of her delivery he sent the assisting physician to inquire how she was. The patient, who was out of doors, told him that she was perfectly well.

CASE 6.—This case was reported by Dr. Schroeter. About four years ago he was called by a midwife to see a Polish woman, 30 years of age, who had been in labor for several hours. The pains not accomplishing much, the midwife had given considerable ergot, how much the Doctor could not learn, but enough to cause irregular contractions. The woman had previously given birth to three children, each by forceps delivery. Before the Doctor's arrival the woman had a sharp, severe abdominal pain and lost a large amount of blood. Upon examination he felt the child's head high up and freely movable. He easily delivered a dead child with forceps, but when examining the placenta he discovered that the larger part had escaped through a tear of the uterus into the abdominal cavity and could be felt externally. This was extracted after some little difficulty, and the hemorrhage ceased. The patient died the next day.

CASE 7.—On the morning of Nov. 6, 1896, the writer was sent for by Dr. F. A. Harrington, with the request that he bring his long forceps, and also the instruments necessary for abdominal section. The patient was an Italian, 23 years of age, rather short and stout, the mother of two children, both of whom had been delivered by Dr. Harrington after normal but tedious labors. On November 4, the Doctor was called at 8 p. m., but finding the pains slight and cervix very little dilated, he gave $\frac{1}{4}$ grain of morphin and went home, instructing them to call if necessary. On the 5th, after calling several times, he went at 1 p. m., and remained. The pains from this time on were severe. It was a right occipito-anterior presentation, but even with complete dilation, the head did not engage. Neither patient nor friends would allow forceps to be used until 5 p. m., when the doctor refused to wait longer. While he was in an adjoining room sterilizing his instruments the patient got out of bed and sat over a pail of hot water to relax the parts. Just as Dr. Harrington entered the room she gave a scream, put her hand over the right iliac region, became pale and vomited. She would have fallen had she not been assisted to the bed. Upon examination the doctor felt the head, but higher than previously. Attempting to apply the forceps he could not feel the child's head. Introducing his hand still further, he could only find a foot. He immediately sent for Dr. Willoughby, who agreed with Dr. Harrington that a rupture of the uterus had occurred, with escape of the child into the abdominal cavity. There was no external hemorrhage, nor any symptoms of internal bleeding. Under stimulation the patient rallied, and it was advised that she be removed to a hospital. To this proposal both the patient and her friends objected, an Italian midwife strongly insisting

that if she were alone she would be all right; that she had had similar cases, all of whom had recovered. The patient was given two doses of morphin, $\frac{1}{4}$ grain each, during the night, and was fairly comfortable. When I saw her at 9 a. m. on the 6th, she had an anxious expression of countenance, pulse 150, weak and feeble, respiration 40, and temperature 101; not in much pain, with pupils contracted, showing her to be under the influence of the morphin. Upon examination, one foot of the child could be felt in the uterus, and through the abdominal walls the rest of the body could be found in the right inguinal region. It was evident that an operation was useless, but to prevent having any one called who might from her condition blame her medical attendant it was suggested that she be freely supported with strychnin and whisky, and if she were in condition we would operate in the afternoon. The friends were, however, given to understand that there was little hope of improvement and that they were criminally negligent for refusing operation immediately after rupture. A little before 3 o'clock that afternoon the patient died. Although objecting to a post-mortem, the friends wished us to make an incision and remove the child. It was a male weighing about ten pounds, and normal in shape. In the abdominal cavity just under the child were the placenta and membranes, with not more than two ounces of blood. The uterus was firmly contracted and the tear quite short; two-thirds of it was on the right of the median line, the left end being a little above the uterovesical junction and the other end curving slightly upward toward the fundus. The intestines and the peritoneum were dark in color, the vessels much engorged, showing that the inflammatory process had been unusually active during the twenty-two hours since the uterus ruptured. Although the pubic arch in this patient was slightly flattened, yet she had previously given birth to two children of about the same size and shape as this one, with neither instrumental nor manual interference. For the past few months she had increased in flesh, so that it is possible that there was a fatty degeneration of the uterus.

An analysis of the above cases shows that both mother and child died in all the traumatic cases, while in the spontaneous variety this mortality was 86 per cent. of the mothers and 71.5 per cent. of the children; also that rupture occurs more frequently in our foreign-born than in our native population. Only two of the cases reported were born in this country, and the birth of one of them was soon after her people came here. Doubtless this is partially accounted for by the fact that a large proportion of the foreign-born population of this country employ midwives. Although the American population of Buffalo is larger than the foreign-born, yet the birth-rate among the foreigners is much greater than among the native. We have quite an Italian population, and a very much larger Polish settlement, and nearly all these people, as well as the Germans, employ midwives, so that more than one-half of the births of the city are attended by them. Another very probable cause is the greater frequency of contracted pelves among the foreign-born element.

No doubt some of the cases of sudden death after confinement when the cause is unknown are due to ruptured uteri. Case 3 is an example. While others who die in a short time from septicemia may have a rupture of the uterus as the predisposing cause, the condition, however, is less frequent now than formerly, owing to the advances made in obstetric technic. Most of the cases reported occurred years ago. It is a fact well known to the older members of the profession that the

practice of obstetrics has changed greatly in the last twenty-five or thirty years. Now a physician does not leave his obstetrical bag at home, for fear that he will not be able to resist the temptation to use the forceps before he ought; and when labor is not sufficiently rapid to suit his convenience he does not give ergot freely until the contractions become severe and irregular. It was fortunate for the comfort as well as for the safety of women that much of the ergot formerly used was inert. Perhaps the same may be said of that in use to-day.

Had ergot not been given, and had forceps been applied at the proper time doubtless a majority of the cases mentioned might have saved.

DISCUSSION.

DR. JOHN M. DUFF, Pittsburg.—I think perhaps in the past we have had more cases of rupture of the uterus than have been reported, and undoubtedly it is so at the present time. Last year I was called to see a woman about the ninth day after confinement, and, unfortunately, when I arrived she was dead. I succeeded in getting an autopsy. A complete rupture of the uterus was found, so that my hand passed through it readily.

About six months ago I was telegraphed for one morning to come to the office of a physician. I went as soon as I could, and arrived there about one o'clock in the afternoon. The Doctor was upstairs in bed at the time; he came down, and I asked him the nature of the case he had, and he said he believed it was a case of rupture of the uterus. The woman resided several miles from the home of her parents; she was afraid to trust the Doctor there, and came to this town to have her baby. The Doctor was called at nine o'clock the night before, and found a breech presentation. The pains were violent. Several attempts were made to extract the child, but failed, and a prominent physician in that section of the country was sent for. Dr. No. 1 gave the anesthetic, and Doctor No. 2 made an attempt to deliver the body of the child, but after delivering the body he found the child was headless. He had attempted to deliver the head with forceps, but could not do so. Dr. No. 2 did a craniotomy to deliver the head, and it was said that the placenta came away immediately after the delivery. The woman was put to bed, and the Doctor made his visit in the morning and on examination found some coils of intestine in the vagina. It was then that they telegraphed for me. I examined the woman and found a coil of intestine in the vagina. I could not do anything for the case there, and said it would be necessary to have the woman taken to a hospital. The family objected, and so did the woman. The patient said she felt first-rate, but I insisted on her being taken to a hospital. She went to the hospital; I opened the abdomen and found several feet of dead intestines, which I removed, and put in a Murphy button. Continuing my examination, much to my surprise I found the uterus had been torn off and cut from the vagina and completely absent. There was no hemorrhage; the woman was in good condition apparently; I washed out the abdomen, and as one of the sponges was not found immediately, I began to feel around to see if I could find it in the abdominal cavity, and I reached under the spleen, felt something, pulled it down, and it was the placenta. It was the uterus that came away immediately after the head instead of the placenta. I have narrated this to you, believing that it is worth reporting, and you will understand why I do not use names. The woman died twenty-four hours afterward.

DR. JAMES F. BALDWIN, Columbus—I have seen four cases of rupture of the uterus in consultation. Of the four cases three were native-born, the other being a foreigner, who had a contracted pelvis. In one case, separating the point of rupture was a small fibroid, this case seemingly being the least hopeful of all of the cases on account of sepsis, the woman having been in labor for a week. The other three women promptly died before the day of operation. One was a case similar to that narrated by Dr. Duff, except that the uterus was not torn away, the woman having died before she was sent to the hospital. I saw the report of a case operated on by Dr. Branham, in which prompt recovery followed, although the woman was almost moribund at the time of operation. In one of my cases I believe if the woman had been brought to the hospital earlier there would have been a possible chance for recovery.

DR. INGRAHAM, closing the discussion—I believe rupture of the uterus occurs very much more frequently than we are led to suppose. I am pretty sure it does in Buffalo. More than half of the obstetric cases attended by midwives, after severe

labors, seem to die in a mysterious manner, and we do not know why. No autopsy is made, and I have no doubt many patients die of rupture of the uterus.

THE SUSPENSIO-UTERI LIGAMENT*.

ITS STRUCTURE.

BY J. WESLEY BOVEE, M.D.

Fellow of American Gynecological Society; Member of Southern Surgical and Gynecological Association; Professor of Clinical Gynecology and Gynecological University; Gynecological Surgeon to Columbia and Providence Hospitals, etc.
WASHINGTON, D. C.

The subject of uterine displacements has already caused a wonderful amount of discussion, and to this day it is as prolific of animated debate as any subject in gynecology. This paper does not deal with the causes and milder forms of treatment of such malpositions of that organ. Nor do we intend to compare the different surgical measures for relieving such conditions further than to say that ventro-suspensio-uteri and ventro-fixatio-uteri leave an exceedingly small field, indeed, for all other major operations in the treatment of the posterior variety of uterine displacements. After employing them in a few hundred cases and resorting to other operations in a smaller number of cases, the writer is forced to this deduction.

As ventrofixation and ventrosuspension are to-day practiced their difference is only one of degree. It is simply a matter of combat between the resisting property of the new ligament or attachment and the forces combined against it. The habits, customs, mode of living and other conditions in the lives of the patients have a very strong bearing upon the results of these operations. And the conditions vary from ventrosuspension for mild retroversion to firm ventrofixation for exaggerated uterine prolapse.

History.—Attachment of the uterus to the anterior abdominal wall by means of suture was done thirty years ago. Dumoret¹ says that Koeberle first did hysterectomy in 1869 for retrodeviation, and that Kaltenbach fixed the uterus to the abdominal wall in 1876 for prolapsus uteri. In 1877 Koeberle² removed the uterine appendages, raised the uterus from Douglas' pouch, and successfully sewed the appendage stumps into the abdominal incision. In his most excellent paper on this subject, Charles Carroll Lee³ says: "In February, 1880, Mr. Lawson Tait operated on a case of ovaritis complicated by persistent retroflexion, in which after removing the appendages and while closing the wound, he passed a stitch through the fundus uteri and fastened it up to the abdominal wall." And further, of Tait's work, he quotes, "In another similar case of chronic interstitial ovaritis complicated by fundal metritis and retroversion he repeated the same experiment, April 9, 1880. Both patients recovered and in both the uterus remained in situ."

To Professor Olshausen is due the credit of first urging ventral attachment of the uterus for vicious displacements of that organ.

In his paper⁴, read in Berlin in September, 1886, he recited cases he had operated on and so strongly urged the operation that it was soon adopted by other Germans. One of his operations was for excessive prolapse and the other for retroflexion and adhesions. Both had resisted all known methods of treatment, and the operation in the case of prolapse failed as well. In the discussion of his paper it was found that a number of surgeons had been doing the same work. Bardenheuer had done several in 1880. Olshausen advised the use of several sutures to

* Presented to the Section on Obstetrics and Diseases of Women, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-8, 1886.

affix the uterus to the abdominal wall, passing them either through the cornua of the uterus or through the broad ligaments in such manner as to cause them to encircle the round ligament—and the Fallopian tube as well, if after the menopause. This multiple suturing was employed by all his immediate followers. Terrier² and many others sutured from the fundus down to the bladder in ventrofixation, using coarse buried silver wire and silkworm gut. Some surgeons in this country were at this time fixing the fundus to the abdominal wall when removing the appendages. The methods employed by these operators were nearly as many in number as were the surgeons operating, so that for seventeen years ventrofixation, primary and secondary, was practiced to a greater or less extent, and all these operations had in view the firm permanent attachment of the uterus to the abdominal wall.

It remained for Dr. H. A. Kelly, in 1885, to devise an operation for temporary ventrofixation of the uterus that permits this organ to acquire its normal mobility, and position or plane in the pelvis, thus removing the feature that caused trouble in the pregnant state. This operation was correctly named by him "Ventrosuspensio uteri." Even here considerable modification has been made by him regarding the points of the uterus to be attached to the abdominal wall. The plan he has finally adopted is to pass the sutures through the posterior wall of the uterus slightly below the level of the junction of the round ligaments and uterus. The writer believes this to be the best possible position. The result is that the uterus, after some months—the time varying according to the degree of primary fixation and the future conduct of the patient—drops downward to its normal distance from the abdominal wall and remains attached by a strong ligamentous cord. Kelly says: "The distance between the uterus and the anterior abdominal wall is about one or one and a half inches. The organ is attached by a strong fibrous cord which contains the sutures close to the abdominal wall." He objects to passing the sutures to much depth in the uterine wall, but this point is not followed by all operators.

The writer has been anxious to have this new cord microscopically examined and a suitable case presented itself last year. Dr. Kelly had operated for "falling of the womb," as the patient expressed it, in 1894, and I had to do a section for other conditions four years later. The case history is as follows:

Mrs. A., white, 28 years of age, living apart from her husband and in very bad company, consulted me in October, 1898, offering the statement that she had bad health, said to be due to falling of the womb, and had been operated by Dr. Kelly in 1894, he doing some kind of abdominal operation. One year later she had a child without unusual difficulty and remained well until less than a year ago. She admitted having lived a rather fast life during the past year and had suffered from pelvic trouble, which had confined her to bed a considerable part of the past two months. Upon her person were found a hypodermic syringe and several morphia tablets, the admission was secured of her being addicted to taking grain doses of that drug, self-administered with the syringe. On her abdomen, just above the pubes, was found a scar of a former median incision about two inches in length, and an examination revealed a large fluctuating mass filling the pelvis. Operation was done October 24, 1898, assisted by Dr. W. C. Borden, major and surgeon, U. S. A. Double pus-tubes were removed, and cystic ovaries, severely lacerated in

separating their adhesions, were also removed. The section was made through the right rectus muscle and when the pelvic contents were exposed to view about the first structure to attract my attention was a round, red cord about one-eighth of an inch in diameter and about two inches long, attached to the uterus, approximately half an inch below and the same distance to the right of the junction of the uterus and left Fallopian tube, and to the lower end of the scar of the former abdominal section. This structure, undoubtedly the result of a former ventral attachment of the uterus to the abdominal wall, was continued through the parietal peritoneum into the fascia. It was removed for examination and at the ends a piece of the uterus and of the abdominal wall. The wounds in the uterus and belly wall were sutured and ventrofixation done. Dr. Borden took the specimen for examination and his report follows. Dr. Kelly has since advised me that his operation was ventrosuspension:

Macroscopic Appearance.—The ligament was 4 cm. long, of greatest diameter at the ends, the center being about 3 cm. in diameter.

Microscopic Appearance.—Longitudinal and transverse sections showed an exterior peritoneal covering, subperitoneal connective and adipose tissue, central bands of connective tissue and blood-vessels.

The peritoneal covering resembled in every way the serous coat of the peritoneum. The subserous connective and adipose tissues were small in amount and extended inward between the central bundles of connective tissue. Small blood-vessels ramified in this connective tissue. The major part of the interior of the ligament was made up of quite large, longitudinally disposed bands of white fibrous tissue, with longitudinally placed, spindle-shaped nuclei. No nonstriated muscle fibers could be discovered.

I was disappointed that a few fibers of involuntary muscle were not found in the uterine end of the ligament—not alone that there was some use for it in this ligament, for the permanency of the structure would be more likely with a few bundles of muscular tissue, but during the latter months of pregnancy its yielding would be more satisfactory, as would its involution during the same change in the uterus. As this operation is comparatively an experiment we do not yet know its results after a long term of years. The ligament is not like the others of the uterus. In some cases it has been found to have reached the length of several inches within the first two years after operation. In these instances, however, the operation was probably abused, as the ligamentation of the uterus or the pelvic floor was very faulty and such faults were not corrected. In this way improper cases were selected for this operation, and the selection and not the operation was faulty. Such cases, nevertheless, serve to demonstrate the stretching property of this ligament—a property not relatively compensated for by its elasticity. It is by no means certain that it returns to its former dimensions after full-term labor. In a few cases we have found it has done so and in the one herein reported it had not suffered by the labor of pregnancy. In some others we have found it quite slack after labor. However, its use is not for all time, and often, no doubt, its existence is necessary for but a few months, the natural uterine supports regaining their function in the meantime. The absence of muscular tissue from the suspensio-uteri ligament is, probably due to that kind of tissue having greater resisting power than fibrous tissue. As the operation is, properly performed the parietal peritoneum and a certain amount of the fascia are sutured to the serous covering of the uterus, the sutures passing slightly into the muscular tissue of that organ.

These sutures are constantly pulled downward, and

the abdominal attachment gradually yields, thus forming the structure known as a new ligament. The uterine muscular tissue does not yield to the continuous tension, and consequently none of it enters into the formation of this cord. The inclusion of a very small amount of the muscular tissue of the recti abdominales in the fixation sutures would convert the structure of this ligament to nearly that of the normal ones of the uterus. I am by no means sure that this is a reliable procedure, or would be at first, but comparative permanency of the ligament would be insured in this way, and its utility would be prolonged to any desired extent. During the past few months the author has adopted this plan in a number of cases, one of which was in early pregnancy and in danger of abortion from posterior displacement with fixation.

BIBLIOGRAPHY.

1. Dumoret: *Laparo-hysteroecie*. Thèse, Paris, 1899, p. 16.
2. Billroth and Lücke: *Handbuch der Frauen Krankheiten*, Stuttgart, 1885, Bd. 1, p. 67.
3. Lee: *American Journal of Obstetrics*, 1888, xxi, 1249-56.
4. Oehausen: *Ueber Ventrals operation bei Prolapsus und Retroversio* (text).
5. Terrier: *Revue de Chir.*, Paris, 1889, ix, 185-204.

CHOLECYSTECTOMY.*

BY CLINTON CUSHING, M.D.

WASHINGTON, D. C.

For the purpose of this paper it will be assumed that the gall-bladder is not necessary to the health or well-being of the individual, for many cases are now upon record where the gall-bladder has been removed and the patients remain in perfect health.

That this should be so is quite reasonable when the anatomy and physiology of the bile passages are examined. The liver secretes in a person of average size about forty-two ounces of bile in twenty-four hours, or in other words, as much bile as urine. This bile passes off into the pylorus through the hepatic and common ducts, while a very small quantity, possibly half an ounce, backs through the cystic duct into the gall-bladder. So far as I am aware, no one has shown that the gall-bladder performs any physiologic function.

Bireh and Sprong report, in the *Journal of Physiology*, that in two patients upon whom the operation of cholecystotomy had been performed, a fistula forming as a result of the operation in each case, they were able to collect what appeared to be the normal secretion of the gall-bladder. In amount the secretion was something over 20 c.c. in twenty-four hours; it is usually quite clear and contained no bile at all, owing to the occlusion of the cystic duct.

The reaction was distinctly alkaline, and the exhaustive chemical examination showed that the secretion of the gall-bladder contains no bile salts, or biliary pigments. Physiologically it was shown not to have any diastatic or emulsifying action.

It cannot, therefore, be of any digestive value. On the contrary, in certain animals—the horse, the deer, and the elephant—the gall-bladder is normally absent. It would appear then, that, like the vermiform appendix, whatever may have been the importance of the gall-bladder in the animal economy, evolution has so altered its function as to make it no longer necessary.

My first cholecystotomy was made fifteen years ago, and was done in the usual manner; the gall-bladder enlarged, inflamed, and bound down by adhesions was, after separation of adhesions, drawn up to the abdominal incision and stitched there; a small handful of gall-

stones were removed through an incision in the bladder, an inch in length; a drainage-tube was introduced and recovery was uneventful.

At the end of two years a return of the symptoms necessitated the reopening of the abdomen, the removal of more gall-stones and the removal of the gall-bladder itself; after which the patient remained well. In all my other operations for cholelithiasis, six in number, I have removed the gall-bladder by ligating the cystic duct, removing the bladder, and treating the stump as after removing the appendix vermiformis. All made easy recoveries, except one, who had a slight biliary fistula for ten days, and which closed without trouble. So far as I have been able to follow the histories of these cases, subsequent to the operations, no untoward symptoms have developed, except one, a woman over 50 years of age, on whom I operated in January, 1898. I recently received a letter from her, detailing her symptoms, and it is probable that malignant disease is developing in the region of the liver. Should this prove to be so, it is doubtless a coincidence.

The indications for a surgical operation upon the gall-bladder or the biliary passages has been very ably set forth by Mayo Robson, in the *London Lancet*, for May, 1897. He says: 1, "recurring attacks of biliary colic, with or without jaundice, and whether the gall-bladder is enlarged or not;" 2, "enlargement of the gall-bladder, whether there be pain or not;" 3, "persistent jaundice which was preceded or accompanied by pain in the region of the gall-bladder, with or without paroxysms resembling ague;" 4, "empyema of gall-bladder, or peritonitis in gall-bladder region;" 5, "abscess in region of gall-bladder;" 6, "rupture, fistula or wounds of gall-bladder."

In any one of the above conditions where there is serious danger to life, or marked suffering, the question of an exploratory incision should be considered, for a positive diagnosis is difficult, or impossible, in a large proportion of cases, until the abdomen is opened, for the gall-bladder, unless decidedly enlarged, cannot be palpated in its normal position.

The diagnosis of a diseased gall-bladder, then, will depend upon the existence of local pain and tenderness, reflex pain in right shoulder-blade, coupled with the existence of gastric troubles and jaundice, where there is obstruction of the hepatic, or the common duct of the liver. As all are aware, gall-stones may remain in the gall-bladder for years without producing any symptoms, but I doubt not they cause cholecystitis much oftener than is generally believed. What leads me to this conclusion is the fact that in two of my seven cases, the bladder walls were greatly thickened; in one case fully one-fourth of an inch, and contracted firmly about a row of gall-stones up the center like peas in a pod. In another, in addition to thirty gall-stones, the bladder was so distended by the secretions of the viscus that it felt like a piece of wood and was of a dark red color. In still another, in addition to firm adhesions, clearly the result of peritonitis, there was a considerable deposit of cheesy material on the adjacent peritoneal surface.

In two of the cases the abdominal incision was partly exploratory. Both patients had been under careful and intelligent management for several months, but had irregular fever and chills, gastric pain, indigestion and marked emaciation; the symptoms finally leading to the conclusion that there was somewhere in the body a collection of pus, probably about the pelvis. In both cases the abdomen was opened below the umbilicus, and with the hand and arm in the abdominal cavity, every organ was thoroughly and carefully examined. Noth-

*Presented to the Section on Obstetrics and Diseases of Women, at the Fifteenth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

ing abnormal was found except the cholelithiasis and some local peritonitis. The opening below the umbilicus was closed and an opening made parallel with the lower edge of the ribs, and the gall-bladder with its contents removed. The fever and other symptoms at once disappeared, and the patient afterward remained well.

If, then, the gall-bladder is so seriously diseased as to warrant a surgical operation for its relief, it is better practice to remove it in toto, than to leave it as a place for the further accumulation of gall-stones, or as a point for the setting up of new inflammations. Like the vermiform appendix, the gall-bladder is a cul-de-sac, and having been once diseased, if the patient lives, is likely to become diseased again, unless removed; indeed, the same argument applied to the Fallopian tube, for when the fimbriated extremity of the tube becomes closed by inflammation, it constitutes a cul-de-sac opening into the uterus and is prone to the formation of pus, or mucopurulent material.

When we open the abdomen for the relief of salpingitis, a pyosalpinx, or an appendicitis, do we leave the diseased organs in situ? Certainly not. There is one condition in which the gall-bladder should not be removed. If for any reason the common duct or the hepatic duct below the junction of the cystic duct becomes strictured, or obstructed by morbid growths, or otherwise, so as to prevent the passage of the bile into the intestines, then it might be possible to attach the gall-bladder to the pylorus and thus utilize the cystic duct and the gall-bladder to carry the bile into the intestine.

Correspondence.

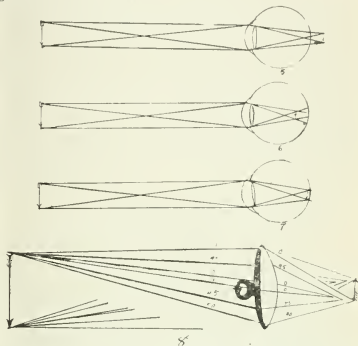
Misleading Statements and Illustrations in School Physiologies, Physics, and in Text-Books on Diseases of the Eye.

KANSAS CITY, July 21, 1899.

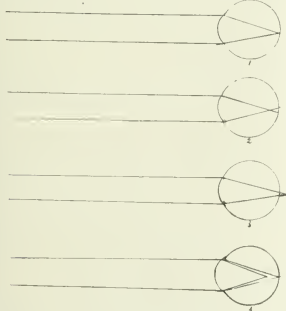
To the Editor.—If parallel rays of light focus on the retina and the image is inverted, why is the image not reinverted in myopia where the rays cross before they reach the retina; does the image of objects focus at a point as it seems to do in Figure 1; and if the crystalline lens brings rays of light to a focus on

the manner in which rays of light reach the retina, and many that are incorrect.

As far as I know Figures 1, 2, 3 and 4 are the ones used the world over to illustrate errors of refraction, and they are all incorrectly drawn, and consequently misleading to teachers and students. I am of the opinion that the above illustrations ought not to appear in any text-book. If errors of refraction were represented as in Figures 5, 6, 7 and 8, writers would not be tempted to make use of the expression that parallel rays of light focus on the retina.

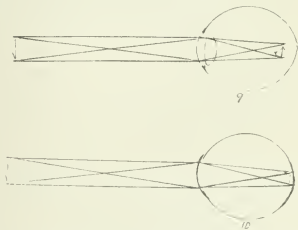


It can be readily seen by such illustrations that parallel rays do not focus on the retina, that the image is always inverted, no matter what the refractive error may be, and that the images of objects are not focused at a point, as represented in Figure 1. It would be well to represent astigmatism, as in Figure 8, where rays of light which strike the cornea in the perpendicular meridian are focused the farthest back, and those striking the horizontal meridian would be focused nearest to the cornea while those striking the oblique meridian, lines marked 45, would focus between the two points. Students would not then get the impression that in astigmatism rays of light focus at two points, but between two points.



the retina where would they focus if the lens were removed, and would the image be inverted? These are the questions students ask after seeing the statements and illustrations in the various text-books.

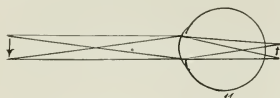
Most text-books contain an illustration correctly showing



Rays of light should be represented as coming to a focus from the cornea instead of the lens. It is more correct to represent it so, for it requires a lens of 40 diopters to bring rays of light to a focus at one inch, and the lens has only the converging power of 10 diopters. Readers would not then be led to think that rays were scarcely refracted at all, when the lens was removed. Would it not be well to represent a highly myopic eye and one where the lens had been removed, as in Figures 9 and 10, to show that in such eyes rays of light focus near the retina where the lens is removed?

Figure 11 represents rays of light coming to a focus at a

little more than an eighth of an inch back of the retina in a normal eye where the lens has been removed—which is the condition after a cataract has been extracted.



The text-books on physiology and elementary physics, used in the public schools, also teach that parallel rays of light focus on the retina in the normal eye, in front of the retina in myopia and behind it in hyperopia. Students believe the statements in their text-books to be true and the illustrations correctly drawn. They can come to no conclusion other than that the images of objects are made to focus at a point, and, according to the illustrations, the image is sometimes inverted on the retina and sometimes not. If writers of text-books were more accurate in their illustrations, which necessitates incorrect statements to describe them, we would not teach so much that is not true.

F. G. MURPHY, M.D.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Chicago Medical Recorder, June.

- 1.—*Devient Manifestations of Epilepsy. Sanger Brown.
- 2.—*Adherent Plaques. Charles B. Reed.
- 3.—*Inversio Uteri Complicating Placenta Previa, Etiology and Mechanism Considered. Rudolph W. Holmes.
- 4.—*Pathology of Hip-joint Disease. F. N. Walls.
- 5.—*Diagnosis of Hip-joint Disease. F. S. Coolidge.
- 6.—*Hip-joint Tuberculosis: Its Surgical Aspect. L. L. McArthur.
- 7.—*Mechanical Treatment of Hip-joint Disease. John Ridlon.
- 8.—*Case of Lupus Erythematosus. L. C. Pardee.
- 9.—*Chronic Empyema of the Sphenoid Sinus without Involvement of Neighboring Sinuses. George E. Shambaugh.
- 10.—*Cerebrospinal Meningitis Treated by Lumbar Puncture. William Cuthbertson.
- 11.—*Nasal Inhalation of Oxygen Gas. Emil G. Beck.
- 12.—*Two Cases of Senile Prostatic Enlargement Cured by Galvano-caustic Radical Treatment. F. Kraissl.
- 13.—*Clinical Notes on Glyco-Thymolin. Hurlbut Rolzer.

Journal of the Boston Society of Medical Sciences, June 20.

- 14.—*Preliminary Study of Streptococci Isolated from Throat Cultures from Patients ill with Scarlet Fever. Calvin G. Page.
- 15.—*Preliminary Note on Effects of Changes in External Temperature on Circulation of Blood in Skin. Theodore Hough and Bertha L. Ballantyne.
- 16.—*Bacteria and Dental Caries (Preliminary Report). S. A. Hopkins.
- 17.—*Some Devices for Cultivation of Anaerobic Bacteria in Fluid Media without Use of Inert Gases. Theobald Smith.
- 18.—*Preliminary Report on Diplococcus of Scarlet Fever (Class). Calvin G. Page.

Laryngoscope (St. Louis), July.

- 19.—*Edema of Nasal Mucous Membrane and Edematous Occlusion of Nasal Passages. H. Gradle.
- 20.—*Report of Interesting Case of Dyspnea in an Adult. Walter B. Johnson.
- 21.—*Hemorrhage Following Adenoid Operations, W. A. Martin.
- 22.—*Case of Temporal Abscess Drained Through Attic after Ossiclectomy and Curettement. Hamilton Stillson.
- 23.—*Multiple Rupture of Membrana Tympani. Kate Overacker.

Therapeutic Gazette (Detroit), July 15.

- 24.—*Intermediate Altitude for Consumptive Invalid. B. P. Anderson.
- 25.—*Hydrotherapy in Treatment of Insomnia. Irwin H. Haines.
- 26.—*Dangers of Hydrogen Dioxide in Surgery. George W. Spencer.
- 27.—*Organotherapy in Gynecology. W. A. Newman Dorland.
- 28.—*Treatment of Pneumonia. H. A. Hare.
- 29.—*Evolution of Modern Therapy. Simon Baruch.

Medical Bulletin (Phila.), July.

- 30.—*Importance of Recognition of Certain Blood-Changes, and Especially Toxemia, in Our Therapeutics. John V. Shoemaker.
- 31.—*Cleveland Journal of Medicine, July.
- 32.—*Intestinal Obstruction Following Abdominal Section either Immediately or Remotely. John B. Deaver.
- 33.—*Spina Bifida. J. J. Thomas.
- 34.—*Malarial Fever in an Infant Ten and a Half Months Old. F. S. Clark.
- 35.—*Autipretics in Children. J. B. McGee.
- 36.—*Case of Hysteria. E. O. Leberman.

Colorado Medical Journal (Denver), July.

- 37.—*Address before the Medical Society of Colorado. W. A. Campbell.
- 38.—*Prevention of Certain Communicable Diseases in Colorado. G. E. Tyler.

Medical Examiner (N. Y.), July.

- 39.—*Plea for Under-Graduate Instruction in Making Life-Insurance Examinations. Brandreth Symonds.

- 39.—*Relation of Build (i. e., Height and Weight) to Longevity. Geo. R. Shepherd.

Medical Times and Register (Phila.), July.

- 40.—*Orthopedies for General Practitioner. E. A. Tracy.
- 41.—*Bilious Diseases: What are They, and Why So Called? C. F. Markle. Merck's Archives (N. Y.), July.
- 42.—*Importance of Internal Remedies in General Surgery. Thomas H. Manley.
- 43.—*Thyroid Gland in Obesity. Horatio C. Wood, Jr.
- 44.—*Usefulness of Potassium Iodid in Cerebrospinal Meningitis. H. A. Moody.
- 45.—*United States Pharmacopoeia. John Forrest.

Physician and Surgeon (Detroit and Ann Arbor), June.

- 46.—*Value of Complete Diagnosis. Fritz Maass.
- 47.—*Symptomatology of Puerperal Sepsis. Joseph B. Whiney.
- 48.—*Medical Treatment of Puerperal Sepsis, with Especial Reference to Serumtherapy. Howard W. Longyear.
- 49.—*Surgical Treatment of Puerperal Sepsis. A. W. Alvord.
- 50.—*Early Diagnosis and Treatment of Paretic Dementia. Irwin H. Neff.
- 51.—*Epidemic Influenza. Ernest L. Shurly.
- 52.—*Pneumonia. Clifford Kirkpatrick.
- 53.—*Monstrosities and Malformations: Are They of Importance to the General Practitioner. N. L. Andrus.

Journal of Medicine and Science (Portland, Me.), July.

- 54.—*Blood Examinations as an Aid to Diagnosis, with Case of Pernicious Anemia. B. L. Bryant.
- 55.—*Certain Landmarks in Progress of Modern Medicine. Franklin Staples.
- 56.—*Massotherapy. E. H. Judkins.
- 57.—*Locomotor Ataxia: Its Early Diagnosis. Wm. R. A. Wilson.
- 58.—*Suggestive Therapeutics. E. M. Eckard.

St. Louis Clinique, July.

- 59.—*Medical Issues of the War. Thomas Osmond Summers.
- 60.—*Skin Grafting—New Process. J. L. Wiggins.
- 61.—*Essentials in Chemistry: Table of Solubility of Salts. C. W. Lillie. Bulletin of Cleveland General Hospital, April.
- 62.—*Extra-Uterine Pregnancy—Four Cases Operated Successfully within Less than Four Weeks. Marcus Rosenwasser.
- 63.—*Why Does the Surgeon Fail to find the Appendix? N. Stone Scott.
- 64.—*Newer Teaching About Gout and Uric Acid Diathesis: Their Diagnosis. Martin Friedrich.
- 65.—*Porro-Cesarean Operation—Recovery of Both Mother and Child. George W. Grilo.
- 66.—*Case of Bromoform Poisoning. J. C. McMichael.
- 67.—*Case of Bezold's Mastoiditis. Wm. E. Shackleton.
- 68.—*New Operation for Removal of Hemorrhoids. Thos. Chas. Martin.
- 69.—*Two New Stains for Gonococcus. R. G. Schnee.
- 70.—*Surgical Treatment of Pott's Disease. William E. Wirt.
- 71.—*Hysteria. H. C. Eymann.

Medical Monograph (Topeka, Kan.), July 15.

- 72.—*Functional Diseases of the Heart. S. S. Glasscock.
- 73.—*Rheumatism and Valvular Diseases of Heart. John M. Bell.
- 74.—*Paroxysmal Tachycardia. Albert S. Mackey.
- 75.—*Cardiac Injuries. Hal C. Wyman.
- 76.—*Fatty Heart. J. H. Van Eman.
- 77.—*Sounds in Determination of Cardiac Pathology. Wm. E. McVey.

Texas Medical Journal (Austin), July.

- 78.—*Intestinal Perforations from Within by Foreign Bodies. B. E. Hadra.
- 79.—*Some Tonsil Clippings. R. S. Carroll.

Medical Mirror (St. Louis), July.

- 80.—*President's Address to American Medical Association. Jos. M. Mathews.
- 81.—*Vagina, the Byron Robinson.
- 82.—*Grip. C. D. Fitzgibbon.
- 83.—*Trials: Report of Case. J. L. Early.
- 84.—*Report of Case of Cerebrospinal Meningitis. L. C. Royster.
- 85.—*Deviations of Nasal Septum and Its Operative Treatment. Wm. B. Shields.
- 86.—*Acute Dysentery. J. T. Anderson.
- 87.—*Scarlatina. C. R. Day.

St. Louis Medical and Surgical Journal, July.

- 88.—*Experimental Study of Children, More Especially of Washington School Children. Arthur Macdonald.

American Practitioner and News (Louisville), June 15.

- 89.—*Peculiarities in Heart Affections in Children. Philip F. Barbour.
- 90.—*Etiology, Diagnosis and Treatment of Hepatic Abscess. H. Horace Grant.
- 91.—*Peritonitis from Clinical Standpoint. August Sebachner.

Pediatrics (N. Y.), July 15.

- 92.—*Dry Antitoxin—Clinical Study of Its Value in Diphtheria. Louis Fischer.
- 93.—*Hip Disease: Cause, Diagnosis and Treatment. Ap Morgan Vance.
- 94.—*Rumination in a Boy of 9 Years. Luther C. Peter.
- 95.—*Case of Generalized Vaccinia. James Tyson.

Cincinnati Lancet-Clinic, July 22.

- 96.—*Duodenotomy for Gastric Carcinoma. Louis J. Feid.
- 97.—*Treatment of Certain Morbid Conditions. Robert C. Kenner.
- 98.—*The Fever Thermometer. Geo. J. Monroe.

Medical Review (St. Louis), July 22.

- 99.—*Our Work and Its Limitations. Edward C. Runge.

Medical Record (N. Y.), July 22.

- 100.—*Liquid Air: Its Application in Medicine and Surgery. A. Campbell White.

- 101.—*Shock in Modern Surgery. Geo. F. Shraday.
 102.—*Hemostasis in Intrapelvic Surgery. A. C. Heffenger.
 103.—*Exercise Treatment in Tabes Dorsalis. Alfred Wiener.
 104.—*Hydrophobia a Disease Easily Cured. Beverly O. Kinnear.
 105.—*Case of Complete Laryngectomy for Epithelioma—Recovery. F. C. Ard.
 106.—*Intestinal Obstruction in New-born Child. G. H. Carter.
 Medical News (N. Y.), July 22.
 107.—*Serum Treatment and Its Results. Hermann M. Bigas.
 108.—*Light and Air in Treatment of Consumption in Colorado. Charles Fox Gardiner.
 109.—*Arrest of Development; Spina Bifida and Cleft Palate. W. A. McFarlane.
 New York Medical Journal, July 22.
 110.—*A Study of Delirium. William Hirsch.
 111.—*Importance of Early Diagnosis in Locomotor Ataxia, as Affected by the Newer Pathology. William B. Pritchard.
 112.—*Properties of Buffalo Lithia Water. John V. Shoemaker.
 113.—*Remarks Based on a Further Experience with Calomel in Diphtheria. L. D. Judd.
 114.—*Administration of Atropin in Epilepsy. F. L. Wachenheim.
 115.—*Case of Typhoid and Malarial Fevers. W. H. German.
 Maryland Medical Journal (Baltimore), July 22.
 116.—*European Medicine About 1729. A. Jacobi.
 Boston Medical and Surgical Journal, July 20.
 117.—*Not the Disease Only, but Also the Man. The Shattuck Lecture. Jas. T. Putnam.
 118.—*The "Right-angle" Continuous Intestinal Suture. Hayward W. Cushing.
 119.—*Examination of Stained Specimens of Blood in Its Application to Clinical Work. Henry F. Howes.

AMERICAN.

- 1.—See abstract in JOURNAL, March 25, p. 660.
 2.—This paper was printed in full in the JOURNAL of May 6.
 3.—See abstract in JOURNAL, May 20, p. 1114.
 4.—Ibid, May 27, p. 1178.
 5.—Ibid.
 6.—Ibid, p. 1178; June 24, p. 1439.
 7.—Ibid, May 27, p. 1178.
 8. **Lupus Erythematosus.**—After some remarks on the pathology of this disorder, Pardee describes a case in detail and the experiment of inoculating, with a piece of diseased skin, a guinea-pig which was allowed to live thirty-five days and then killed. It showed no traces of tuberculosis in any of its organs.
 9. **Lumbar Puncture in Cerebrospinal Meningitis.**—Cuthbertson reports three cases of cerebrospinal meningitis occurring in the First Illinois Cavalry, during the late war. In two cases lumbar puncture was performed and the patients survived. There were 6 cases; 3 were punctured and recovered; three were not and succumbed. He thinks the facts, so far as they go, speak strongly for the therapeutic value of this procedure.
 11. **Nasal Inhalations of Oxygen Gas.**—Beck describes a method of giving oxygen by nasal inhalations, which he claims has great advantages over the ordinary method of inhaling it by the mouth. A patient who underwent this treatment also remarked that inhalation in the recumbent position was much easier, and its invigorating effect much more quickly obtained.
 14. **Streptococci in Scarlatina.**—Page has made cultures from the throats of twenty-four scarlet fever patients, and found a streptococcus in the primary cultures in all cases but one, but failed to isolate it in five cases. The principal point in his paper is the variation they show in acid products from sugar, which he thinks may be of importance in separating the varieties of this organism which have such different actions on the system and the existence of which prejudices the value of antistreptococcus serum.
 15. **Effects of External Temperature on Circulation.**—The authors conclude their preliminary notes as follows: The results of our experiments would seem to show that at times there is a rise of capillary pressure going along with arterial constriction—effects of marked cold—and that at other times capillary pressure remains constant or shows only a slight rise when there is pronounced arterial dilation. In other words, capillary pressure is dependent on some other factor or factors than the amount of arterial tone. I should like to suggest that all our results are explained by supposing that the muscular coat of the small veins may be the other factor in question; if this constricts and dilates with the constriction and dilation of the arterioles we could have fairly constant capillary pressure with great variations in the amount of blood flowing through an organ; the inconsiderable changes in capil-

lary pressure, which at times accompany the marked arterial dilation produced by exposure to heat, would be because of concomitant venous dilation, which permits an easier egress of blood from the capillary region: the rise of capillary pressure, which at times accompanies the arterial constriction produced by exposure to marked cold, would be due to the excessive concomitant constriction of the venules, which hinders egress of blood from the capillary region. May it not be that while the muscular coat of the small arteries regulates the amount of blood flowing to an organ, the capillary pressure is regulated by the simultaneous action of the muscles of both arterioles and veins?

18. **Diplococcus of Scarlet Fever.**—In this preliminary report Page states that he has made cultures from eight more cases of scarlet fever and in five of these found a large diplococcus resembling that described by Class. He is confident that he saw a similar large one in a number of primary cultures of the twenty-four cases above reported. He has attempted to cultivate this organism in agar-agar mixed with garden earth, as suggested by Class, but his results are not yet conclusive. He remarks that if the organism described by Class proves to be the cause of scarlet fever, numberless problems suggest themselves to be worked out. An important one will be the effect of increasing percentages of carbolic acid in the culture-media on the virulence of the organism, to see if there is any rational basis for treatment of the disease by large doses of carbolic acid—5 to 30 grains per day in five doses, freely diluted—as recommended by Dr. A. Wigglesworth of Liverpool.

19. **Edema of Nasal Mucosa.**—Noticing first the slight reference to the subject in rhinologic literature, Gradle reports three cases of edema of the nasal mucosa involving the entire nasal lining and absolutely occluding the passage. The cases he reports are the only ones he has met with in many thousand patients, and in all three it developed after an acute inflammatory attack; whether a simple coryza or influenza could not be determined. No local lesions existed, to which to attribute it. In none of the three was there any suppuration. The treatment was with cocain tampons, applications of silver nitrate, carbol-glycerin, sprays of Seiler's solution, of menthol vaselin. In one case a vascular hypertrophy was removed with a snare. All three cases were cured, though some had been of rather long duration.

20. **Dyspnea.**—Johnson reports a case of obstinate dyspnea from laryngitis and tracheitis, of unusual severity, relieved by intubation and steam inhalations with lime water. Another case is reported that occurred in the practice of another physician. Both were young women about 26 years old, and each was six months pregnant.

21. **Hemorrhage Following Adenoid Removals.**—Martin reports three cases for the benefit of statisticians, as he states, of severe hemorrhage from removal of adenoid growths. He had been operating on these growths for seven years before he had any such unpleasant experiences, and had begun to think that his methods were more careful and better than those of physicians who had had them.

24. **Moderate Altitude in Phthisis.**—In this paper Anderson discusses the advantages of different degrees of altitude for consumptives, the high altitudes having, as has been recognized, superior advantage to the average individual. In many cases, however, the expected relief from the change does not occur, and he has found with a certain proportion of this class that benefit has followed change to a lower altitude; for a number of years he has urged such cases to temporarily go to an altitude of from 3000 to 4000 feet above sea-level and remain until improved. His attention was called some eight years since to the Mesilla Valley in New Mexico, and he has been much aided by his acquaintance with this locality. There are combined the important essentials of a maximum of sunshine and dry air together with only a moderate elevation. He finds that many patients, after spending two or three winters in this valley, find themselves able to endure the higher altitude and to continue their improvement there. It is impossible, he admits, to absolutely foretell the results in all cases and he notes a striking case where, against all his prophesying, the patient apparently recovered and died years later of a different disease.

25. **Hydrotherapy in Insomnia.**—Hance reports five cases of insomnia treated by hydrotherapy, in the form of hot-air baths, circular needle spray, douches and static electricity, with successful results. He thinks that the static electricity has an important part in the treatment, and that hydrotherapy and its together are more powerful and beneficial than either one separately.

26. See abstract in *JOURNAL*, April 29, p. 941.

27. **Organotherapy in Gynecology.**—After noticing some of the reports on facts in the literature of gynecology of thyroid treatment, Dorland reports six cases in which this medication was used. He concludes that the thyroid, in addition to its general effect on metabolism, exerts an inhibitory action on the pelvic genital organs, and the uterus in particular, especially marked in this there is a retardation of hemorrhage from the uterine mucosa, which is directly antagonistic to the effect of ovarian secretions. Thyroid therapy is especially indicated in hemorrhagic affections of the uterus and all forms of pelvic congestion, notably in uterine fibromata, hemorrhagic endometritis, metropausal hemorrhages and chronic tubal diseases. The best results are to be expected in fibromata and recently developed pathologic conditions. The more chronic cases are more resistant. It also produces an increase in tissue changes of the mammary glands, and is therefore indicated in cases of insufficient lactation. Owing to the tendency to thyroid intoxication, it is well to discontinue the use of the drug for a week or ten days, at intervals during the course of treatment. Thyroid treatment is contraindicated in tuberculosis, which it seems to stimulate, and in serious heart disease, and it should be discontinued on the appearance of tachycardia. He also reviews the facts as to the use of mammary and parotid glands. Shober has reported a decrease in the size of tumors treated with mammary gland, which he thinks acts on the uterine muscles and connective tissues somewhat similarly to ergot. It has never given rise, in his experience, to any unpleasant symptoms. He has also had gratifying results in the use of parotid gland in ovarian disorders, inflammation, congestion, neuralgia, etc.

28. **Treatment of Pneumonia.**—In treating pneumonia Hare divides the disease into three stages and asks: "What means shall we employ in the onset? As regards the use of sedatives, they are applicable to but few, but with robust individuals he would use hot foot-baths and compresses and give veratrum viride tincture in 3-minim doses every fifteen minutes for three doses, and some Dover's powder to allay cough and pain. All depressing measures, however, should be discontinued after the first twelve hours. As regards venesection, it may be useful in some cases. It is a rather severe treatment and its effects are too permanent to make it commonly advisable. When consolidation has taken place, four conditions are to be looked after: 1. Fever, which he would combat by cold sponging, ice-bags over heart and head. Antipyretic drugs, he thinks, are seldom needful; cold is sufficient. 2. The second indication is to aid the circulation if it needs it. Digitalis has been our standby, but should be given rightly. Its action is so slow that in pressing cases 10 to 20 minims of the tincture or 1 to 2 minims of a physiologically tested and standardized normal liquid digitalis should be given hypodermically, and then need not be repeated for many hours. If the pulse be gaseous and relaxed, 5 to 10 minim doses of belladonna may be useful, given every four or five hours. Strychnia, he thinks, often employed improperly, and if kept up causes more harm than good, though for combating sudden collapse it is invaluable, especially if combined with atropin. For prolonged collapse or tendency thereto, coea wine may be used. A good old brandy often agrees with patients of advanced age with feeble circulation. Nitroglycerin is invaluable if arterial tension is high; if low, it is useless, and in venous engorgement it is only a very indirect means of producing relief when a much better and more direct one is venesection. The value of oxygen gas is problematic. He uses it when respiration is difficult, and it generally seems to make the patient more comfortable: it may be partly by the mental effect. The stage of resolution is not discussed, as much had already been said on the subject. In conclusion, he remarks on the necessity of treating the cases individually; no one plan can be invariably followed.

30.—This paper was printed in *THE JOURNAL* of June 3.

31.—See abstract in *JOURNAL*, July 15, p. 164.

33. **Malaria in an Infant.**—Clark reports a case of malarial fever in an infant ten and a half months old. The case is illustrated with a diagram. Quinin was given by suppositories, after finding the parasite, 5 grains twice a day, but without effect. He then had to give the plain sulphate of quinin, 1 grain in fluid extract of licorice every two hours, beginning with 12 grains a day, and gradually reducing it until the temperature became normal. He asks how the child became infected, and suggests that it might have been from absorption from sewer gas by the milk.

42. **Internal Remedies in Surgery.**—Manley calls attention to the importance of recognizing the value of internal remedies as making it possible in some cases to avoid surgical operations. As a striking example of this he notices juvenile tuberculosis, affecting the joints, and shows that of late years not one operation is performed where formerly ten were for this condition. The use of the bitter tonics, cod-liver oil, preparations or combinations of mercury, iodine, phosphorus, creosote, salol, etc., have made this possible. While malignant disease still defies us, and surgery is in most cases a palliative, yet much can be done with local remedies. Many cancers have been thoroughly removed by escharotics. Venereal disease in nearly all its form yields often to internal remedies, and in many cases when the diagnosis is uncertain those latter both clear it and bring about a cure. Surgery cannot progress much farther, but there remains a wide chasm to be filled up in the domain of internal medicine.

43. **Thyroid Glands in Obesity.**—In this article Wood points out the usefulness of thyroid in reducing corpulence, and notes the objections, such as an occasional cardiac disorder. In most cases, however, there are no unpleasant effects from its use. The greatest disadvantage is the lack of permanence of its effects, and if we have succeeded in reducing the superfluous weight of an individual, the treatment must be continued by abstemious habits and regimen, a point on which the originator of the thyroid method, Yorke-Davies, laid great stress.

44. **Potassium Iodid in Cerebrospinal Meningitis.**—The apparent increase of cerebrospinal meningitis is noted by Moody, and he gives an account of several cases of the fulminant type and also of a local epidemic in which the iodine treatment recommended by Tanner was strikingly successful. His conclusions were as follows: In the fulminant or apoplectic form of cerebrospinal meningitis no known treatment offers any hope of cure. In the ordinary form, commonly known as "spotted fever," potassium iodid is the only drug which has shown any power to modify the disease. That drug should not be depended on alone, but any means known to therapeutics should be employed whenever it renders the patient more comfortable or aids him to resist the exhausting conditions of the disease. The contagion can, at least in some instances, be readily communicated to those exposed, provided the environment is the original focus of infection; the identity of environment is not apt to be found except at the point where the epidemic first appears. The disease is seldom communicated in any other locality than that first infected, but identity of sanitary conditions might be a source of danger of its further propagation. Finally, the writer does not consider the known influence of the iodid on absorption a sufficient explanation of its usefulness in the disease, but thinks it more likely that it either has some quality that acts as an antidote to the toxins secreted by the pathogenic organisms, or is unfavorable to their development.

45. **The United States Pharmacopœia.**—Forrest points out certain defects in the present edition of the "Pharmacopœia" in make-up, text, index, etc., and notices the propositions that have been offered by the committee on its revision.

46. **Value of Complete Diagnosis.**—Maass emphasizes the importance of a complete as compared to a simple correct diagnosis of the chief disorder, that is, taking in every possible condition of the patient that may complicate or affect the disease. His article is made up largely of cases in his experience, illustrating the advantage of thorough investigation.

47, 48 and 49. **Puerperal Sepsis.**—In this symposium on

puerperal sepsis, the symptomatology is discussed by Whinery, and he points out the possibility of either septic infection or a putrid intoxication, the latter being less grave than the former, and constituting about 75 per cent. of all cases. He suggests the value of blood examinations in dubious cases on account of not only the demonstration of microbes, but also the clinical data offered by the blood elements. In well-marked sepsis there is a diminution of red cells. In cases of moderate severity there is marked leucocytosis, which is not nearly so marked or is absent in mild and in very severe and rapid cases.

Longyear discusses the medical treatment, especially the use of serumtherapy with streptococci and other infections. His summary is as follows:

Local Treatment.—Early recognition and destruction of pseudomembrane by topical applications is of great importance. Iodin, carbolic acid and chloral mixture is a safe and efficient application for this purpose. The intrauterine douche, frequently applied, is of most value in the cases of infection unattended by the formation of a pseudomembrane, but is useful also in connection with local applications. The vaginal use of peroxid of hydrogen is useful in all forms of infection. Frequent packing of the vagina, previously dried, with iodoform gauze is especially useful in cases attended with pseudomembrane. Inspect infected cases daily with the speculum. Some uncomfortable surprises may thus be avoided, and the local treatment will be made understandingly.

General Medication.—Quinin in large doses twice daily; whisky and strychnin to support the heart, if indicated; nuclein and protnuclein in all cases; mercurial and saline cathartics at first in all cases, then as indicated: serumtherapy to be applied in all cases when the Klebs-Loeffler bacillus or the streptococcus can be demonstrated by bacteriologic examination to be present, and also in all other cases when such examination has not been made, but in which these specific varieties of infection are probably present. Streptococcus antitoxin serum is to be used persistently to prevent pus formation and symptoms of systemic infection, even if local symptoms and high temperature persist.

The surgical treatment is discussed by Alvord and, according to him, consists in thorough curetting of the cavity of the uterus followed by antiseptic irrigation and drainage. The use of Marmorek's serum is suggested for certain cases where complications have arisen, and, in case all these measures fail, the sole chance of life will be to perform hysterectomy.

50.—See abstract in *JOURNAL*, April 22, p. 876.

51.—*Ibid.*, February 25, p. 439.

54. **Blood Examinations.**—Bryant calls attention to the importance of blood examinations in various diseases, with leucocytosis or not, as an aid to diagnosis, and reports a case of pernicious anemia in which the diagnosis of typhoid was corrected in this way. The patient's red blood corpuscles had been reduced to 800,000, and the white to 4000. He rapidly recovered under the use of arsenic and bone marrow.

58. **Suggestive Therapeutics.**—Eckard reports four cases suffering from various pains and aches, treated by placebo, and believes that if these were used more we would discover more hysteria and use less morphia than we do.

60. **Skin Grafting.**—The method here advocated by Wiggins is the one suggested by Hodgen in 1871, of using a graft of the exuberant epidermic cells from the sole of the foot. The method as he reported it consisted of sprinkling the unprepared epidermic cells over the granulating surface. These suggestions were so completely ignored that Wiggins only learned of its existence after nearly completing this article. The method he advises is to have the foot prepared by a thorough scrubbing, and remove the outer layer of epidermis, which must necessarily be full of organisms. This is followed by bathing in strong bichlorid solution, and the foot is then covered with moist boric acid dressing overlaid with rubber tissue, which serves, by reason of heat and moisture, to loosen the deeper and more vitalized layer of cells. After twelve hours this dressing is removed and the surface thoroughly scraped with a dull knife. The cell mass thus obtained is placed in a mortar, which in turn is placed in a water-bath with a temperature of 110 to 115 F., and stirred until thoroughly desiccated. The object of this is: 1, to permit of trituration and to further separate particles, and, 2, to divest them of all moisture so as to influence

the adhesion of the cells to the moist surface of the ulcer, thus facilitating union by exosmosis. Where in the ordinary method we have a single graft, by this we may have 1000, and the chances of their living is increased. The dangers of this graft thus applied are: 1, excessive secretions of the surface detaching the particles; 2, insinuation of exudates between graft and granulation. To avoid these he either covers the granulated surface with perforated rubber tissue, or puts strips of this over the surface, dusted with the grafts, filling the center of the ulceration with strips of gauze and applying the ordinary dressings. Each of these methods has its advantage, the latter by fencing off the field from the secretions of other parts which are absorbed by the dressing, and the former by affording little islands of greater vascularity in the perforated spaces, thus affording the better chance of life for the new tissue. When the granulated surface is small, not covering more than 1½ or 2 inches, neither of the above methods is necessary. His results by this method have been most satisfactory.

63. **Failure to Find Appendix.**—Why surgeons fail to find the appendix is attributed by Scott to the previous occurrence of appendicitis obliterans totalis, rather than to any possible congenital absence of the part. He analyzes five cases, observed in the dead body, of reported congenital absence, and finds that in none of them was there such thorough examination made as would absolutely confirm the opinion that the appendix never existed.

64. **Gout and Uric Acid Diathesis.**—The theories of uric acid diathesis are here discussed, and the usual conclusion arrived at: that according to the best modern data we can now hold that uric acid is a physiologic product, and as such is indifferent; that when the system can no longer produce it the alloxur bases are formed, and that these bases are poisonous. The diagnosis of what we call uric acid diathesis is no longer guess work, as the examination of the urine and blood will show the characteristic changes. In the former the alloxur bodies are always increased, as they are in leucocytosis and leucemia. To differentiate from leucemia, a glance at a blood specimen is sufficient and blood examination is necessary to differentiate leucocytosis which may coexist with uric acid diathesis. In gout, the destructive metabolism of the nuclei of the cellular elements is morbidly increased, and the disintegrated nuclein is formed into uric acid as long as the organs for its formation are normal and the processes of oxygenation sufficient. We do not know, however, what produces this morbid destruction of the nuclei.

68. **Hemorrhoids.**—Martin describes an operation for painless removal of hemorrhoids by means of a new form of clamp which he illustrates. The clamp is in the form of a hollow cone introduced into the rectum. The pile is received and clamped in an opening near its base. It blocks the field against any invasion of the feces or other matter. Local anesthesia with cocaine renders the operation painless.

75. **Cardiac Injury.**—Remarking that his practice has included some cases of non-fatal cardiac wounds, and that some one has said that about 12 per cent. of these injuries recover, Wyman assumes that in this estimate pericardial as well as cardiac lesions are included, and he goes over the symptoms of cardiac wounds and concludes that most of them, in which the patient lives long enough to ask the services of a physician, are limited to the pericardium. The disordered action of the heart in these cases may be due to the presence of blood or air in its sac, encroaching on it and impeding its movements. He would advise the operator who opens the pericardium or enlarges a wound to use the utmost caution as regards infection, and objects to any extensive probing or exploration with the fingers. If blood clots are present, their release would give immediate relief. In case the blood continues to flow and is not from an intercostal or mammary artery, the heart should be explored and the source found and ligated. No one should take the chances of an intercostal or mammary artery pouring its contents into the pericardium. Sutures should be cut short that they may become absorbed or encysted. To close the pericardium and chest wall, interrupted sutures are the best, and should include both. Gauze or cotton dressing, or, better, adhesive plasters should be applied to the external wound. The bowels should be freely opened with calomel or salines, to guard against pericarditis and endocarditis. In enlarging a wound

which one has cause to think involves the pericardium, care should be taken not to open the pleura if it has not been already opened. When the wound of entrance is in the chest or abdomen at a point remote from the pericardium, it had better be opened by an incision in the fourth intercostal space commencing near the sternum and extending upward for three inches. The fourth costal cartilage may be divided close to the sternum and pulled upward to give more room. If the third costal cartilage must be divided, an incision should be made parallel with the sternum, one inch from it and at nearly right angles to the first incision. The included soft parts may be divided with scissors. Retractors may be used to hold the wound open so that access may be had to the heart. The index-finger should be passed between the apex to raise it up and steady it while the bleeding point is embraced by a curved needle carrying a ligature. This curved needle, smooth and round, held in a needle holder, is not liable to unnecessarily wound the heart tissue.

78. Intestinal Perforations from Within.—Hadra's paper treats of perforation of the intestines by foreign bodies, which he suggests may take place very gradually and a considerable time after the original ingestion. He reports several cases of abdominal abscess which he believes were caused in this way; in one of which the corpus delicti, a small bone, was found imbedded in indurated omentum. In conclusion, he calls attention to these perforations as occurring in the rectum, especially in that form which occurs just above the so-called pelvic diaphragm, say above the line of the coccyx. These cases reveal themselves as chronic proctitis with inflamed hemorrhoids, rectal ulcers, etc., and a correct diagnosis is not always easy.

79. Tonsil Clippings.—The writer considers the following topic: Follicular tonsillitis, peritonsillar abscess, hypertrophy of pharyngeal tonsil.

80.—This address was printed in full in the *JOURNAL* of June 10.

83.—See title No. 29, p. 214.

84.—*Ibid.*, No. 27.

89.—See abstract in *JOURNAL*, June 3, p. 1254.

90. Hepatic Abscess.—According to Grant's view, hepatic abscess is more common than has been generally accepted, is frequently infected by way of the ducts, and is not necessarily connected with tropical dysentery. He notes the symptoms as described by Johnston and Fontan: pain, indigestion, nausea, intestinal disturbances, irregular temperature, occasional jaundice, the enlargement which is usually palpable etc. The use of the aspirator after the tumor appears, though not approved by some authorities, is advised by Grant, and he thinks its dangers are slight and the indications it gives valuable. It is unwise to allow the abscess to enlarge, as is often advised, because it increases the suffering and renders multiple abscess more probable. He has had no experience with the subphrenic abscess located in the spaces about the stomach below the diaphragm. Its causes and symptoms, however, are much like those of acute septic abscess in the liver substance, and the diagnosis and treatment are less difficult. Recognizing, therefore, a chronic slow-growing and an acute septic form of liver abscess, the former characteristic of the tropical variety, the latter much more rapid in its course and following an attack resembling typhoid, he advises treatment, after diagnosis, by incision down to the liver, stopping at the surface of that organ until the existence of firm adhesions is made out. If there are none, wall off the cavity and follow the aspirating needle into the abscess cavity with a bistoury, wash out and drain. A still better plan, however, is to pack the wound when the liver is reached and wait thirty-six hours until further adhesions have formed, and then incise and perhaps curette and drain in safety. The hemorrhage, if the cavity is deep, may be troublesome, but yields to suture or packing. If the abscess is single, the operation will be successful in a large percentage of chronic cases, though in the acute septic form the prognosis is not so good. Perhaps 60 per cent. of abscesses are more accessible through the diaphragm and can be reached, after the use of the aspirating-needle, by excising a part of the eighth or ninth rib, and if the pleura cannot be peeled off the ribs and diaphragm, carefully incising it and sewing the costal to the diaphragmatic portions, thus shutting it off from infection, then

incising the liver from the diaphragm and, if possible, stitching the liver wound to the diaphragmatic opening; after this irrigation and drainage. In multiple abscesses a recurrence of the symptoms will indicate pockets that have not been reached, and if the accumulation can be found, the same rational surgical treatment is indicated. Such cases, however, are usually resistant to any surgery. He believes that the prognosis in single abscess without severe sepsis and with prompt and careful treatment is favorable for recovery in at least 75 per cent. He briefly reports five cases, one secondary, probably to disease of the small intestines or colon, one undoubtedly a direct infection, most likely from typhoid fever, and two apparently traceable to appendicitis. In one the source of infection was not clear.

91.—See abstract in *JOURNAL*, June 3, p. 1255.

93. Hip Disease.—After noticing the principal causes of hip-joint disease, which in practically all cases are either syphilitic or tuberculous, the author discusses its diagnosis and treatment, the principal new point of which is the description of a special form of splint devised by the author which he illustrates.

94.—See abstract in *JOURNAL*, July 8, p. 101.

95.—*Ibid.*, May 27, p. 1180.

100. Liquid Air.—Campbell White, after describing the properties and behavior of liquid air and noticing the fact that it is not antagonistic to the lower forms of life and therefore is in no sense a germicide, gives results of his therapeutic experience with this agent. He has employed it in varicose ulcers, chancroids and in some specific ulcers, and he believes, from the results of his experience, that we have nothing at our disposal that will so quickly, thoroughly and painlessly clear up the edges and stimulate the surface to granulation as does the proper application of liquid air. The applications should not be too frequent, as it is not desired to break down the new granulations. After one or two applications to a varicose ulcer, a repetition once a week is generally sufficient. A chancre or mixed sore will be disposed of at one application, generously applied. A "beefsteak" chancre requires two or three applications three or four days apart. All ulcerations thus treated seem to do better with dry dressing instead of ointment. An ulcer, boil, carbuncle or bubo in its early stage is absolutely aborted with one thorough freezing. If more advanced, several applications at intervals of twenty-four hours are required. When pus has formed in large quantities, it is best to open, under anesthesia, with this agent. In advanced bubo or carbuncle it is unnecessary to curette if liquid air is thoroughly applied to the base of the abscess after incision. He has also used liquid air in sciatica, herpes, intercostal and facial neuralgia, obtaining permanent relief by applying the liquid air to the spinal end of the affected nerve. He thinks the prospects of the use of liquid air in lupus are very encouraging. As regards the treatment of carcinoma, he cannot express any positive opinion for want of experience. One reason why it acts so well he credits to its being a natural application. Air that is in liquid form is the same as the air which envelops the tissues normally, the only difference being its extreme cold, and the tissue destruction from its actual application is less than from handling the glass tube containing it. He applies it with a cotton swab or by the spray.

101. Shock in Modern Surgery.—The principal feature of this article is a protest against too much delay in operation as favoring the occurrence of shock. Quickness of operation is not at all incompatible with carefulness, and the author objects to manipulations and elaborateness of technic requiring the expenditure of time. The special sensitiveness of the nerves supplying certain parts of the body is to be considered in this connection, and he also alludes briefly to the dangers connected with certain positions: the semi-recumbent, Sims and Trendelenburg positions, as contributing to shock.

102. Hemostasis in Intrapelvic Surgery.—Heffner's paper is a discussion of the condition and details of preventing hemorrhage in intrapelvic surgery, and not easily abstracted.

103. Exercise Treatment in Tabes.—This article gives the author's report of the results of seven months' experience

in the exercise treatment introduced by Frenkel for tabes dorsalis. He reports three cases, in all of which ataxia was pronounced and in which this symptom has been greatly relieved. His method does not require complicated apparatus as used by Frenkel, but simple appliances such as can be found in any doctor's office or constructed by the patient himself. The different movements are not enumerated here. He commences the treatment first in bed, in a recumbent position, then sitting up in a chair and, lastly, in walking and moving about, each case, however, being treated individually, according to its needs. As regards other symptoms of the disease, they are not mentioned or discussed here, ataxia alone being considered.

104. **Hydrophobia.**—Kinnear advocates the use of the "Buisson" method in the treatment of hydrophobia, claiming that this is more efficient than the Pasteur method. It consists especially in hot air and vapor baths, and he has collected a number of testimonials of its value.

107. **Serum Treatment.**—Biggs' paper is continued and will be given in abstract form completed.

108. **Light and Air in Phthisis.**—Gardiner calls attention to the climate of Colorado as affording the conditions of light and air, altitude and dryness that best suit the outdoor treatment of phthisis, and tent life, he thinks, comes nearest to the ideal condition for a certain number of patients. The tents he would use, however, differ from the ordinary ones and are described in detail, all conditions for ventilation, cleanliness, heating, etc., being met. Such a tent can be occupied in Colorado at 6000 feet altitude for at least eight months of the year, and could be transported to a milder climate farther south for the remainder.

110. **A Study of Delirium.**—Noticing first the lack of agreement among medical writers as to the conception of delirium, Hirsch thus formulates his own definition: "Delirium is a physical state characterized by an abolition of self-consciousness, by an incoherence in the chain of conceptions, and by the appearance of symptoms of sensory and motor irritation." Dreaming is its physiologic analogue. He then points out the differential diagnosis between this and similar condition: mania, melancholia, hallucinatory confusion, etc. In mania there is rapidity of the formation of ideas and paralysis of the higher psychic inhibitory apparatus. The manic is compared to a man observing the landscape from a rapidly moving train, where scenes pass too rapidly before him to give him any ordinary impression of their nature. The delirious patient, on the other hand, receives no ordinary impression, because he is in mental darkness. The mania may remember his actions; there is no absolute loss of consciousness. Melancholic frenzy is distinguishable by the unmistakable, dominating presence of fear, hallucinatory confusion by the presence of hallucinations. The clinical picture in all these forms will serve to distinguish the condition. Delirium may ordinarily occur under various conditions. It means a state of inanition and demands stimulation. The writer goes over the various conditions in which it may occur and calls attention especially to the importance of its recognition and early treatment. In general the therapeutic treatment is indicated by the underlying disease when that is recognized. The fact, however, of exhaustion, must be kept in mind and treatment be instituted accordingly.

111. **Early Diagnosis of Tabes.**—After some remarks on the newer pathology of locomotor ataxia, Pritchard states his conviction that if recognized with sufficient promptness, before secondary sclerosis has appeared, it may become practically a curable disease. He calls attention, therefore, to certain points, the early recognition of which he thinks would be of the greatest practical importance. Bearing in mind the usual etiologic features and the legitimate deductions from the new facts and theories in regard to this disorder, he thinks any nervous disorder, especially if sensory, occurring in a man between 30 and 45, who admits or exhibits evidence of previous syphilis, and whose occupation involves exposure or overexertion, should excite suspicion sufficient to at least demand an investigation of the knee-jerk, the pupil and the functions of the genito-urinary apparatus. If in such there appear evening headaches with insomnia for the early part

of the night and usually an excessive fatigue out of proportion with previous powers of endurance, the condition should be looked after. He then goes over the symptoms: those of common sensation; disorders of the sensibility; pain anesthesia; and ocular symptoms such as strabismus and ptosis without pain, described by Moebius as characteristic; Argyll-Robertson pupil; optic atrophy; genito-urinary symptoms; the reflexes; trophic symptoms, and visceral crises are noted in detail, thus covering the larger portion of all the symptoms of the disease.

113. **Calomel in Diphtheria.**—Judd first refers to a paper read two years ago, at the session of the American Climatological Association, in which he recommended the heroic use of calomel in diphtheria. The present article continues the same recommendations. Calomel has been his main stay in the treatment of pronounced cases of the disease. Its use does not do away with the necessity of faithful and intelligent nursing. As regards antitoxin, he admits the usefulness in the doubtful, mild and early stages of the disease, but does not feel so sure of it in the advanced condition.

114. **Atropin in Epilepsy.**—Wachenheim reports a case of the treatment of epilepsy with combined usage of atropin and potassium bromid. He considers epilepsy in idiopathic cases, such as the one he describes, as due to an auto-intoxication, producing an abnormal irritation on the part of the cortical cells. According to his theory the mechanism of the treatment is as follows: The bromids diminish the sensibility of the cortical cells, which have become hyperesthetic to variations in the blood-supply; atropin stimulates the vasomotor centers, thereby making the blood-supply more uniform. In the early stages of treatment bromids are useful to dull the irritability of the cortex until the proper vascular tonus is established. When that point has been reached, they are of less importance and may be reduced or withdrawn. Neither the bromids nor atropin can in any way meet the casual indication. If the disease depends on a passing intoxication, these drugs will suspend the destructive action of the epileptic seizures until the *materia peccans* has ceased to act; if there is a permanent cause, as seems to exist in the majority of cases, such treatment will naturally be at best only a palliative.

116.—See abstract in JOURNAL, May 6, p. 1000.

118. **Right-Angle Continuous Intestinal Suture.**—The right-angle continuous suture here described is a modification of the Kirschner or the continuous Lembert. Its advantages are that it can be applied more rapidly than any other suture, with scarcely an exception. It can be interrupted at any point if desired, and then reinforced by another superimposed if thought necessary. If the suturing is properly done, no reinforcing is necessary. He describes the technic in detail, with illustrations, and sums up its advantages as follows: 1. The suture does not involve the mucous membrane. 2. The intestine is closed by a suture which acts so that the greater the tension to which it is subjected the closer is it drawn. 3. It can be inserted very rapidly and easily. 4. The closure of the intestine is impervious and efficient. 5. Its technic is simple. He reports briefly some results of its use in the hands of other surgeons.

119. **Blood Examinations.**—In the conclusion of Hewes' paper, he points out the general lines of usefulness of blood examination in clinical work. In the first place we are thus able to diagnose the existence of anemia, to estimate its severity and determine its type. The appearance of degenerative changes in the red corpuscles proves the anemia. The extent of these changes, the appearance or non-appearance of 'blasts' aid us in determining its severity. The characteristics of the blood in pernicious anemia are: 1, marked poikilocytosis, with tendency to increase the size of red corpuscles, and, 2, the presence of "blasts," more particularly megaloblasts. If we do not find a megaloblast, we have a secondary anemia. The evidence of anemia found in many cases consists in the presence of achromia with some distortion, with the number of corpuscles normal. As a rule there is a reduction of hemoglobin; a very mild anemia may sometimes be discovered by this hemoglobin estimation when it is not apparent from the stained specimen. Anemia is not therefore to be ruled out except by

the hemoglobin estimation—specific gravity. In the second place, this blood-staining method may reveal the existence of a leucocytosis and determine its type. "Thus by finding a neutrophilic leucocytosis with a considerable proportion of myelocytes we may diagnose myelogenous leukemia, a marked basophilic leucocytosis, lymphatic leukemia.

"If we find an unmixt neutrophilic leucocytosis we know that we have present one of the conditions with which this leucocytosis is associated and we can rule out all conditions which do not have a leucocytosis. Such finding may help us in a given case to differentiate pneumonia from phthisis, suppuration or pyemia from malaria, appendicitis from typhoid, scarlet fever from measles, to diagnose the existence of suppuration, hemorrhage or certain acute infectious diseases, to rule out typhoid or malaria.

"If we find an oxyphilic leucocytosis we are led to consider some condition thus accompanied, as trichinosis, leukemia.

"If our blood-slide leads us to suspect an increase in the number of leucocytes, and we wish to estimate the exact number, we can make a white count. Where the number appears normal we gain our knowledge without this trouble.

"In the third place, we may discover by this method the presence of blood parasites, the plasmodium malarie, the filaria sanguinis hominis, the spirillum of relapsing fever. It is customary to look for these parasites in the fresh specimen, where they are seen alive. But it is perfectly possible to discover them in stained specimen."

FOREIGN.

British Medical Journal, July 8.

Description of New Pathogenic Microbe of Sewage; Bacillus Pyogenes Cloacinus. E. KLEIN.—The author describes a new bacillus obtained from sewage matter, with strong pathogenic action, which he has called bacillus pyogenes cloacinus. It is a minute non-motile bacillus, staining slightly in Gram's solution. Minute doses injected into guinea-pigs lead to fatal results in from twenty to twenty-four hours. Culturally, it resembles Loeffler's bacillus suiscepiscus to a certain extent, but the action of the latter on rodents is quite different.

Plastic or Croupous Bronchitis. THOMAS OLIVER.—Noticing the rarity of these cases, Oliver reports two in detail, giving illustrations of the molds of the bronchial tubes thrown off. Discussing the disorder, he does not think it specially related to tubercular disease. Its pathology is obscure and its treatment is divided into: 1, the methods used to loosen and dislodge the membrane, and 2, to prevent their recurrence. In his cases inhalation and sprays were generally unsatisfactory, and he does not speak with special favor of the use of emetics. The internal use of iodid of potash with or without expectorants gives as good results as anything. Ewart recommends the intratracheal injection of oil or a mild solvent such as lime water or trypsin. To prevent recurrence the writer knows of nothing better than attention to general health; healthy, bracing atmosphere, good food and tonic medication.

Some Points Connected With Sleep, Sleeplessness and Hypnotics. JOHN BUCKLEY BRADBURY.—This lecture treats of the physiologic and therapeutic action of chloralose, urethanes, sulphones and vegetable hypnotics of which only opium and its alkaloids are taken up.

Cases of Septicemic Infection Treated With Antistreptococcus Serum: Rapid Recovery. J. MITCHELL BRUCE.—This paper reports two cases of septicemic infection treated with antistreptococcus serum. From the first of these the author deduces that serum may succeed in septicemia after all ordinary methods fail, and that its action may be extremely rapid. From the second, which was of the cerebrospinal type, the conclusion was the same, but he also found that when one serum had failed another might succeed. The practical lesson is not to be content with the trial of a single serum, if it fail.

Lancet, July 8.

Tracheotomy in Diphtheria. GEORGE THORNTON.—This is an analysis of 151 cases of diphtheria, of which 49 died. It covers the period since the introduction of the serum treatment in the Fountain Fever Hospital, Tooting. The causes of death in the 49 cases were: toxemia in 8 cases; in 16 asphyxia from extension of the membrane; 5 from hemorrhagic diphtheria, always a fatal form of the disease; 9 deaths resulted from the occurrence of broncho-pneumonia; 2 from late respiratory

paralysis and the accumulation of mucus in the bronchial tubes; 3 deaths were due to acute tracheitis and bronchitis, no other cause being found; 1 patient, a baby, died from the late development of marantic thrombosis of the longitudinal sinus; 5 were due to a combination of cardiac and gastric symptoms, put down as gastric crisis. The use of serum in staying the disease and modifying the mortality was very striking. In not a single case was the trachea or bronchus affected after the operation and the mortality was very striking. In not a single case was the trachea or bronchus affected after the operation, when the serum had been used. Injection on the second day of the disease gave 21 cases with 2 deaths; on the third day, 47 with 16 deaths; on the fourth and subsequent days, 83 cases with 31 deaths. He believes in giving the serum freely in fairly large doses.

After-History of Excision of Entire Breast. J. E. SIMPSON.—In this study of the report of 90 cases operated on for malignant disease of the breast it appears that 70 were alive one year after operation; 47 two years; 33 three years; 19 four years; 14 five years; 8 six years; 4 seven years; 3 eight years; 3 nine years; 3 ten years, and 1 survived eleven years after operation. These figures would seem to disprove the claim that any case which remains free from recurrence for three years may be considered cured.

Chinosol in Phthisis. ALEXANDER MACGREGOR.—The author reports six cases treated with chinosol—oxyquinolin sulphate of potash—given in doses from 3 to 5 grains three times a day, all with decided improvement. In the out-patient treatment by the author, some patients seemed to derive no benefit, but the difficulty of observation was greater. He thinks that it is a valuable drug in the treatment of phthisis.

Glasgow Medical Journal, July.

Position of Gravid Uterus at Onset of Labor With Rigid Latero-Flexion and Rotation. ALEX. MACLENNAN.—The author has investigated the position of the gravid uterus in patients presenting themselves at the Glasgow Maternity Hospital during his term of residence as in-door house surgeon, and gives here the results, which are summed up in the following conclusions: Right flexion with right rotation is by far the commonest deviation. No case of the converse was met with. Flexion is caused by purely mechanical conditions, and it will tend to produce rotation to the same side. Flexion has no relationship with presentation or position of the fetus. Rotation is due to laxness of the uterine ligaments, and possibly to irregular contraction, but not to an irregular arrangement of the muscular fibers. It may replace latero-flexion as an attempt at accommodation. One case, No. 7, showed in the first three days, first symmetry, then rotation to the right, and finally rotation to the left. Only two cases of flexion without rotation occurred and they were complicated by contracted pelvis. An absolutely symmetrically-placed uterus is more common in primiparæ, but one medianly placed, if accompanied by rotation, is more common in multiparæ.

Annales de Dermatologie (Paris), June.

Lesions and Nature of Indurated Erythema. G. THIERMIEGE.—The conclusions of this article can be summarized in the statement that indurated erythema, the ulcerous variety studied by Hutchinson as well as the non-ulcerative described by Bazin, should be classed with cutaneous tuberculosis, or, to be more exact, should be included among the cutaneous manifestations of tuberculous infection caused by the Koch bacillus. It thus takes its place beside tuberculous gummata, with which it presents the greatest clinical affinity.

What Are the Limits of Syphilitic Infection?—DE BEURMAN AND DELHEM.—The absence of syphilitic antecedents in so many cases of tabes is explained by these writers as due to the frequency of syphilis occurring unrecognized or ignored. If the truth were known, they state, the subjects hitherto considered refractory to syphilitic infection would be recognized as being already syphilitized. They demonstrate that it is impossible to fix a moment when the subject escapes from the syphilis of his progenitors; also that in spite of the clinical truth of the classic doctrine of non-infection a large number of syphilitics may be and are infected while they still bear the imprint of an anterior or ancestral syphilization. It would be very important, if we could determine at what moment and under what conditions a syphilitic, a heredosyphilitic or a dystropho-syphilitic could be inoculated with a new syphilis, but this seems to be impossible at present. The large number of cases

of ignored, misunderstood or latent syphilis largely compensates the insufficiency of statistics in respect to the specific origin of tabs, general paralysis and aneurysms. It would be interesting, they add, to learn whether this class of syphilitics is infected lightly by the second infection when they contract syphilis, or whether it may not be this class that, on the contrary, is most predisposed to the severest affections of the nervous system, such as tabs and general paralysis.

Bulletin Medical (Paris), June 24.

Perforation and Abscess From Ascarides PAUCHET.—A slow and insidious abscess with perforation of the intestines was operated on in a man of 61, but a fistula persisted for six months, with pus occasionally exuding, until a lumbricus was observed in it and extracted with two others, about 15 cm. long, when the fistula healed at once without further trouble.

Presse Medicale (Paris), July 1.

Masculine Osteomalacia. P. BERGER.—Radiographs of the case reported show that almost the entire skeleton was affected, but especially the extremities, which had grown very much shorter, with an almost incredible twisting and contortion of the bones, too soft to spontaneously fracture. The patient, a young man of good circumstances and habits, of a healthy family, appeared first for treatment of a double green valgum. One limb was operated on as usual, but the trouble persisted and the general affection developed, which leads Berger to warn against green valgum developing suddenly with pain and difficulty in walking out of proportion to the extent of the deformity, especially if there is lateral mobility of the knee on either side. The painful cramps, contractions and trembling which accompany the earlier stages of osteomalacia pass away later and are relieved by immobilization in a Bonnet splint. The conclusions of a careful study of the chemistry of the case are easier to state than to carry out in practice; namely, that therapeutic treatment must aim to improve the evolution of the insufficient ternary substances, increase the oxidation of nitrogenous substances and modify the disassimilation, that is, augment the fixation of lime by the bones and promote the phosphoric interchanges. Double castration was recommended but refused by the patient. Berger considers castration no more empiric or irrational for men than for women in the treatment of osteomalacia. Why should not the removal of the testicles in man accomplish the same as the removal of the ovaries? We know that Truzzi has reported 83 per cent. cured out of 97 women with osteomalacia; Polgar 6 out of 7, and Busche 5 out of 6.

The Blood in Erysipelas. A. CHANTEMESSE AND E. REY.—The blood affords earlier and more delicate indications in erysipelas than any other clinical manifestation, and is a certain basis for the prognosis before any symptoms of recurrence appear. A number of typical curves are graphically portrayed, from which it is evident that the polynuclear leucocytes gradually decrease in number from the third day of the disease to complete recovery. The number of large mononuclear leucocytes is not materially modified, sometimes increasing at the approach of defervescence, to return soon to normal. The lymphocytes, on the other hand, rapidly increase as the fever falls and convalescence is confirmed, their accumulation the evidence of recovery. The eosinophiles, generally absent during the febrile period, also accumulate as recovery approaches. This combination forms a characteristic scheme.

Semaine Medicale (Paris), July 5.

Disturbances in Walking in Hemiplegia Studied With the Kinetograph. G. MARINESCO.—A series of fifty-two cuts shows the peculiarities of the gait in hemiplegia, and brings out certain hitherto unnoticed characteristics, among them the elevation of the pelvis and a deep fold in the skin of the lumbar region on the paralyzed side, and a deviation of the spinal column with the convexity towards the healthy side. Marinesco extols the kinetograph as a means of observing progress in cases under treatment and for teaching classes, showing with projections the abnormal characteristics of all diseases affecting the gait, gestures, etc., long after the subjects have disappeared from sight.

Archiv f. Exp. Path. u. Pharmacologie (Leipzig), xlii, 2 to 4.

Theory of Alcohol Narcosis. MEYER AND BAUM.—Dubois noticed that certain plants exuded droplets of moisture over the surface when exposed to the influence of chloroform, ether,

benzin and alcohol. He considers the process an indication that the vapors penetrated the protoplasm of the plant tissues and forced out the water, taking its place. Meyer bases a theory in regard to the effect of narcotics in man on the observation of this phenomenon, suggesting that certain substances in the protoplasm of the cell, the lecithin, etc., so important to the healthy functioning of the cell, are dissolved out of their normal proportions of solution and combination in respect to the other components of the cell, the water, salts, albumin, etc., by the tension of solubility between them and chloroform, alcohol and other narcotics, analogous to the effect of salt in the organism. If this theory is correct, then all chemical substances which dissolve fat and bodies resembling fat—lecithin, protogon, etc.—must produce a narcotizing effect on living protoplasm, and the effect would be most marked on the cells which contain the largest proportion of these substances; the nerve-cells. The effect would also depend on the mechanical affinity of the narcotics for the other constituents of the cells besides the fatty matters, especially the water, and also on its coefficient of division in a mixture of water and fatty substances. A large number of tests are reported which indicate, in fact, a narcotizing power for a number of chemically indifferent bodies of the aliphatic series, the cause of which can not be ascribed exclusively to the splitting or saponification caused by them. Baum also reports experiments which support the theory and confirm in particular that the narcotic effect is in direct proportion to the coefficients of division determined by a mixture of oil and water.

Simple and Accurate Method of Determining Amount of Mercury in Urine SCHURMACHER AND JUNG.—After destroying the organic matters with hydrochloric acid and potassium chlorate, the mercury is precipitated and then evaporated by heating in a "gold asbestos" tube. The weight of the tube before and after indicates the amount of mercury.

Oxybutyric Acid and Its Connections With Coma Diabeticum. A. MAGNUS-LEVY.—"Beta oxybutyric acid occurs in severe cases of diabetes in amounts up to 20 to 30 grams, and during coma this amount increases to 160 grams eliminated in the urine." Such an enormous amount can not all be derived from the albumin, and Levy ascribes its origin to the fats or to some synthetic process. The conception of coma as an intoxication with some acids has always been refuted by the inefficacy of alkaline therapeutics. But Levy asserts that this is due to the insufficient amounts employed. He advises daily doses of 200 grams of sodium bicarbonate, part injected into the veins in a 3 per cent. solution, the rest ingested, commencing and concluding with 60 to 100 grams a day. He succeeded in saving one very severe case by this means, but three others succumbed in spite of it.

Origin of Edema of Skin. R. MAGNUS.—Artificial hydropsia alone, Magnus states, is not sufficient to cause edema of the skin; there must also be some lesion of a vessel, such as he produced experimentally by intoxication with arsenic, chloroform, ether, chloral hydrate and phosphorus. Edema can be produced by flushing dead animals and also by removal of the kidneys or tying the ureters. In the latter cases the endothelium of the vessels is injured by the action of the urea retained in the blood.

Berliner Klinische Wochenschrift, June 26.

Tabetic Attacks Accompanied by High Fever. P. K. PEL.—Tabetic attacks with fever have never been recorded before (See JOURNAL, xxxi, p. 1161), but in this case a glass polisher, 41 years of age, with typical tabs dorsalis, has had five attacks during the last few months, in which the vasomotor and heat regulating centers were evidently irritated, followed by irritation of the inferior and then of the superior spinal roots, then of the vomiting center and finally of the trigeminal fibers. The last attack is described in detail. The temperature rose abruptly with the pains, reaching 40.2 C.; pulse 150; vomiting, profuse sweating and, invariably, herpes labialis the next day; pains in the eyes, photophobia, lachrymation and congestion in the head. There were no morbid conditions aside from the tabs to account for the fever, which fell to normal in twenty-four hours, as abruptly as it rose.

Deutsche Medicinische Wochenschrift (Berlin), July 6.

New Method of Narcosis. J. GERTNER.—This method is based on the principle of supplying a small amount of concentrated chloroform carefully measured, with the surrounding air

mixed just as it is inhaled. The gasometer is used as with the Bert-Dreser method, but without the disadvantages of the airtight mask and the necessity for the assistance of an expert to manage the gasometer. Two volumes of chloroform to one of ether are poured into a long cylinder fastened to the side of the gasometer, and are forced out into a connecting bulb as the piston within, connected with the gasometer above, sinks in the tube. The chloroform mixture in the bulb is vaporized by a gas jet below, and the fumes rise in a short tube which opens into the tube, bringing the compressed air from the gasometer. The combination of air and anesthetic flows onward in the tube with the regularity of a stream of gas, and the amount passing is accurately determined by a graduated stop-cock. The tube ends inside the usual mask, a short distance from the nose and mouth, and the surrounding air combines with it as it is inhaled. Instead of a large amount of a weak solution, Geppert uses a small amount of a strong solution, the dose precisely determined by the regulating faucet. The apparatus is illustrated in detail. Ether in this combination is not explosive and does not ignite readily.

Protracted Remittent Fever in Tertiary Syphilis. CAMO.—A case is described in which a remittent fever lasted six months and led to severe cerebral disturbances in a miller, 42 years of age, otherwise apparently normal. He was treated for tuberculosis and then for malaria, with no effect; there was nothing to suggest syphilis except a record of slight syphilis in youth, promptly cured with energetic treatment. When specific treatment was at last commenced recovery soon followed. The patient had consulted several of the most prominent German physicians, but all had erred in the diagnosis.

Automatic Lifter for Patients in Bed. MANDOWSKI.—A frame fits over the bed with a strong, soft cloth stretched over it, on which the patient lies, a hole cut out for the seat. A wide belt at each end of the frame passes over a pulley above and the frame is lifted by turning a crank without disturbing the patient. The entire contrivance costs but \$6 to \$10.

Archiv f. Gynakologie, iviii, 2.

Experimental Production of Impermeability of the Fallopian Tubes. L. FRAENKEL.—The research reported establishes that it is impossible to produce certain impermeability of the tube with either ligatures, partial resection, thermocauterizing or severing the tube. "The only reliable means to prevent conception is the complete ablation of the tube by a wedge-shaped excision out of the uterus and careful suture of the peritoneum."

Prager Medicinische Wochenschrift, 24 and 25.

Subcutaneous Injections of Brain Matter in Tetanus.—L. ŽUPNIK.—The severe epidemic of tetanus last winter in the Prague Maternity, which caused the institution to be closed, failed to show any evidence of benefit from injections of Behring's serum. A case of puerperal tetanus that occurred recently in Příbram's clinic was therefore treated with 4 grams natr. brom. and 1.5 grams chloral a day, a treatment which has a record of 53 per cent. recoveries. Besides this, 21 grams of calves' brain substance were injected subcutaneously in four days, at a concentration of 1/12 to 1/5. The tetanic symptoms were much improved, but the patient died. It was impossible to determine the cause of death as the kidneys were found the seat of serious acute and chronic lesions.

Wiener Klinische Rundschau, July 2.

Hemorrhagic Myositis. H. SCHLESINGER.—An observation reported from Albert's clinic tends to prove the existence of an abortive form of polymyositis hemorrhagica. The hemorrhagic infiltration of the muscles was limited to one leg, and in the course of a year and a half only spread to the other gastrocnemius, while typical polymyositis affects nearly all the muscles and is rapidly fatal. The anatomic and clinical manifestations were similar to those in the latter, also the severe occasional cardiac symptoms, absence of fever and of suppuration, etc.; bacteriology negative. No traumatic origin could be discovered, except slight varicose troubles.

Wiener Klinische Wochenschrift, June 29.

Deceptive Pericardial Peritoneal Friction Sounds. N. ORTNER.—In four personal cases a friction sound was noted over the heart, accompanying the contraction of the organ or the action of the diaphragm, which the autopsy disclosed was not of pericardial, but of peritoneal origin. The rhythm is the

same as a pericardial sound, either like a locomotive or systolic-diastolic or exclusively systolic. It occurs as the consequence of accumulations of fibrinous exudations or tuberculous nodules on the liver, or on a portion of the intestine in contact with the diaphragm, and the corresponding part of the latter. This pseudopericardial peritoneal sound usually occurs loudest or exclusively over or to the left of the lower portion of the sternum, while the true pericardial sound is more distinct at the base of the heart. The peritoneal origin is indicated by the coexistence of tuberculous peritonitis or subdiaphragmatic perihepatitis, which were found in the five cases in which the sound has been noted to date, while the pericardium was practically intact.

Gazzetta degli Ospedali (Milan), July 2.

Early Hereditary Syphilis of Larynx in Infants. J. ARSLAN.—The symptoms first to attract attention are the alterations in the voice, disturbances in the respiration, cough and coryza with the absence of general acute symptoms. The affection seems to be more frequent in boys and can be divided into two classes, the hyperplastic and the ulcerative. In the latter the stenosis is more apt to be intermittent.

Laughing as an Aid to Expectoration. A. AUFOLLO.—The writer states that inducing a convulsive laugh by tickling is an excellent means to promote expectoration. It is usually followed by a coughing spell which expels the secretions in the alveoli dislodged and loosened by the contortions of the tickled subject.

Bolnitschnaya Gazeta Botkina (St. Petersburg), 2 to 4.

Diazo-Reaction in Scarlet Fever and Measles. J. LOWE.—From the study of 900 examinations the writer concludes that the diazo-reaction is not pathognomonic of any affection, but merely an indication of the severity of the affection. In doubtful cases it indicates measles. The earlier the reaction appears after the eruption, the more severe the disease. The more pronounced and the more frequent it appears in scarlet fever and measles, the greater the chances of a fatal termination. Variations in the temperature and injections of serum have no effect on its appearance. The urine of convalescents and healthy persons does not produce the reaction.

Russky Archiv Path. Klin. Med. e Bacteriologii, vii, 3 and 4.

Morphologic Changes in Blood With Liver Affections.

G. VLAEV.—The writer has been studying this subject for years and announces that the nature of a liver affection and also its character can be determined by examining the blood. In the pernicious anemia of severe liver affections the reds fall below a million; nucleated reds appear and the number of whites increase to 50,000 to the c.c. The absolute number of lymphocytes or transition forms decreases, while the number of neutrophiles shows marked increase. These changes are less pronounced with cirrhosis of the liver; the whites do not rise above 20,000, the lymphocytes average 671; the transition forms, 511, while the neutrophiles increase to 11,300. No decided change occurs in the blood with catarrhal icterus or echinococcus. With pernicious anemia without any liver affection, the number of reds also diminishes and nucleated reds appear, but the whites diminish also and the above morphologic alterations do not occur. The blood also differs with the affections of the spleen. With leucemia, for instance, the number of lymphocytes is increased, and also the transition forms and the eosinophiles, but the number of neutrophiles is much diminished.

Crystal Formation in Gelatin Cultures. S. BARTOSHEVITCH.—"The crystals that form on the surface of bouillon-peptone-gelatin plate cultures as they dry vary with different bacteria and are characteristic of each species." With the anthrax bacillus the crystals are in the shape of isolated balls or flat slabs; with the staph. pyogenes albus, they form sheaves of three cornered prisms; with the bacillus subtilis, coffin-shaped crystals, etc. He considers that this fact indicates that bacteria which liquefy gelatin do not all derive the same substances from the culture-medium, and that this circumstance deserves special regard in the study of the bacterial metabolism.

Influence of Cold Baths on Number of White Corpuscles in Health and Disease. LAPINSKI AND SVENSSON.—Three-minute baths at 22.3 C. were tested in a very large number of cases of various diseases and the blood examined beforehand and at short intervals afterward. It was found that the baths

induced a transient accumulation of both reds and whites in the peripheral vessels, with consequent increase in the number of each, in the specific gravity and in the amount of hemoglobin. This condition soon subsided to normal, and the absolute leucocytosis claimed as the effect of the baths has no existence in reality.

Societies.

Chicago Neurological Society.

Regular Meeting, April 25, 1899.

DR. RICHARD DEWEY, the president, occupied the chair, and announced the subject for discussion to be

BRAIN TUMOR.

DR. HENRY M. LYMAN opened the discussion, saying: While sitting here this evening I have been thinking of various experiences and observations in the past, and I have been especially impressed with a remark that I once came across in one of Hughlings Jackson's lectures. In speaking of diseases of the brain, he said: "It is a great misfortune, but it is a fact, that the more experience a man gets in the matter of diseases of the brain, the less certain he feels in his diagnosis." The laity show a certain lack of respect for the conscientious observer who has the ability to confess his uncertainty or his actual ignorance with regard to the condition of the patient presented to him; but nevertheless such is the fact, and the more a man learns about the subject of diseases of the brain, the more uncertain he feels as to diagnosis in obscure cases. This is especially true of cerebral tumors.

The whole subject of tumors of the brain introduces us to one of the most variegated pictures of disease that it is possible to imagine, and when we consider for a moment how that may be, we realize that tumors of the brain vary in their origin, in their nature, in their seat, and give rise to various symptoms in consequence of their existence, their growth, and their encroachment upon the organs of which the brain is composed. We all admit the brain to be a vast congeries of subordinate structures, each one of which has its own definite function which is influenced by disturbances in other adjacent organs; consequently, the symptoms that result from the existence of tumors must be numerous. In many cases the existence of a brain tumor is not revealed by any sensory, motor, or focal symptoms, and it is in this subdivision of the subject that the greatest amount of obscurity probably exists. When we have a focal lesion, such as that produced by a tumor encroaching upon one of the cranial nerves, or developing, as in the case shown tonight, probably in the oculomotor nerves, or in the optic nerves, when we have definite symptoms that are easily recognizable and can be more or less accurately traced to their location, their cause and probable nature. In a case like this, it is probable that disturbance—although the history is not clear on that point—is due to the development of a tumor or tumors in the optic tracts. Sometimes it is impossible to determine where these tumors have been developed, whether in the optic commissures, in the optic tracts, in the corpora geniculata, or in the corona radiata of the brain substance itself. Even in the cortical structure we have the development of these new growths, which have a certain particular character, but are different entirely to those due to syphilis, tuberculosis, cancer, or anything of that kind developing in any portion of the optic nerve tract; yet they are likely to produce disturbance of vision, and if they develop in certain localities we have disturbance of nutrition of the optic nerve or of the retina. It is not impossible for the tumors of multiple sclerosis to develop in that portion of the brain which we call the retina; so that an example of brain tumor affords the greatest variety of locality, of effect, and of disturbance of the brain functions. But to speak of those brain tumors which exist in portions of the brain where there are no sensory or motor disturbances to be produced by their growth, they may exist for a considerable length of time, and may result fatally; yet before a post-mortem section is made there is nothing to indicate the fact of the existence of a tumor.

Dr. Bristow of London a few years ago read an interesting paper on certain cases of this kind that had come under his own observation. I believe he reported three such cases in which

the only symptoms before death were those of a hysterical character. There was no paralysis, no sensory disturbance, the only disturbance being of an emotional nature of a very obscure character; and after death it was discovered that there was cerebral tumor. I have now forgotten the exact location of these tumors, but they were in the neutral portions of the brain, where no motor or sensory disturbance was caused by their presence. I will not enlarge upon this subject, because it is familiar to you all, but will merely describe, as a sort of starter for other speakers' thoughts, a case of very great interest that came under my notice some years ago.

A man came into my office one afternoon with the story that he had been attacked during the previous night with convulsions. He was not an epileptic patient; he had never had convulsions before, but said that at one o'clock in the night his wife aroused him by shaking him, and he found her manifesting great alarm when he came to himself. He told me that he had had a fit; he had another one before morning. He had some difficulty in moving the left arm; he could walk well enough and could talk very well; his mind did not seem to be affected. He described to me his condition, as far as he was able to do so, and appeared anxious to know what was the cause of these nocturnal convulsions. He had never had an experience of that kind before. I examined him carefully and told him there was evidently some disturbance in that portion of the brain connected with his left arm. He came to see me occasionally for a number of weeks; the arm became more and more paralytic, the same condition extending gradually to the lower extremity, till at last it was difficult for him to walk about, and he ceased to come to see me for a time, so that I lost sight of him. One day I was requested to see him at his home. I did so, went to his house, and found him in bed, wasted to a skeleton. It seems that he had had a surgical operation performed, and I was told he had been under the care of an aurist; that for some reason or other he found his hearing affected, and he consulted an aurist and, so far as I could learn, from his description of his case, it was a supposed mastoid abscess upon the left side on which a surgeon had operated. It was plain enough from all the symptoms which developed, that the disease was progressing. There was headache, vertigo, vomiting, convulsions occasionally, and increasing loss of power until the whole left side was affected. He was now approaching death, and died a few days later. An autopsy was made, but I was unfortunately not notified of the fact, and did not see the specimen, but I was told by the physician who had the autopsy in charge that a large sarcoma was discovered in the right hemisphere of the brain occupying the ascending frontal and parietal convolutions. This explained all the symptoms that had developed; beginning undoubtedly in the arm center, gradually extending to the leg center, and finally by pressure and by a modification of the nutrition that comes from the development of these tumors resulting in the ordinary phenomena that are observed in classical cases of tumor of the brain.

Another case of interest that attracted my attention a few years ago was that of a boy, 5 years of age. He was brought to me from the country, and was suffering from pain in the head, with progressive loss of vision, vomiting, and unsteadiness in gait, so that he was obliged to stand and walk with the feet wide apart. It was perfectly clear that he was suffering from a tumor of the brain, and he died a few weeks after he had returned to his home. The physician was kind enough to send me the results of the post-mortem. An osteosarcoma was found springing from the base of the cranium and crowding upward until it involved the optic nerve-tracts. As nearly as I could learn from the description, which was not very exact, the tumor was a little behind the chiasm, so that it compressed the chiasm as well as the optic nerve-tracts. The diagnosis in such cases is comparatively easy, especially if the cases are under observation for some time. On the other hand, there are some cases that are exceedingly puzzling and obscure.

A few days ago a case was brought to me of this nature, a child suffering from vague and very commonplace symptoms. The only thing that seemed peculiar was that these symptoms had continued for a considerable period of time. The little patient had been taken to some of the best diagnosticians in the city, and the statement was made by the last one that there was a tumor in the posterior part of the brain. I could not discover any symptoms that would enable me to make any such

definite statement as that. If it was a tumor of the brain, it was one of those obscure growths which do not disturb sensation or motion, only declaring itself by persistence and the vaguest of cerebral symptoms.

EXHIBITION OF BRAIN TUMOR.

DR. A. F. LEMKE—This is a brain from a patient who died at the Kankakee Insane Asylum. The patient was admitted to the asylum with a diagnosis of general paralysis, this diagnosis having been made by several physicians who had sent her to the institution on account of dementia. It was my custom to examine the eyes of all new patients with the ophthalmoscope, and while going through the ward for this purpose I discovered accidentally that this woman had a double choked disc, which was very marked. I questioned her carefully and learned that the symptoms were those of brain tumor. She had had several attacks of vertigo and vomiting; and had had disturbance of vision for some time. She located her headache in the frontal region. When I first saw her at the hospital, all the reflexes were exaggerated. She had no focal symptoms; she had a very peculiar twitching of the face, which was bilateral. This occurred at intervals of a few seconds throughout the day. She finally had several convulsions, vomited a great deal, and after having been in the institution for about a year and a half she died. A post-mortem examination was made and this brain tumor removed. You can see the tumefaction of the left frontal lobe. The hemispheres were separated. On the right hemisphere in the frontal lobe you will notice an excavation made by the tumor. The tumor does not seem to have involved or infiltrated the brain structure, because we have been able to shell it out of the brain tissue without any difficulty whatever. It is about the size of a small orange, decidedly irregular and rough, made up of a good deal of connective tissue, and the microscope shows it to be a sarcoma with much fibrous tissue.

The interesting feature of the history in this case is that a tumor as large as this seems never to have created what we could consider focal symptoms, and for that reason the tumor was not located ante-mortem.

I presume it is not out of place to speak of the possibility of this tumor having been removed surgically. It shells out of the left frontal lobe so easily and readily that some surgeons have expressed an opinion to the effect that it might have been removed surgically with very excellent results. Had this been done, it would have left quite a defect in the brain, but the woman's mental condition was about as bad as it could be, and, at any rate, a surgical operation might have been attempted if the tumor could have been located.

DR. HUGH T. PATRICK—I distinctly remember examining Dr. Lemke's patient when she was practically blind. I was unable to make out any focal symptoms. She then had optic nerve atrophy following an optic neuritis. I remember, too, that she had an anxious, careful, wide-footed gait, which, although rather natural for a blind person, was also somewhat suggestive of cerebellar disease. There was some inco-ordination of gait, and, while in frontal tumors this has been attributed to polar pressure on the cerebellum, my opinion is that it is not necessarily dependent upon cerebellar pressure, but is due to general motor interference by pressure.

DR. SYDNEY KUH—What was the nature of the mental disturbance?

DR. LEMKE—Merely a dementia.

DR. KUH—Any exaltation?

DR. LEMKE—None whatever.

EXHIBITION OF SPECIMENS OF BRAIN TUMORS.

DR. HUGH T. PATRICK—I have here three specimens of tumor of the brain, each one of which seems to have a separate item of interest, and all go to show more or less the truth of Dr. Lyman's inferential statement that the typical cases of brain tumor are the atypical ones. Most of them really are atypical. I will take my cases in chronological order.

This is the brain of a girl who was 16 years of age when I first saw her, in April, 1895. In July, 1894, she had two prolonged convulsions, another one in October, and up to the time when I saw her, it was supposed to be a case of hysteria, because of the peculiar character of the fits. After these general convulsions which she had in July and October, she began to complain of pain in the right side of the head and right eye, and a little later—in December—she had a number of local fits.

She worked in a store, and every few days she would have a clonic spasm of the left arm, which, after a short time, involved the face. The arm would jerk and twitch in a peculiar way so that she would try to hold it with the other hand, and the other girls would laugh at her. When I saw her she was confined to bed with headache of the right side of the head and right eye, left hemiparesis and strabismus. There was diminution of sensation on the left side; muscular sense was much impaired and there was the inco-ordination which ordinarily accompanies this symptom. She had double optic neuritis.

On account of her age and lack of evidence of syphilis, on examination, I advised operation at once, as the girl seemed to be in a critical condition. She could walk, but clumsily, and as I had seen not long before this a case of tumor with a sudden apoplectic termination, I advised immediate operative interference, rather than to await the results of syphilitic treatment. I had a talk with Dr. Senn before the operation was done, and said that the growth would probably be a flat sarcoma which sometimes spreads out on the surface, or it would be a deep-seated, subcortical growth on account of the extent of the paralysis. It did not seem to me that a small tumor in the cortex could account for the symptoms. The patient was accordingly operated upon, a large opening being made over the arm center. Nothing was seen; although the intracranial tension was great, and the brain pulsed perfectly; by palpation through the dura nothing could be felt. Surgical considerations aside, I was in favor of making an incision into the brain, but Dr. Senn thought he would surely get an enormous cerebral hernia, and so this was not done. The operation, however, relieved the girl completely for at least three months; that is, the optic neuritis nearly disappeared, the strabismus disappeared, as did practically her hemiparesis. She regained her normal disposition, which, before operation, aside from mental hebetude, had been irritable; she became cheerful and happy and was quite herself. She had no treatment of any kind for about three months following the operation, when the headache returned and she was put upon iodids with some temporary relief. Again, her headache returned, and she did not come back to me. The next thing I heard was that Dr. Fenger was going to operate for the removal of this tumor. I went to see the operation, but it was decided to put the patient on specific treatment, namely, iodids and mercury, which relieved her for about three months. The patient then drifted from one physician to another, until one surgeon, doubting the diagnosis of brain tumor, aspirated supposedly the lateral ventricle, with instant relief. The headache disappeared, but soon returned. Aspiration was again resorted to a number of times, and this being so successful, the apparent conclusion was that aspiration with injection of iodoform emulsion would effect a cure. This was done and the patient died in a few hours.

When the brain was removed, nothing was seen on the surface, but on bisecting the right hemisphere a large, soft growth, broken down and cystic in the center, was seen. It occupied about half of the hemisphere, was subcortical, but had become so nearly cortical that in handling it before it got into my hands the very thin layer of cortex covering the tumor was broken through. The point that broke through was exactly in the arm center. The tumor is a glioma. The case illustrates how brain tumor may, for a time, simulate hysteria, how a subcortical growth may cause typical Jacksonian attacks, what an enormous neoplasm will sometimes be tolerated in the brain and what marked relief may be afforded in cases of non-specific tumor by the administration of large doses of potassium iodid.

This is a brain taken from a patient whom I saw several times, having been called in consultation with Dr. Babcock. He will remember her general medical history a good deal better than myself, as my notes have been mislaid, and I shall have to give it largely from memory. As nearly as I can remember, the first symptom of brain tumor in this case was a typical Jacksonian fit affecting the left arm. She was carrying something at the time and was about to open her door, when she had a convulsion limited to the arm. Soon after, she had another, attended with loss of consciousness. After this the fits were confusing; they were often of the general character of a petit mal, and after she was under observation for some time and we obtained a more distinct and clear history of these fits, it was found that they sometimes began

on one side, and sometimes on the other. The patient was about 40 years of age. When I first saw her I thought it was more likely a case of brain tumor than anything else, and that was about all anyone was justified in saying. There was at that time a little difference in the deep reflexes of the upper extremities. I saw her again some time later, and was reasonably sure that choked disc was developing. This woman had distinct mental symptoms; after a short time her memory became impaired; she had more or less mental hebetude; was nervous and depressed. How much the epileptoid attacks had to do with the mental deterioration I do not know. But she finally died. Dr. Haven of Lake Forest obtained a post-mortem examination, and sent the brain to me.

The tumor is a little smaller than the last joint of one's thumb, and it was a question when the brain was cut whether it was a tumor at all. It has been examined microscopically, and it is a glioma. It is subcortical, and located not in the arm center, but in that for the leg, or perhaps comes down to the junction of the leg with the arm center in front of the fissure of Rolando. I had located it behind the fissure of Rolando. It has not reached the surface. Could it have been located during life and operated upon, I believe the tumor could not have been recognized by an incision in the brain. It was with great difficulty that it was recognized post-mortem, the appearance being as much like a slight echymosis as anything else. In structure and consistency the growth was scarcely to be distinguished from normal gray matter of the cortex, and with the hemorrhage inseparable from an operation, I am convinced no difference could have been seen. From this little tumor at the vertex the patient's condition was very like that of brain syphilis; there was a sort of hebetude; she was sleepy and dull; she could be aroused and would answer rationally, or sometimes a very little at random, a condition so frequently found in syphilis of the brain. She was given large doses of iodid and mercury, to no purpose, and this may have contributed to her great prostration, but medication was withdrawn some weeks before death. It is incomprehensible how a small tumor like this could cause pronounced symptoms for a long time and finally death.

There is another interesting point connected with the case. Here is a small tumor of the convexity which has infiltrated the brain substance, and has caused no displacement, and it is not easy to see how it could cause increase of pressure, yet the patient had optic neuritis. I could compare this, for instance, with a tumor case in which I missed the diagnosis, largely on account of the absence of optic neuritis, and also because of the known fact that the man had had syphilis with unmistakable skin lesions. When, with other brain symptoms, he began to have typical Jacksonian fits, the supposition was that he had syphilitic trouble near the face center, the face and tongue being more affected, sometimes exclusively. But he was treated with heroic doses of specific remedies to no purpose. He then returned to another city, whence he came to see me and where he had been treated for epilepsy by antipyrin, with some benefit. One day he fell dead on the street, and at the post-mortem examination a tumor the size of a hen's egg was found in the face center. This man had no optic neuritis, and yet when I saw him he must have had a tumor not only four or five times as large as this one, but located much nearer the base of the brain, the optic tracts, where it would be much more apt to cause choked disc.

The present case also shows how a tumor located directly in the motor area may cause no appreciable paralysis and may give rise not only to general epileptoid attacks, but to fits being distinctly on the same side of the body.

The third brain I have to present was removed from a patient whom I saw Dec. 15, 1898. The history of the case is that of a middle-aged traveling man, who first noticed in the summer of 1898 that he was a little more nervous than he should have been, that he was a little dizzy at times, and particularly that he had trouble in making out his reports accurately. In sending in accounts and orders and in making up papers of any kind or in keeping books, he was apt to make errors. When his physician related the case to me I concluded that it was probably one of general paresis, and it comes in very nicely with Dr. Lenke's case, because there was a history of a little dizziness, some nervousness, impairment of memory, inaccuracy in

making up accounts, and finally, the patient had several fits. He had, at first, what appeared to be fainting spells, and finally general convulsions. For two or three months previous to the onset of these convulsions he had trouble in reading and writing. On examination, several interesting conditions were found; among them weakness on one side of the body, homonymous hemianopia, word-blindness, motor aphasia, and double choked disc. Vision was rather poor, which might have been ascribed to the optic neuritis, but the difficulty in reading was clearly due more to word-blindness than to failure of vision. When I saw him the motor aphasia was more pronounced than the sensory (visual) aphasia, which led me to make a mistake as to localization. I got the Wernicke sign, and from this, with the motor aphasia, I concluded that he had a tumor in the temporo-sphenoidal lobe, deep in, but near enough to the base to compress the optic tracts. This was a mistake. At the post-mortem a subcortical tumor was found in the parietal lobe, extending back as far as the parieto-occipital fissure, and forward almost as far as the operculum. If I had paid more attention to his word-blindness, and less to motor aphasia, I would have located the growth a little farther back. Dr. Herzog has made a microscopic examination and it, like the other two, is a glioma.

I have seen two cases in which a diagnosis of general paresis was made by eminent men until the ophthalmoscopic findings made it necessary to re-examine, when other symptoms of brain tumor were found. At least two cases of brain tumor have come under my observation in which there was mental exaltation, such as goes with general paresis. One was a girl with a frontal tumor—the diagnosis being made ante-mortem—on the right side. She has no delusions of grandeur, but she had the flippancy, happy, elevated, pseudo-witty manner of the general paretic. I have still under observation a man who undoubtedly had, and now has the remains of, a right frontal glioma. He was very optimistic regarding his condition, his future, and particularly regarding an invention on which he was working, or claimed to be working, and still shows somewhat this mental elevation, with a tendency to joke and laugh without sufficient cause. In frontal tumors this has been noticed by Oppenheim, Williamson, and one other author, whose name I cannot at present recall.

I saw last winter a case of brain tumor which for a time closely simulated general paresis, in a man who peddled soap to grocers. He first noticed that he could not keep track of his route. He forgot his customers; he forgot to deliver orders, and became absent-minded. The family then remarked that he would start for the stable or another part of the house and forget his object. Not long after, he was found unconscious in his wagon, having evidently had a fit. In a word, that is the history of general paresis; gradual mental failure and a fit of some kind.

I might mention another point in connection with the girl who exhibited mental exhilaration. I saw the case about two and a half years ago at the clinic of the Northwestern University Medical School. She became worse during the short time she was under observation, and began to have slight fits, which she had never had before. I told her aunt, whom she was visiting, that she might as well be sent home, as nothing more could be done for her, and that she could not live long. A couple of months ago I wrote the parents asking to know of the further course of the case, and when the girl died, and I received a letter from them saying that she was not dead; was, indeed, somewhat better, but was having severe fits.

In connection with that case, as also illustrating the occasional slow course of tumor, I will mention that of a man who first came under my observation three years ago in January. He presented himself with a history of severe headaches for the last four years. I do not know whether the headaches were caused by brain tumor or not, but they apparently were. At any rate, he gave sufficient symptoms to warrant a diagnosis of brain tumor, including intense double optic neuritis with homonymous hemianopia. Since under observation, he has presented no localizing symptoms other than hemianopia. He never has had any paralysis. The knee-jerks, although they could be obtained only with reinforcement, were always thus obtainable. His headaches, although very intense, were relieved for a considerable period by potassium iodid, notwithstanding that there was no evidence of syphilis. He passed

from observation, and I supposed he was dead until he walked into my clinic a few days ago. He is now blind, optic atrophy having succeeded the choked discs. I believe there is a tumor in the man's brain which has been latent for three years. He has had no headache during this time, but now it is beginning to return.

While I was lecturing on him at the Policlinic, I was hurriedly called to see a case that offers a striking contrast to the two just mentioned. There was a history of severe stomach trouble for a few weeks; vomiting; headache; coated tongue; high-colored, scanty and exceedingly acid urine; foul breath; no appetite, and general prostration, and as these symptoms had followed upon a period when the patient had been eating and drinking more than usual for him, it was natural to conclude that his was a gastro-intestinal trouble. The headaches required morphin on one or two occasions to relieve them. Suddenly he became comatose, and a few hours later, before bedded, double optic neuritis was discovered, and then it was learned that for several days his wife had noticed that one arm and hand were clumsy and noticeably disabled, and that in getting out of bed the leg on the same side had given way several times. The attending physician also recalled that for about a week the patient had been somewhat changed mentally, being rather in-consequent, indifferent, and unconcerned about his condition. The supposition is that this was a case of brain tumor which shows, in contrast to the other cases, how exceedingly rapid the course may be.

I spoke a moment ago of apoplectic termination in a case of brain tumor, aside from death due to sudden heart failure. About four years ago I saw such a case in a man who gave a history of slight numbness on the right side which had existed for about three months; this was followed by headache and vomiting, and then a sudden right hemiplegia, and it was when the last came on that I saw him. He then had homonymous hemianopia, undoubtedly due to extensive thrombosis. He had intense double optic neuritis. On that symptom with a history of progressive numbness on one side and headache following and some vomiting, I made a diagnosis of brain tumor. The hemiplegia, which was very pronounced and accompanied by complete aphasia, did not improve materially as long as he was under my observation, nor did it grow worse, and I believe that the thrombosis shut off the blood-supply to the tumor, and that consequently it remained latent.

A word regarding operations for the removal of brain tumor. The cases presented illustrate how futile surgery is. My personal experience is this: In over 35 cases seen in four and a half years, in which I made a diagnosis of brain tumor, I have advised operation in only two for the removal of the growth. The first was the girl whose brain I first showed this evening; the other was a case apparently very favorable for operation, and in that case operation was declined, and I now learn from Dr. Church that the patient is alive, three years afterward, so that as far as my own limited experience goes, the operative treatment of brain tumor does not hold out much hope, 1, from the fact that so few cases can be operated on; 2, the results are poor in those cases that are operated on.

DR. SYDNEY KUH—I would like to report, very briefly, a few cases which illustrate the difficulties we encounter when we attempt to make a diagnosis of brain tumor. The first patient was an old man, whom I did not see until the post-mortem was made. He was under the observation of Professor Vierordt, in the Policlinic at Heidelberg, for quite a while. A diagnosis of tumor of the liver was made, and there were absolutely no symptoms indicative of a cerebral lesion. The patient had violent pain in the region of the liver; the diagnosis was that of secondary carcinoma of the liver, the primary lesion being thought to be in the stomach. It was necessary to give hypodermics of morphia to relieve the pain. Gradually the morphin lost its effect, and one day, when an unusual dose was given, the patient became comatose, which was attributed to the injection, and within twenty-four hours he died. Post-mortem examination revealed no lesion in the stomach and a number of small tumors in the liver. Besides this, a tumor, very nearly the size of a hen's egg, was found in the cerebellum, which had destroyed all of the vermis superior of the cerebellum with the exception of a layer, which was not thicker than ordinary cardboard. Here was a case in which the very part of

the cerebellum was destroyed, the destruction of which is supposed to give rise to cerebellar symptoms. Up to twenty-four hours before the man's death there was not a single symptom of brain tumor, though the tumor must have existed for a long time.

Another interesting case I mentioned briefly at a meeting of the Chicago Medical Society a few weeks ago. It was that of a boy of 13 years, who was brought to the physician by his parents on account of short attacks of mental disturbance, which were followed by violent headaches. As far as I can remember, he had three attacks before I saw him. I had occasion to witness one of the attacks, and they were as typical as anything could be of mental epilepsy. During the attack which I saw, he had hallucinations, and the things he saw were mostly in red—a supposed characteristic of the epileptic hallucinations. A diagnosis of epilepsy was made, and some time afterward we were very much surprised to find symptoms of brain tumor, from which the boy died. It proved to be a gliosarcoma of the brain.

A third case of some little interest is one of a child, 4 years of age, who came under my observation in the late stages, and no accurate history of development of the disease could be obtained. At the time I saw the child secondary atrophy was well developed and all the other general symptoms of brain tumor. The skull, which had been of normal size, was very much larger than the normal, and one could place his fingers into the sutures, they having all opened up again. But the most striking feature about the case was Jacksonian epilepsy, which affected the right side of the body. In that case a post-mortem was made, and a large tumor was found, which had destroyed the greater portion of the right hemisphere of the brain, so that we had here Jacksonian epilepsy on the side of the tumor. The explanation for this peculiar state of affairs was probably this: that the tumor on the right side of the brain pressed upon and irritated the left hemisphere, and in that way caused Jacksonian epilepsy.

Dr. Patrick has called our attention to the fact that in one of his cases a small lesion had caused death of the patient. I recall the case of a man, about 33 years of age, who had for some time suffered from the general symptoms of brain tumor. He died within a day after I had first seen him. At the post-mortem a cyst not larger than a small cherry was found in one of the hemispheres of the cerebellum. There was absolutely no sign that it had developed recently. A pathologist examined the brain macroscopically, but I do not know whether a microscopic examination was made or not. He was of the opinion that the cyst was congenital, and the fact that so small a cyst of 33 years' existence should cause sudden death is difficult of explanation.

In speaking of the surgery of brain tumors, there is one symptom which I think is of some importance in determining whether there is any probability of giving relief by means of an operation or not, and that is the occurrence of headache. Where headache in tumors of the brain is a late symptom, it is certainly more probable that the tumor is deep in the brain. Where the headache occurs at an early stage, it is more probable that the tumor is either cortical or subcortical, the pain not being due to any change in the brain proper, but to irritation of the membranes of the brain. I know of one case in which Jacksonian epilepsy occurred and an operation was not performed because of the late occurrence of the headache, and in this case the post-mortem showed that the refusal to operate was justified, the tumor being very deep down.

In regard to the case of Dr. Lenke, Dr. Patrick mentioned the fact that he noticed something similar to cerebellar ataxia. It is about ten years since Bruns reported cases of tumor of the frontal lobe with cerebellar ataxia. Since then so-called cerebellar ataxia has become a well-recognized symptom of tumors of the frontal lobe.

Cases of brain tumor with symptoms of hysteria, such as Bristow published some years ago, are rare. I recall one case, published by Schoenthal in the *Berliner Klinische Wochenschrift*, in which a diagnosis was made of hysteria, and which seemed well established until the patient died and a tumor of the brain was found post-mortem.

(To be continued.)

Chicago Society of Internal Medicine.

Meeting held May 25, 1899.

The subject for informal discussion was

PROPHYLAXIS AND MANAGEMENT OF APOPLEXY.

DR. N. S. DAVIS, JR. opened the discussion, and said: The causes of apoplexy, almost uniformly, are thickening, and hardening, and brittle condition of the arteries. This condition is usually not confined to the cerebral arteries, but is common to many arteries in various parts of the body, although the lesion is frequently more marked in the cerebral than in other arteries. The exciting cause of rupture of an artery is change in blood pressure. It may be the result of sudden physical exertion; sometimes it is produced by intense mental strain or by overaction, usually temporary, of some of the viscera, as of the digestive organs. Occasionally a change in posture is the exciting cause of increased blood pressure. Unquestionably, in some instances, distension of the bladder has an influence, particularly in old people. A very considerable distension of the bladder increases it, and the recumbent posture heightens it still more. Frequently the occurrence of apoplectic attacks at night can be explained in this way. In very many instances patients first discover that they are paralytic when they are awakened by an inclination to make water. I speak of the milder cases which are met with every now and again. Brittleness of the arteries, or permeability, or easy rupture of them may be caused in other ways. Miliary aneurysms of the cerebral vessels are common. These are usually due to the same cause or causes as ordinarily produce thickening, hardening and brittleness of the arteries generally, and are only a part of the atheromatous state. They, however, occur also as a result of syphilitic poisoning, and less frequently from other infections. With these facts before us we can to some extent, reason as to prophylactic measures.

Prophylaxis is rarely applied to the sclerotic changes in the arteries, for these lesions are fully developed, as a rule, when a patient consults his physician. Abstemiousness—diet, in mental and physical work, will help to prevent the growth of the lesions. The iodids can be given to lessen arterial tension, and to some extent, to influence the fibrotic changes that are taking place in the arteries throughout the body, but they exert only a slight influence on the fibrous or atheromatous change; indeed, it is so slight as to be not demonstrable in many instances. The long-continued use of the iodids, which is so often recommended in such cases, is useful because of their influence on arterial pressure, more than on the fibrous or sclerotic changes in the arterioles. Although the underlying arterial changes can be influenced only slightly, blood pressure can be to a considerable extent. Unusually high arterial tension must be lowered. Patients should be cautioned against over-exertion, either physical or mental, and against overloading and overtaxing the digestive organs; they must also be cautioned to maintain regularity of bowel movements, as high arterial tension is often produced by constipation, and by overloading the gastro-intestinal tract. By dietetic restrictions, and by instructing patients with reference to the importance of emptying the bowels regularly, we can to a considerable extent prevent continued ill-effects which may be produced by the absorption of toxic materials from the intestinal tract. These toxins are believed by some to be the immediate cause of the arterial changes. It is, therefore, very important to maintain cleanliness of the gastro-intestinal tract in order to influence arterial pressure and to prevent absorption and the ill-effects of toxic agents on the arterioles generally.

Aside from these hygienic measures, we can also help to prevent the high arterial tension by the use of such drugs as the nitrates and the iodids. The nitrates usually produce a fleeting effect on arterial tension. They are to be used temporarily when the results of high arterial tension are particularly threatening—I mean when there are symptoms of pressure on the brain, or when there are symptoms connected with other organs of the body, showing that there is increased arterial tension, possibly persisting for some days. It is during this time that the nitrates can be advantageously used. The nitrates must be rather frequently administered, or else we get very temporary effects from them. The effects are so transitory that they can hardly be regarded as producing much of a prophylactic influence.

On the other hand, the iodids produce very much less influence on arterial tension, but what effect they do have is much more prolonged; they are therefore decidedly better for persistent use. In almost all cases in which it is desirable to lower arterial tension, they are the drugs to be preferred. Of the iodids, unquestionably the iodid of soda is the best for long-continued use. It is necessary in some cases to give the iodids in doses of considerable size; in others moderate doses will produce the desired effect; by moderate doses I mean from 8 to 10 or 15 grains at most.

In giving the iodids, it is generally recommended, by therapeutists, to give them for long periods of time, and for the particular purpose of reducing arterial tension they can be continuously given for weeks. An intermission of from one to two weeks should be advised, every four to six weeks, and during the intermission, if it is necessary to use anything for the control of blood pressure, use the nitrates. The iodids should not be employed so continuously that the digestive organs are deranged by them.

DR. CHARLES W. PURDY—The prophylaxis of apoplexy may be summed up in "measures to lower tension." Of those means we might take the hygienic, and under that head would come clothing. We know that the skin contains a large amount of blood ordinarily, and a sudden chilling of the skin throws quite a volume internally which goes to swell the circulation in the larger vessels, and an equable temperature of the skin is, therefore, a very important point in the hygienic treatment, as it tends to equalize the circulation. The regulation of the bowels is a very important matter, and nothing tends so quickly and so sharply to withdraw the blood from the cerebral vessels as a purge. When there is reason to believe or to fear that apoplexy is impending, the best remedy is a sharp purge. But that comes more properly, perhaps, under the head of medication. The condition of the stomach and the quality of the food are very important in their hygienic relationship. For instance, it is very important that all foods that tend to increase tension should be cut off, mostly the animal foods and nitrogenous vegetables. The amount of exercise should be regulated. A patient should not be allowed to exert his full strength at anything. Anything calling for sudden efforts he should be cautioned against. With regard to meals, it is an excellent plan to have frequent ones. Rather than large meals, there should be more frequent ones, perhaps four meals a day instead of three, and food should be strictly limited in quantity. These patients should get up from the table feeling they can eat more. Under no circumstances should they eat heavily, and, above all, they should not eat bulky foods, soups, etc.

There is one point Dr. Davis did not mention, which is an accompaniment of apoplexy, and statistics will show that it runs up in some instances to 60 or 80 per cent., and that is uniform enlargement of the left heart. We can understand why this is. With a powerful left ventricle, with atheromatous or degenerated vessels, we can readily see how blood tension must be enormously increased. Such hearts should be treated, and it is surprising how frequently and rapidly the left heart can be influenced by dietary treatment. It is not at all uncommon to find a left ventricle that measures 12 cm. from mid-sterum to the left border, taken down on a non-nitrogenous diet in from four to eight months, so that it will measure 9 or 9.5 cm. We should invariably inquire into the condition of the left ventricle, because it underlies a large number of these cases, and the diet should be arranged accordingly.

The medicinal treatment, as Dr. Davis very practically and concisely states, is limited to the vasodilators, of which the iodids in moderate doses are perhaps the best for continued use. The nitrates are evanescent in their effects, unless they are frequently repeated, and the doses frequently increased. In these conditions I give the iodids after meals, preferably the iodid of sodium; about an hour after iodids I give nitroglycerin.

It is important that we should bear in mind certain things we should not give to patients with apoplexy, and among those I would mention digitalis and that group as being exceedingly dangerous. The patient should be cautioned regarding their use. Those drugs should not be taken under any circumstances. The same may be said of opiates.

There is one more point that may be said with reference to

drugs, namely in the use of bromids. Bromids have an excellent effect on the nervous system. We know the nervous system influences tensions very much. It does more than that; I believe full doses of the bromids lessen the actual volume of blood in the head. Alcoholics should be absolutely avoided.

DR. HUGH T. PATRICK—Do not know whether I correctly apprehend the subject for discussion, but as I take it, we are talking about the clinical appearance or syndrome that is called apoplexy. The first point which I wish to make, and which I consider to be exceedingly important, is this: that in the current understanding of practitioners, which understanding I think has cropped out so far in the discussion, apoplexy is taken to be synonymous with cerebral hemorrhage. The term may be used in that sense, which is certainly a false and unjustified sense. The term apoplexy means a sudden attack involving consciousness more or less, and accompanied by more or less paralysis, generally of the hemiplegic form. If we take this general and proper acceptance of the expression, then the more frequent cause of apoplexy, taking the grave and lighter cases together, is not hemorrhage. When we speak of apoplexy as due to thrombosis, vascular occlusion or vascular rupture, a primary and fundamental distinction must be made clinically as well as pathologically, because the prophylaxis and the management of the state itself must be radically different in the two conditions. To begin at the beginning, the premonitory symptoms of apoplexy have been alluded to. There are no premonitory symptoms of cerebral hemorrhage, properly speaking. Cerebral hemorrhage is caused, in the vast majority of cases, by the rupture of a miliary aneurysm, and a miliary aneurysm causes no symptoms whatever. Therefore, the premonitory symptoms of cerebral hemorrhage, properly speaking, are *nil*. They belong to the condition of the heart and of the kidney, and not to the condition of the cerebral vessels. When there are marked premonitory symptoms, aside from those of uremia, and hypertrophy of the heart, etc., they are indicative of vascular occlusion, i. e., of thrombosis, and not of hemorrhage. That is a distinction which I think is exceedingly important clinically. On this distinction must be based the prophylaxis. The prophylaxis of cerebral hemorrhage has been exceedingly well dealt with. We cannot often predict a cerebral hemorrhage before it occurs, but we can anticipate thrombosis in many cases because the premonitory symptoms are frequent and numerous. For instance, vertigo, of which Dr. Purdy spoke, is exceedingly rare as a premonitory symptom of cerebral hemorrhage, aside from its occurrence as a symptom of chronic Bright's disease, which exists in a person who is going to have a hemorrhage. A vertigo caused by the local circulatory changes which precede cerebral thrombosis is exceedingly frequent, and in such cases we frequently get a history of repeated attacks of vertigo; perhaps an attack of aphasia, then an attack of numbness, with weakness in one extremity, perhaps more frequently an arm, possibly affecting the face and side of the tongue, which subsequently becomes more marked, and a complete hemiplegia develops. This is a case of thrombosis, not hemorrhage. Such a history is typical of thrombosis. In the prophylaxis of thrombosis two things are to be considered: 1, the weak heart, and slow circulation which generally exists; 2, diminished caliber of the cerebral vessels. Common sense will indicate what is to be done in most of such cases.

To go back to the original point, the practitioner must be clear in his mind whether he has a case of cerebral hemorrhage or of cerebral thrombosis. Of the two affections, probably thrombosis is the more frequent. Alcoholics may not only be given, but should be given. In more than one instance have I seen a patient with thrombosis, apparently very imminent, who had been dieted, taken off of meat and put on restricted diet, and his arterial tension lowered when it was already too low, improve considerably on rather liberal libations in the form of beer, and on remedies which increase arterial tension and increase the rapidity of the arterial current and strengthen the heart. Those are also the principal considerations in the management of the apoplectic state itself. The great majority of cases I see are in consultation with other physicians, and I was almost tempted to say that I have yet to see the first case in which a diagnosis of thrombosis had been made: that would not be true, but it would be nearly true, because in almost

every case of apoplexy which I see with other physicians, a diagnosis of hemorrhage has been made, simply because it has been a more or less pronounced attack of apoplexy. I believe the majority of cases are not due to cerebral hemorrhage, but to thrombosis, with an occasional embolism, which is rare. Here, again, the treatment, based on a faulty diagnosis, has been faulty. The head has been raised; cold has been at once applied, sinapisms, and active purges, etc., to lower arterial tension, especially in the brain. In other words, every possible means has been employed to favor the formation and continuance of the clot which has already formed in the vessels. I am convinced that many a mild case of apoplexy, due to thrombosis, has been aggravated by treatment directed to the misunderstood symptomatology, and that many a patient with impending thrombosis has had the process hastened and brought about by remedies directed to the prevention of cerebral hemorrhage. This is not the time to make up the diagnosis either before or after the fact, but in my opinion it is exceedingly important to make a trenchant distinction, because such cases of thrombosis, as well as cases of cerebral hemorrhage, are, and ought to be classed as apoplexy.

DR. M. L. GOODKIND—I agree fully with the remarks made by Dr. Patrick. In those cases in which arterial tension is very high and hypertrophy of the left heart is marked, I have found aconite a very useful agent. Where nitroglycerin has been given in a similar manner, and in solution, where the amyl nitrite or iodid of potash has been used and failed, patients have frequently responded to aconite.

DR. JOHN H. HOLLISTER—I desire to endorse the view expressed by Dr. Patrick, that it is entirely essential for us to determine the nature of a condition before formulating treatment. The condition in which we have incipient vertigo, gradual increasing arterial pressure and increased action of the heart, incompressible pulse and lividity of countenance is essentially different from that in which almost the opposite condition prevails, and in which we have evidence of a sudden, perhaps slowly progressive, paralysis, resulting from embolism. I recall a case of very pronounced hemiplegia which recently came under my care, and from which the patient is now slowly recovering. It was the result of embolism. The patient had previously suffered severely from inflammatory rheumatism; there were vegetations on the valves, and, as near as I could diagnose the case, there was not only retarded circulation, but there was a slight cerebral hemorrhage resulting from it.

With reference to cases in which immediate, and, what we may call heroic, treatment is demanded, particularly in those of severe blood determination to the head and great pressure, I recall the time when the ruling instruction was venesection. I have on several occasions, in emergencies, when my lance was not at hand, placed the patient as soon as possible under the influence of tartrate of antimony. Its sedative influence on the vagus is pronounced, and it answers the purpose admirably if not carried to the point of emesis, and one can guard against it if accustomed to the use of antimony, by holding it there for a period of from twenty to twenty-four hours. I recall three or four cases in which blood pressure was lessened by the administration of tartrate of antimony, and the patients were brought to the point of nausea, kept in that condition, and the pulse being reduced to 45 and 50 per minute. I consider tartrate of antimony preferable to either of the articles that I have heard mentioned to-night in cases of emergency.

In regard to the other cases in which we have miliary hemorrhage, they need sustaining treatment, lessening the volume of circulation by catharsis and by a general course of treatment. As has been stated, there are many cases in which we need to sustain the patient rather than produce a depressing influence on the nerve-centers.

With reference to persons of sedentary habits and those who are constipated, men who are actively using their minds day after day in intellectual work are making a fearful mistake in this country. I think we are witnessing direful results very frequently by the rapidity with which that class of men are taken off. We had an instance of this in one of our noted politicians not long since, a great statesman, who, after having made a speech, went to the Palmer House, and died that evening of cerebral hemorrhage, as was verified by autopsy. This

class of men and those who are following them should change their course of life in some respects. While intellectual labor is essential, there must be more periods of rest; and not only that, we are making a great mistake when we do not require of our active business men more manual exercise. There should be a systematic training of the muscular system so as to equalize the circulation throughout the different organs of the body. Our intellectual men should adopt a systematic form of manual exercise so as to avoid collapse at the age of 60 or 70, diverting the blood from the nerve centers and notably of the brain. If the circulation was improved by massage of the viscera, by a series of exercises well directed to the activities of the body, we would in another generation change the mode of living, which is certainly becoming a marked feature of the conditions of our intellectual men. I have had this impressed on me within the last ten years as to the many eminent men who have been taken off within from five minutes to five hours, due largely, I think, to the fact that their methods of living have been erroneous in this respect.

DR. HAROLD N. MOYER—I would like to emphasize a few points made by Dr. Patrick. There is no question but what apoplexy includes a number of conditions. It is very essential to a correct diagnosis, that we differentiate between them. From the remarks of Dr. Patrick, one is perhaps led to the inference that the diagnosis is easy.

DR. PATRICK—Oh, no! I did not mean that.

DR. MOYER—The diagnosis of thrombosis and embolism is one of great difficulty, and, as Dr. Patrick points out, the treatment of those two conditions is diametrically opposite. What is suitable for one is generally unsuitable and improper for the other. Take, for example, hemorrhage. If it is present, we should elevate the patient's head in a semi-upright position. On the other hand, if he has thrombosis he should lie in the prone position, so that in cases of doubt regarding the diagnosis between the two conditions, I should feel inclined to split the difference and put them half way up, so that it comes near fitting both conditions. There are forms of cerebral hemorrhage that are strikingly like thrombosis, and I would not agree with him that a case of cerebral hemorrhage is wholly devoid of premonitory symptoms. I now speak of those symptoms which belong to the progressive apoplexies in which there is a slow effusion of blood, and in which the diagnosis between the two conditions is practically impossible.

The point raised by Dr. Hollister, regarding intellectual labor in its relation to brain troubles, is one of interest, and yet statistics, so far as they can be applied to such a subject, rather show that intellectual activity and intellectual occupation protect one from disease of the brain. The gross forms of brain disease as well as degenerations are exceedingly common among the agricultural people, who largely use the muscles and to a great extent neglect the use of the brain. The circulation of any organ and its nutrition are improved by proper use, so that great mental activity is consistent with long life and good health, provided that the cells of the part and the small blood-vessels are not poisoned. The value of exercising muscles comes not so much from the fact that the blood is diverted from the brain, but is rather due to more perfect oxidation; we have a more perfect metabolism by which certain poisonous products are eliminated from the system, or are not formed. In this way we prevent auto-intoxication, which is the chief cause underlying cerebral hemorrhage, and to a large extent cerebral thrombosis. They are generally due to auto-intoxication.

DR. N. S. DAVIS, JR.—I should like to add a word or two to my previous remarks. Unquestionably the word apoplexy is commonly applied to cover both cerebral hemorrhage and thrombosis and embolism. It is unfortunate that it is so, but not strange, because of the difficulty of making a diagnosis between the hemorrhage and thrombosis or embolism. A diagnosis can often be made, and when it is possible a clear distinction should be made between the two affections. As to the applicability of the word apoplexy to both of these conditions, I doubt it, for pathologists teach us that the word apoplexy, implies a hemorrhage. We know of cerebral apoplexy, pulmonary apoplexy, and renal apoplexy. It means a hemorrhage only.

DR. HAROLD N. MOYER—I do not think Dr. Davis has correctly stated the genesis of the word apoplexy. It was used by Hippocrates, and its correct etymology signifies, literally, I strike down, or to strike down, and in that sense it was applied to a sudden fall and loss of consciousness from whatever cause. When anatomic studies in the early part of the last century were begun, it was found that many of those persons who had a stroke had an effusion of blood into the brain. The result was that the word, although etymologically incorrect, was associated with cerebral hemorrhage by expansion. The same term was used to designate hemorrhage into the liver, kidneys, or other internal organs. That, I think, is the true genesis of the word apoplexy. The earlier writers were perhaps more correct in the use of the term; certainly, they were etymologically.

I would call attention to the point made by Dr. Patrick in regard to alcoholics. He distinctly mentioned beer. Dr. Davis has in mind some of the stronger alcoholic preparations. The effect of beer and of the more concentrated alcoholics is very different. Beer contains a large proportion of vegetable nutrient, besides alcohol, and its effect on the pulse and circulation is different from the more concentrated alcoholics.

DR. S. A. MATTHEWS—In administering alcohol in concentrated form, the first effect is to cause a rise of blood pressure. This I have repeatedly demonstrated on animals, by taking kymographic tracings. But following this rise, the blood pressure begins to go down so the main effect of alcohol is to lower blood pressure. With regard to giving these patients beer, a patient taking a glass will get a certain percentage of alcohol, probably a dram, which will have a characteristic action. The large amount of water that is imbibed by the tissues after drinking beer causes a rise in blood pressure, and on that account it would be of benefit in thrombosis or in conditions where we want a rise in blood pressure. It is absolutely incorrect to say that there is no increased arterial tension from the administration of alcohol. There is; I have taken hundreds of kymographic tracings in cases where alcohol was given, and the initial dose always caused a rise in blood pressure, the after-effect being a lowering of blood pressure.

DR. EDWARD F. WELLS—I am a little surprised at the statements made by our neurologic friends, to-wit, that the vast majority of cases of apoplexy are of thrombotic, rather than of hemorrhagic origin; in other words, that such cases are very much more frequent than hemorrhagic apoplexies. Personally, I have seen comparatively few cases in which I have felt competent to make a diagnosis of apoplexy due to thrombosis. Occasionally I see a case in which it is difficult to differentiate cerebral hemorrhage from embolism, although, as a rule, I do not consider such diagnosis very difficult. Almost always, in embolic cases, we have evidences of mitral narrowing with roughness of the mitral valve. Under these circumstances we may reasonably infer that the symptoms of apoplexy are due to embolism. It may be granted that, in apoplexy, thrombosis is often the lesion, especially in those cases in young or middle-aged persons in which recovery ensues in a very large proportion of cases, unless death is sudden. But I believe that physicians engaged in general practice see a much larger number of cases of apoplexy, evidently due to rupture of blood-vessels within the brain; this not only from a clinical standpoint, but from a post-mortem point of view as well. I have had opportunities of seeing a larger number of post-mortem examinations in cases of death from apoplexy, and the lesion in such cases has been, almost always, a hemorrhage, and, as Dr. Patrick pointed out, there is not only a hemorrhage, but evidences of miliary aneurysms in the brain as well.

As to the treatment of apoplexy due to hemorrhage, it is certainly reasonable to consider the prophylaxis, and this should begin a great many years before hemorrhages occur. I have been impressed with the theory that lithemia is responsible for many of the vascular changes which lead, ultimately, to arteriosclerosis, enlarged left ventricle, increased arterial tension, interstitial nephritis, miliary aneurysms and cerebral hemorrhage. The means of prophylaxis, as is well known, are to be found in the diet and regimen of early middle life, as pointed out by Dr. Davis and Dr. Purdy.

I would like to ask Dr. Patrick, what measures, if any, can be taken to prevent the formation of a thrombus.

DR. HUGH T. PATRICK—I seem to have been misunderstood by the vast majority of the speakers. In the first place, I did not say that the vast majority of cases of apoplexy were due to thrombosis. The great discrepancy is not in the proportion of cases, but in the proportion of diagnoses. My observation is that a diagnosis of hemorrhage is made practically always, whereas, taking all cases together, the grave with the slight, and with-out premonitory symptoms, thrombosis is the more frequent. The preponderance is not great. Taking the fatal cases alone, cerebral hemorrhage preponderates; there is no doubt about that. The majority of cases of a single sudden stroke, with death occurring within a few hours or days, are due to hemorrhage, while taking the slight with the grave cases, the majority are due to thrombosis. I have especially considered embolism because it stands by itself. A sudden hemiplegic attack with heart disease is considered to be the result of embolism; that is really about as nearly as we come in making a diagnosis of embolism. Dr. Purdy, I think, misunderstood my statement, when he says that there are premonitory signs of hemorrhage. There are premonitory signs, but they are such as are connected with the circulatory system, as determined by sphygmographic tracings and the condition of the heart. Those are hardly to be considered premonitory symptoms of hemorrhage itself. They are not referable to the cerebrum; they do not belong to the same class of symptoms; there is no premonitory slight weakness, dizziness, etc.

Dr. Moyer is right about the term apoplexy. The word, as originally used, meant a stroke. Then Galen amplified it and it was applied to those cases in which there was complete loss of consciousness and complete loss of power, except that respiration remained intact. Later the exception was made to include the circulation; there was a complete inhibition of faculties except the respiration and circulation. In the neighborhood of a hundred years ago it was discovered—I think by Rochoux—that nearly all of the fatal cases of apoplexy were due to cerebral hemorrhage, and although some time following this there were half a dozen men—especially Requin, and Rostan in his work on cerebral softening, 1819—who showed that this condition was due to other causes, still that discovery has remained to bias the medical mind to this day. I am glad Dr. Wells announced the subject as he did, because in my opinion a correct apprehension of the subject is very important, and the fact that the expression "apoplexy" has led to misapprehension and confusion in this Society, the highest medical court in this city, shows that it ought to be cleared up in some way. In the minds of practitioners at large, a sudden stroke means a cerebral hemorrhage. If the members will simply consult authorities, the men who have investigated this subject and are supposed to know what they are writing about, they will find my statement substantiated, possibly sometimes qualified. Gowers, I think, says, taking all cases together, there are probably more of thrombosis than of cerebral hemorrhage. If we take the slight with the severe cases, then thrombosis predominates. Thrombosis rarely kills the first time; but hemorrhage frequently does. The idea that a man must have two or three hemorrhages is a great delusion.

With reference to treatment, I wish to say a word about tetrinitrate of erythrol, which apparently has a future in the treatment of these troubles, but its price at present is such as to almost prohibit its use. I have obtained excellent results with it, and have given it as long as the patients could afford to pay for it, but in some instances I have stopped giving it because they objected to the price. It is an extremely useful agent, because its action is so much slower and so much more prolonged than that of nitroglycerin.

Colorado State Medical Society.

Twenty-Ninth Annual Meeting Held in Denver, June 20-22, 1899.

(Continued from Page 227.)

THE RATIONAL TREATMENT OF GLEET.

DR. J. M. BLAINE advocated the use of tonics and electricity. He uses a weak galvanic current, 1 to 1.5 milliamperes. The application should be repeated once a week. In strictures of moderate age and medium size he uses galvanism from the start. He finds that where galvanism is used it leaves the

surface smooth and destroys all granular tissues, which are sure to be found back of the stricture.

TETANUS TREATED WITH ANTITETANUS SERUM.

DR. T. G. TAYLOR reported the following case: Mrs. J., mother of two children, gave a history of a long series of miscarriages, and stated that for several days she had been flowing excessively, and something had passed, but was destroyed without examination. She strenuously denied having in any way induced an abortion. The vagina was tamponed with an antiseptic solution, and next morning she complained of stiffness of the neck and jaws, not being able to separate her jaw muscles more than a half inch. She complained of soreness in the thoracic muscles; temperature, 99.5; pulse, 95.

The uterus was curetted and irrigated with a solution of bichlorid, 1-4000, and 4 c.c. of P. D. & Co's. antitetanus serum injected under the skin of the abdomen. On the following day the stiffness of the neck and jaws was found nearly gone, but she was given an additional injection of 6 c.c. of the serum. The patient made an uninterrupted recovery.

OBSTETRIC LACERATION OF UTERUS, VAGINA AND PERINEUM—SIGNS, SYMPTOMS AND SEQUELS.

DR. JESSE HASTES, considering the gynecologic and obstetric aspect of the subject embraced in the above title, referred to the psychologic correlation existing between the sexual organs and conjugal love. The condition of the sex organs, he said, markedly modify the sexual instinct, and through the sexual instinct and appetite modify conjugal affections. Healthy normal sexual organs under the influence of a chaste normal mind are a portion of the human organism designed to express the manifestations of love. He would urge on physicians to recognize this relationship.

THE USE OF SALICIN IN ACUTE RHEUMATISM.

DR. J. W. CLINE gives large doses of salicin, with invariably good effects. He gives 30 grains every hour, till pain lessens, and then every two hours until all pain, fever and most of the swelling has disappeared, which occurs as a rule in from twenty-four to forty-eight hours.

PROBLEMS IN RURAL SANITATION.

DR. J. TRACY MELVIN has adopted the following contrivance whereby ashes can be used for the purpose of disinfecting and deodorizing the contents of the outhouses in rural districts: An ordinary-sized brick vault is built and cemented on the inside. The total depth should not be over four feet, half above ground and half below. A frame with drop door about sixteen inches by three feet is built into one side of the vault above the ground, to enable its contents to be removed. Upon this vault the ordinary outhouse structure is built. Attached to the rear, on a platform placed at the height of the top of the vault, is built a brick ash-chamber, four feet square, with a cover. An opening four inches by four feet is then made between the ash-chamber and the outhouse, opening about six inches below the seat-board. A board of the same size as the seat-board, with openings corresponding to those of the seat-board, these being closed on the under side by trap-doors fastened with strong spring hinges, is fitted into the space beneath the seat-board on a level with the floor. This brings it two inches below the opening from the ash-chamber. Ashes now poured into the ash-chamber can only pass down to this false bottom, and when this is covered two inches deep, or to the level of the opening, ashes will cease to flow, even if the ash-chamber is filled to the top. Any deposit now falls into this bed of ashes immediately over the trap. A sash cord fastened to the free edge of this trap, and passing backward over a pulley and up to a handle above the seat-board, enables one to quickly drop the ashes and deposit to the bottom of the vault, the spring hinges close the trap, ashes will automatically flow in, up to the former level, and all is ready for a repeated use. This false bottom should be covered with zinc and an ordinary fire-hook should be kept to assist in spreading the ashes, should they for any reason become clogged.

PREVENTION OF CERTAIN COMMUNICABLE DISEASES IN COLORADO.

DR. G. E. TYLER, secretary of the State Board of Health, gave the following reasons for the existence and spread of smallpox throughout the state during the last fourteen months: 1. The cases as a rule have been imported, principally from

New Mexico. It is also known that Colorado has suffered at the hands of the Philippine Islands, Texas, Kansas, Missouri, Nebraska, Utah and Massachusetts. 2. Neglect of vaccination. 3. Failure to recognize the disease in its early stages. 4. Failure to report every suspicious case to those legally responsible for its control. 5. Failure of health officer to rise to the situation. Such failures may probably be ascribed to one of the following causes: a. The influence of environments. County and town officials are often reluctant to spend the money necessary to quickly stamp out a threatened outbreak. b. Lack of executive ability. c. Lack of knowledge of his legal powers.

Unless all signs fail, Colorado is likely to have more serious outbreaks next winter than she has so far experienced. She need not have, however, if physicians, health authorities and the public do all in their power to prevent it.

Health boards all over the state should take the following measures:

1. Urge all citizens to be vaccinated and revaccinated. Parents should be urged to have infants vaccinated during the first year of life, and children should be revaccinated at 5 years of age.

2. School boards should be induced to secure the vaccination of all pupils.

3. Contractors should be induced to secure the vaccination of all employees.

4. Outbreaks should be anticipated by providing places to be used as quarantine and detention hospitals.

5. Failure to report cases of smallpox should result in vigorous prosecution of the offender.

6. Disinfection should be most thorough with reference to tuberculosis.

Dr. Tyler cited statistics proving that the number of cases of tuberculosis contracted in Colorado is on the increase. The means of prevention he summarized as follows: Every tubercular patient should be given an educational leaflet on the subject. In the larger cities and at resorts every case should be reported to the health authorities, and a register kept. All apartments recently occupied by tubercular patients should be disinfected by the health authorities. The spitting nuisance should be abated by posters, and in certain places by ordinances. All herds supplying milk should undergo examination. Tubercular and non-tubercular inmates of public and other institutions should be kept separated from each other.

VACCINATION.

DR. R. K. HUTCHINGS warns against the dressing of vaccination with vaselin, or any other ointment. The best results are obtained by keeping the sore perfectly dry from start to finish. He puts a small pledget of cotton over the sore after the lymph is dry, and over this an adhesive strap. Occasionally a lump forms at the site of the inoculation. This lump is spongy, about the size of a pea, red, and at times covered by a small scab. It generally remains a week or ten days, then dries up, leaving no scar. The patient is not immune. He has never been able to ascertain the lump formation and found no mention of it in any records consulted.

FOREIGN BODIES LODGED WITHIN EYEBALL.

DR. EDWARD JACKSON said in part: The patient's account of his injury is always defective, and often misleading. A foreign body having entered deeply does not cause the sensation of something in the eye, and the patient, impelled by hope, is often very positive that nothing is lodged there. Every detail of the accident should be minutely investigated: the body that inflicted the wound, whether rough or smooth; the relative position of the point from which it flew; the exact attitude of the patient; the direction in which he was looking. A thorough ophthalmoscopic examination at the earliest possible moment should be made. The position of the foreign body may be indicated by a streak of commencing opacity in the lens, or air bubbles, or shreds of hemorrhage marking its track. We must also consider whether it may not have passed entirely through the eyeball and lodged elsewhere. Where the exact location of the foreign body cannot be made out by examination under oblique illumination, or with the ophthalmoscope, the X-ray should be used. Making two negatives, with the tube placed in different positions, with some known fixed point the shadow of which can be used as a point of reference for the shadow of

the foreign body, it becomes possible to determine the location of the latter with great exactness. Unfortunately, very small foreign bodies do not give any perceptible shadow. He has had a case in which many trials with the X-ray failed to give an evidence of the presence of small particles of steel, although it was clearly visible in the fundus with the microscope.

In considering the prognosis and treatment it is best to divide the cases into three classes: 1, those lodged in the iris or anterior chamber; 2, in the lens, or 3, in the vitreous or fundus. Among twenty-five successive cases, the location of the foreign body was in the iris and anterior chamber in three, in the crystalline lens in four, and in the vitreous and fundus in sixteen. In one case it was partly in the iris and partly in the lens, and in one a foreign body, apparently simply lying on the iris, extended back through the zonule and into the vitreous.

When a foreign body is lodged in the iris or anterior chamber it should be removed as soon as possible.

Powder grains are occasionally lodged on the iris or in the lens. The finely powdered charcoal that remains of such a grain is not likely to ever cause any irritation. A foreign body lodged in the crystalline lens causes traumatic cataract. There is little liability to serious inflammation. It is proper, therefore, to allow the cataract to develop, and then to extract it in the ordinary way. He has seen a chip of steel hanging in the remains of the lens beginning to cause serious inflammation twenty-eight years after the original injury, the eye having, according to the patient's statement, remained quiet all that time.

A foreign body entering the vitreous, retina, choroid or ciliary body, if not promptly removed will set up such inflammatory and degenerative changes as to render the eye functionally useless. Smooth and aseptic particles are less likely to set up chronic degenerative changes and small particles firmly fixed in the fundus are compatible with useful vision.

He would insist that with the foreign body should be removed all badly damaged or probably infected tissue, the track of the foreign body through the vitreous and the bed of the tissue in which it lies. This can only be accomplished through a free scleral incision, made, if possible, through the point of entrance. Half the vitreous may be lost without serious consequence. We can save two or three times as many useful eyes by a surgical operation as by extraction of a foreign body with the magnet. To make a chip of steel jump from the wound with a giant magnet would seem a very brilliant operation to the bystanders, but it is a very useless one to the patient, if it leaves a track of inflammation with the eye. Surgery has no place for successful operations that work no permanent benefit for the patient.

VERTIGO.

DR. H. T. PERSHING gave the following classification of vertigo:

1. Vertigo of organic intracranial disease.
2. Degenerative disease of the central nervous system; a, lobes; b, disseminated sclerosis; c, parietic dementia.
3. Disease of cerebral vessels; a, arteriosclerosis; b, syphilis; c, endarteritis.
4. Organic disease of brain membranes or vessels absent; a, concussion; b, mechanical vertigo; c, toxic vertigo; d, labyrinthine vertigo; e, ocular vertigo; f, gastric; g, nasal vertigo; h, active or passive hyperemia and cerebral anemia; i, neurasthenia; j, essential vertigo.
5. Vertigo occurring as part of periodic nervous attacks; a, epileptic vertigo; b, migrainous vertigo, and c, hysteric vertigo.

EXTRADURAL SPINAL MENINGEAL HEMORRHAGE.

DR. S. D. HOPKINS reported a case under the above title. J. M., while shoveling coal, experienced a peculiar sensation throughout the body. It was not painful. His lower limbs became paralyzed twenty minutes after the beginning of the peculiar sensations. When seen on the third day of his illness he was suffering from pain in lower portion of trunk and thighs. The motor power of the left leg was good in every direction, but he was unable to make the slightest movement with his right. Sensation was present throughout the body. The right knee-jerk was absent, the left increased; ankle-clonus absent; deep reflexes of forearms normal; masseter reflex absent. Plantar reflexes: right slight, left absent. No ataxia,

no paralysis of arm; special senses normal; intelligence not impaired; girdle sensation and incontinence of urine and feces. The following day the patient was in the same general condition, excepting that nausea was added. During the evening he made a sudden movement, suffered severe pain in the back, and in a few minutes had a general convulsion in which he died. The diagnosis of spinal meningeal hemorrhage was confirmed at the autopsy.

CURED CASE OF HYSTERO-EPILEPSY.

DR. MINNIE C. T. LOVE reported the following case: S. M., aged 14, family history negative, from her 8th to 13th year, had suffered from chorea. The chorea suddenly disappeared some eighteen months ago, and she suffered instead from what her numerous physicians designated epilepsy. She had rosy cheeks, clear skin, and weighed 130 pounds. Menstruation was prolonged, excessive and painful. Dr. Love saw her during one of these attacks. She had a vacant stare, worked her fingers, and the facial muscles were much distorted. Her memory was getting very defective, so that she had to give up school. Electricity gave but slight benefit. Digital examination showed the uterus strongly flexed anteriorly and dislocated downward; pelvic viscera very sensitive. Curettage was performed and a stem pessary introduced. She menstruated afterward with ease, and felt better. Two months afterward she again had a nervous attack more severe than usual. Her eyes were found considerably astigmatic, and this was corrected. The nervous attacks have not recurred since. Her memory has improved, and she is practically well.

TRACTION PLASTERS IN LIEU OF THE MURPHY OPERATION.

DR. CHARLES DENISON exhibited traction plasters which he devised for the purpose of controlling thoracic movement on one side, thereby confining respiration to the unaffected lung. The plasters consist of two long strips of muslin, to the widest end of which adhesive plasters are attached, and a soft ring or collar. The plasters are applied to the chest, crossing each other in the axilla, and the front and back ends of the muslin strips are tightly drawn and firmly pinned to the collar placed on the opposite shoulder. This method, the author claims, is a perfectly, evenly and easily applied means to nearly annul the use of one lung, and, therefore, temporarily a suitable method to arrest pulmonary hemorrhage when from a known localized source; also to control ordinary or tubercular pleurisy, complicated or not with adhesions and pneumonia, or to limit and contract a pulmonary cavity, especially if located low down in the lung.

San Francisco County Medical Society.

July Meeting.

UNUSUAL CASES, ILLUSTRATING CO-OPERATION BETWEEN GENERAL PRACTITIONER AND OCUList.

DR. F. B. EATON, in his paper on this topic, said that the relations between general practitioner and oculist should be more close and friendly than they are, in order that the patients of both may derive the most benefit from their medical attendant. In many conditions the general practitioner is indebted to the specialist for his diagnosis, or for light on a doubtful case, and in return the specialist should often turn over a patient who consults him, to the hands of the general practitioner, the patient's trouble being but some eye symptom of a condition of general disease which demands general rather than special attention. To illustrate his point, Dr. Eaton cited several conditions, and a few cases of the conditions referred to.

The first case mentioned by the doctor was one of traumatism followed by malingering, and an attempt to mulct the proprietors of a store in heavy damages. The patient, a woman, was one day in a book store when a number of heavy books fell on her head. She was not, apparently, much injured at the time, but later went to bed, claimed to be paralyzed in the left arm and leg and to have some disturbance of the left eye and vision. Dr. Eaton was asked by her and by her physician to make an examination, and did so, finding the woman to be myopic, the pupil of the left eye dilated and not responsive to light stimulation. The vision did not appear to be disturbed. Subsequently Dr. Eaton, who concluded that the eye symptoms were

hysterical, was interviewed by three reputable physicians, retained by the defendants in the suit for damages which the woman had begun, who stated to him that they thought the whole matter but an attempt to get money from the defendants. Dr. Eaton was inclined to agree with them, at least in holding it to be a possible case, and decided to go with the patient's regular physician, entirely unannounced, for another examination. At the time of the second, unannounced examination, he found the patient entirely free from any eye symptoms whatever. The pupil was normal and reacted normally to light. Dr. Eaton was summoned as a witness, and largely on his testimony the suit for damages was lost. On the day following the loss of the suit the patient had entirely recovered from her paralysis and was seen walking about the streets. In Dr. Eaton's opinion homatropin had been used, perhaps with the connivance of the plaintiff's physician, to temporarily dilate the pupil of the left eye at all times when an examination was expected.

The second case referred to by Dr. Eaton was of a somewhat different nature. This patient, a man of about 40, had been thrown from a car, striking on his left side, hand and body. He was unconscious for about three-quarters of a hour, subsequently recovered, but ten days later developed peculiar eye symptoms. When examined, about ten days after the accident, the distance vision was normal, but there was total loss of accommodation and retinal anesthesia—or retinal fatigue—manifested on examining the field of vision for red and white. There was no organic trouble, but the diagnosis of traumatic hysteria seemed justified. The patient is really a sufferer and needs the care and attention of his general physician. He has been unable to do any work for the past five months, but will in all probability recover in time.

Locomotor ataxia is frequently first diagnosed by the oculist, and here again he should be in the most friendly relations with the general practitioner, for these cases are best dealt with by him alone. As an illustration, Dr. Eaton cites the following: A man called for his professional service, stating that about a year before he had noticed a slight dimness of vision and had gone to an optician, who had fitted him with glasses, which for a time helped him considerably. Again the sight failing, he called on Dr. Eaton. Tabes was at once diagnosed and the patient referred to the general practitioner. By going to an optician in the first instance, rather than consulting a regular oculist, the man had lost a whole year, during which time he might have been benefited by the attention of a regular practitioner.

Dr. Eaton then called attention to the fact that some general practitioners object to sending their patients to an oculist, and have indeed been known to actually consult with opticians in regard to the visual defects of their patients. He read the resolutions endorsed by the AMERICAN MEDICAL ASSOCIATION at its Columbus meeting in regard to opticians.

Another condition was illustrated by the history of a case presented in the person of a woman of 23, who consulted him for failing vision. She had headache, on the left side of the head, and nausea; and when rising after having been seated for a while, things got dark to her. There was a family history of migraine. The face and mucous membranes were pallid and the optic nerves were found to be inflamed, with swollen vessels. The case was a rare one, but the diagnosis of chloroanemia was easily made and the patient turned over to a general practitioner for treatment. Liberal iron tonics soon relieved the condition to a marked degree, but the disc of the left eye remained whitish; the vision of the right eye had increased to twice its former quantity, while the vision of the left eye was about the same as when first seen. There were no cerebral symptoms and so no intracranial trouble was considered.

The importance of the early recognition of gonorrhoeal ophthalmia was then touched on, attention being called to the fact that here it is almost always the general practitioner who first sees the case, and who should make the diagnosis and see that the patient is at once properly treated. It sometimes occurs that the septic ophthalmia develops first as a slight catarrhal discharge, with but trifling inflammation, the extreme active process being delayed for some days. A case in point was as follows: A patient, who had had a slight discharge from the urethra for two days, was referred to Dr. Eaton, by his general practitioner, for a trifling catarrhal in-

inflammation of the conjunctiva of one eye. The doctor was a bit suspicious and asked that the mucopus from the inflamed eye be examined microscopically. This being done, gonococci were found and silver at once instilled into the eye. The conjunctival inflammation disappeared rapidly, but the urethral trouble developed into a most obstinate case of gonorrhoea.

Dr. B. ISAAC JONES said that the question was a very broad one and could be looked at from many points of view. Ocular disturbances from general internal diseases are very common, and it behoves the oculist to be a good general practitioner, at least in so far as ability and training go. In his opinion the oculist had insufficient knowledge of general diseases; the adoption of a specialty should be at the latter end, rather than at the beginning of a man's professional life.

Dr. JOHN WAGNER had much intercourse with specialists, and in his experience benefit was always to be derived from such family relations. A case of malingerer, after a trifling accident from a car, was fresh in his mind, and in this case the examination and the testimony of the oculists defeated the dishonest attempt of the plaintiff to secure damages. In his opinion gonorrhoeal ophthalmia was not so common as generally supposed. In a somewhat extended career as a general practitioner seeing many cases of gonorrhoea and doing a good deal of confinement work, he had met with but one case of the affection.

Dr. V. H. HULEN said that the general practitioner and the oculist should always be on the best of terms, but he knew that this was not always the case, for some physicians were in the habit of consulting opticians rather than referring their patients to a regular oculist. It might be urged, he thought, by these physicians, that they did so for the reason that their patients could not pay the oculist's fee. In his opinion no oculist would refuse to retract or examine any case referred to him by a general practitioner, for nothing, if the physician stated the patient's position and his inability to pay.

Dr. M. KROTOSZYNER thought that the oculist was indebted to the general practitioner to a large extent, not only for patients but often for diagnosis. He mentioned several cases in point, where the correct diagnosis of a case that had been treated by an oculist for some time was eventually made by the general practitioner. One patient of this sort had been treated by an oculist, stated Dr. Krotoszyner, for some time, but without benefit. On consulting him he suspected kidney affection, and found, on examination, casts in the urine and an albuminuric retinitis. This should have been diagnosed by the oculist at first. He urged the necessity for the general practitioner to study the use of the ophthalmoscope. In many cases this is absolutely essential that the fundus of the patient's eyes be examined, and unless he is able to make such an examination, the general practitioner is often left in ignorance of the true condition of his patient. He recalled a patient who had consulted him some time previously, giving a history of symptoms which he thought purely hysterical. After a prolonged course of treatment the patient did not improve. One night she died very suddenly, and on post-mortem examination a large glioma near the optic chiasm was found. Had an ophthalmoscopic examination been made early in the course of the treatment, the true diagnosis could undoubtedly have been made.

Dr. PHILIP MILLS JONES called attention to the reverse of the picture painted by Dr. Krotoszyner, by recounting the history of a patient who had been referred to him by a general practitioner a short time ago. The patient, a young woman, was sent for examination, with the statement that her sight had been failing for a short time, and the condition was probably a serious one. Vision was found to be greatly reduced, but careful inquiry elicited the fact that the patient had but just recovered from an attack of diphtheria. Three or four weeks' good tonic treatment with a trip to the country entirely relieved the eye symptoms. In his opinion there could be no question that the general practitioner who was guilty of sending his patients to the optician for refraction was doing not only the oculist and the patient great wrong, but was also injuring himself, for sooner or later many of these patients find, when too late, that they have lost their sight through the ignorance of the true condition on the part of the optician. The man who is sent to an optician for refraction by his physician when he is suffering with dormant glaucoma, will not feel kindly disposed to that doctor when he finds himself blind and knows that it is largely owing to his physician's fault. So, too, with the patient who has progressive myopia, and is handed over to the tender mercies of the optician for a refraction which will mean ultimate blindness.

Alumni Association of Medical Department of University of California.

LEUCOCYTOSIS: ITS HISTOLOGY AND PATHOLOGY.

Dr. H. A. RYFKOGEL discussed this subject and first reviewed the ground so successfully turned over during the past few years, and mentioned the advances in the study of the blood permitted by improved methods of staining. By means of these new stains the fact that five distinct forms, or better stages, of the white blood corpuscle, or leucocyte, could be recognized. Of these five forms—the young, the older, the full-grown or adult cell, the eosinophile and the myelocyte, the third or adult cell, the common leucocyte, is the most common. It may vary somewhat in size and shape, and its nucleus may vary within considerable limits; it stains, however, with a neutral stain, and may be easily recognized and differentiated from the other forms of the white cell. The leucocyte does not have amoeboid motion until it reaches the stage of development of the third variety or form, which form is found in pus and in round-celled infiltration, as well as physiologically after a meal. This question of the physiologic increase of the leucocytes after food digestion has been found an important one in investigating the truth of the statements of certain malingerers. If the statement be made that no food has been taken for some long period of time, and if the blood count shows an increase of the leucocytes with no pathologic condition or clinical symptoms that would account for the increase, it is good presumptive evidence of a misstatement on the part of the would-be-patient. Dr. Ryfkogel has found this of value.

The difference between leucocytosis and leucemia was touched on and he stated that in leucemia the myelocyte first appears, it not being found in normal blood; it persists and later the neutral leucocyte appears in increased numbers and also remains in larger number than normal. In true leucocytosis this form of the white cell does not appear, but the other forms are found, especially the third, or neutral form, which is found to occur in greatly increased numbers, the amount of the increase depending on conditions of disease infection and individual resistant power of the patient; the increase may be from 100 to 1000. It is the increase of this third form of the white cell which is of diagnostic importance in many affections, and while the other forms of the cell may be also increased, especial value is placed on the count of the adult leucocyte which stains with the neutral stain. The relation between the virulence of the infection and the resistant strength of the patient is a peculiar one, and of much importance in the diagnosis as well as the prognosis. If the patient be particularly strong and resistant and the infection virulent, there will be an unusually marked increase in the number of white cells found in the blood. The indication is that of a particularly fierce struggle going on between the infection and the individual's resistant power. If, on the other hand, either the infection or the resistant strength be out of all proportion to the other factor in the problem, the increase in the number of white cells may not be very marked. Where the clinical symptoms show the infection to be severe and the blood count shows but a trifling increase in the leucocytes, the diagnosis is not so good as when the number of white cells is larger, for the count of the cells shows that resistant strength of the patient is not great, and that the disease may conquer more easily than if the strength of the patient more nearly equaled the strength of the infection. In this way the blood count may be used as a prognostic aid of no mean value. Leucocytosis is found to be present in all infectious diseases, save typhoid, unless in the presence of an abscess or peritonitis—tuberculosis and malaria. It may occur in these cases if there is also a complicating condition which would give rise to an increase in the white cells, as in the exceptions to typhoid fever, above cited. In a case of supposed appendicitis, for instance, if the blood count shows a largely increased number of white cells, it is safe to presume that pus formation has commenced.

The various theories suggested to account for the increase in the number of white cells in leucocytosis were next reviewed, the conclusion he seemed to accept being that recently advanced to the effect that in the system were acting two tendencies or forces, one a repellent tendency, by means of which the white cells are led to accumulate in the deeper viscera, the other being an attractive tendency which seems to draw the cells to the periphery and away from the deeper organs; there is also an actual increase other than the apparent increase due to the aggregation of the cells in the superficial circulation.

Dr. TERRY asked whether any significance could be attached to the presence of eosinophile cells, except in the condition of trichinosis.

Dr. RYFKOGEL, in reply, said that that was the only condition in which the eosinophile cells seemed to play any part.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance	\$ 5.00
Foreign Postage	2.00
Single Copies	10 Cents

In requesting change of address, give old as well as new location.

Subscriptions may begin at any time and be sent to

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
No. 61 Market Street, Chicago, Illinois.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, 100 Washington St., Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

These new members of the Association should send their annual subscription direct to the Treasurer, Dr. Henry P. Newman.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the Editor, and all communications relative to the business of the JOURNAL, proof-sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 61 Market Street, Chicago.

Original communications are accepted with the understanding that they are exclusively contributed to this JOURNAL.

SATURDAY, JULY 29, 1899.

GENERAL PATHOLOGY AND THERAPY OF DISTURBANCES OF CIRCULATION IN ACUTE INFECTIOUS DISEASES.

At the height of infection the resulting disturbance of the circulation is clinically characterized by softness of the pulse and diminution of the blood pressure, not necessarily connected with feebleness of the heart's action. These changes are to be separated from those which develop in the further course, the defervescence of, and convalescence from, the febrile disease, when the heart may be dilated, abnormally rapid or slow, occasionally irregular.

No characteristic anatomical changes are necessarily connected with the first kind of disturbance. In many cases, especially in diphtheria and typhoid fever, there are, it is true, important parenchymatous changes in the heart's muscle fibers; in other infections, with acute clinical symptoms, such changes are entirely absent. It is quite generally accepted that an acute infectious myocarditis—Romberg—accompanies the symptoms of cardiac weakness characteristic of convalescence from many acute infectious diseases.

Experiments bearing on the nature of the mechanism of the circulatory disturbances at the height of infectious diseases have not as yet been such that the results could be applied to the conditions in the human patient.

In the "Festschrift für Feier des 100 jährigen Bestehens der Medicinischen Klinik zu Leipzig,"¹ this problem is considered quite extensively by Romberg and associates. In order to reach some insight into the action of infections on the circulatory system, they inoculated rabbits with pure cultures of the pneumococcus, the

baecillus pyocyaneus, and the bacillus of diphtheria. The circulatory phenomena were studied carefully and at various stages the animals were sacrificed and carefully examined. These three micro-organisms were selected because of their pathogenic actions being quite similar in man and in rabbits; these bacteria also represent the principal forms or types of bacteria invasion.

Without entering into details, which would be quite impossible here, it was found that the pneumococcus, the pyocyaneus, and the diphtheria bacillus affect the circulation of the rabbit by paralyzing the vasomotor center in the medulla. The vasomotor paralysis leads to a fall of the arterial pressure and disturbances in the distribution of the blood in the body; the splanchnic vessels are overfilled, the vessels of the skin, muscle and brain underfilled. The heart need not necessarily be involved in the above disturbances; secondary degenerative changes may develop in consequence of insufficient blood-supply of its flesh; embolic pyocyaneus abscesses would enfeeble the heart's power, and the slowing and irregularity of the pulse observed in pyocyaneus and diphtheria infection are the result of the direct action of the infection of the heart's muscle. Romberg and his collaborators believe that these results are applicable to human pathology because of analogy.

The action of the human heart is not always enfeebled when the pulse is weak. At the height of acute infections the paleness of the skin, the drawn expression, the coldness of the extremities are often marked. Dyspnea, cyanosis, passive congestion and other symptoms of heart weakness, such as dilatation of the heart, are not necessarily present. Hence vasomotor paralysis accounts well for the most marked circulatory symptoms of the period of intense infection. Not heart weakness, but vasomotor weakness, not cardiac paralysis, but vasomotor paralysis, is the principal cause of the circulatory failure in acute infectious diseases. At the same time the importance of secondary and complicating changes in the heart's muscle remains unquestioned, especially in the later changes and in the period of convalescence.

Naturally the development of circulatory failure forms one of the prominent therapeutic indications in the acute febrile diseases. Assuming, as indicated above, that vasomotor paralysis plays an essential role in the productions of the enfeeblement of the circulation in the acute critical stages, how is the physician to best meet the threatening vascular paralysis?

Passler contributes an experimental investigation toward the solution of this important problem. The course of the disease in the infected rabbits—pneumococcus and bacillus pyocyaneus—was carefully watched until symptoms of fall of vascular tonus appeared, when different medicines were administered and their effect on the blood pressure noted. It was found that digitalis, by its support of the heart, for a time only exercises a favorable influence on the pressure. Subcutaneous injections of ether and intravenous injections of alcohol or cognac were without much, if any, ef-

¹ Deutsche Archiv. f. Klin. Med., 1899, vol. lxxiv.

fect. The action of vasomotor stimulants was much more favorable than that of heart tonics. The best results as to vasomotor stimulation were obtained by the combined use of caffein and coriamyrtin; their influence was stronger, of longer duration and more constant than that of camphor. Strychnin and ergotin increased the pressure only in fatal doses. Infusion of salt solution appeared to be harmless and of some favorable influence. How far a similar human therapy will yield like results must be left to clinical observations.

In no case were any of the substances used in the experiments able to maintain intact the function of the vasomotor centers for any length of time. Clinical experience has shown that in human infections the dangers to be avoided may be transitory; if success crowns the effort to support the circulation during the critical period, it is possible that life may be maintained until the infection has passed its course.

While death during the height, or the acute period, of diphtheria infection may be attributable to vasomotor paralysis, the much-feared sudden post-diphtheritic death depends on other causes. According to the studies of the Leipzig clinic, as presented by Hallwachs, the last mentioned form of death depends on myocarditic changes. These changes usually develop after the acute period of the infection, but they may complicate the vasomotor paralysis. Similar events may occur in other infectious diseases. In diphtheria Hallwachs observed that the severity and the course of the clinical symptoms—changes in the cardiac rhythm, slowness and irregularity of the beat, feeble heart's action—corresponded closely with the degree and stage of development of the anatomic process—degeneration of the muscle fibers, round-cell infiltration, connective-tissue formation. The myocarditis begins as early as in the second week of the disease and may rapidly reach a dangerous extent; in favorable cases healing results, sometimes leaving no evidences of the changes, at other times scars and diffuse sclerotic areas. Here we have a striking example of the second possibility in which an infection may injure the circulatory system, namely by the production of an anatomic disease of the heart muscle, but it is to be emphasized that this occurs after the acuteness of the infection has subsided.

RECURRESCENCE OF BARBARISM.

In the old barbaric days, while physical prowess was the chief quality that determined the survival of the fittest, it is in evidence that moral cowardice, as shown in treachery, assassination, and the torture of the defenseless, was the rule rather than the exception. At the present time the revelations of moral turpitude in France, coupled with the clear evidences of savage disposition, make it plain that but a brand is needed to light the fires of another Commune and to initiate a fierce civil and religious war. The Dreyfus case is but a humiliating picture of moral cowardice from the beginning to the present stage. In our own country, to the

thoughtful, who must by no means be confused with the pessimistic, the signs of this form of degeneracy are all too evident. The signs are most obvious in our crowded cities where the environment departs farthest from nature and where, by close association of the criminal with the ignorant, lawlessness readily assumes the contagious form. These remarks are prompted by the terrible scenes enacted of late during the street-car strikes in various cities. The degenerate cowards, who operate under cover of darkness, have no compunction in endangering and even taking the lives of innocent men, women and children, so long as their insane desire for vengeance of real or supposed wrongs is satiated by attacks on the inanimate property of the companies. There have lately been scenes enacted on the streets of New York, Brooklyn, Cleveland and other cities that would have caused thrills of joy to run down the yellow spine of Robespierre. Cars have been stoned and blown up with high explosives, the pillars of elevated roads have been blown out, and many blameless human beings have been disabled by overwhelming assault of numbers, by direct injury from explosions, and by the terrible nervous shock resulting in those of delicate nervous organization from unwitting presence or participation in these tragedies. Because our country receives in its steady tide of immigration a constant proportion of the degenerate and unsuccessful from the lowest parts of the most unruly populations of Europe, a good part of this violence and crime may be laid at the doors of others than native-born Americans. Perhaps we should also not forget that this class, being accustomed from childhood to have the first sign of rioting on their part met with the stern hand of a well-trained military, misses the habitual repression in the proverbial laxity of American officials charged with the preservation of domestic peace.

But there are other evidences of native cowardice which can not thus be readily shifted on the backs of convenient Europeans. In what city paper can it not daily be read that some luckless individual has been run down by the reckless "scorching" bicycler, who in abject cowardice jumps on his wheel and flees ignominiously, leaving others to repair the damage he has done and "some person unknown" to bear the blame? So it is with that driver of horses who runs down the bicyclist or pedestrian. Usually the papers say that he whipped up his team and disappeared before he could be identified. Among our politicians courage is rapidly becoming the rarest of all virtues. Success is the all-important goal. If incidentally success may be attained by seeming to evince moral courage, there will be a show of it; but if the contrary holds, no thought is given to its absence. The thoughtful can supply endless and more apt illustrations of this unfortunate tendency to cowardice in our national life. Pessimism is, however, far from being the mainspring of these remarks. There is happily, even in the midst of this wave of turbulence and degeneracy, clear indication of the rise of a better spirit, or to speak more correctly there is hope that courage

is again becoming popular and reappearing brightly from under the cloud behind which it has been so darkly hidden. The popularity of the writings of Rudyard Kipling, that so often paint in bright colors courage and the other manly virtues, is a highly encouraging sign. Of still greater significance and of great hope for the future is the undoubted popular admiration for the two chief heroes of the late Spanish war, who beyond all doubt clearly exemplify to the public mind the combined virtues of physical prowess and moral courage. This popular worship of honesty and bravery can not do otherwise than give rise to healthier ideals of private and public virtue. The ignorant can only be reached through the emotions, with them reason per se is powerless. Admiration and reverence for real heroes have always marked the best that is in the Anglo-Saxon. Hero worship is not indeed an unalloyed good, but in the present condition of depraved social and personal ideals it may prove to be of immense utility in the development of our American life toward purer goals. In any event its simple existence shows the persistence among us of a great solid substratum of the keen common sense that has kept our race from so many of the pitfalls that have beset the path of the other European peoples. While it is not to be expected that the uncultured can ever admire the abstract virtues of courage and manliness, it is always possible for the personification of those qualities, which mean so much for social stability, to become a popular idol. Therein lies much of hope for our national evolution.

While the ever-present soldier of Europe is little to be desired among us, it is on the other hand true that we as a people are much too lax in dealing with violence. Even as corporal punishment is not infrequently necessary in the correction of the waywardness of childhood, so it is best that mob violence should always promptly meet the stern hand of the force of the law-loving classes. We must never forget that a large portion of any people are still, at best, but in a stage of advanced childhood, and can not be dealt with as can the fully developed man. True courage is the greatest of all virtues because its existence presupposes the possession of nearly all others. Let us insist that our teachers shall constantly instill in the developing minds of the children of our nation a reverence for manliness even were it, as it is not, at the expense of intellectuality.

PSYCHIATRY AND SENSATIONALISM.

"How Shall We Instil Correct Ideas of Insanity into the Public Mind?" is the title of a paper announced to be read before the coming meeting of the British Medical Association. This is a question that remains to be answered here as well as in Great Britain. There is no lack of desire for information, but the only kind that seems to be absorbed is the imperfect and erroneous, and the more erroneous and imperfect the more readily it is apparently absorbed. The problem of how to enlighten the public is therefore a difficult one, even more

so than many other medical problems in regard to which the public takes an interest. A description of an asylum will be more readily believed if it is portrayed as conducted on the plan of an ill-managed poorhouse, than if facts are stated as they really are. The same is true as regards insanity itself. There is no statement too extravagant to be accepted by the laity, and even plain truths, plainly told, are too often accepted in a distorted form. There is such an opportunity for sensationalism that newspaper reporters in particular are rarely able to keep their imagination in restraint and the average literature they produce on the subject is about as thoroughly untrustworthy as it can well be. The physician who unguardedly allows himself to be interviewed on any remarkable incident or phase of the subject is liable to have to repent it, and this is well illustrated by a recent occurrence in New York. The Sunday edition of the *New York Herald*, June 11, contained a long article purporting to give the opinions of Dr. Van Gieson of the New York State Pathological Institute, and his conclusions that the day of asylums is nearly past and that they are to be replaced by psychopathic hospitals which are to treat insanity in its beginnings and thus forestall the necessity of these accumulations of human misery. The article implied the claim for Dr. Van Gieson and his assistants that this great advance would be due to their labors, which were especially illustrated by a case recently under their care and the publication of which is to make a profound sensation in the medical world, and to revolutionize present systems of the treatment of insanity.

The case itself as described in the *Herald* is not a remarkable one to an alienist either in its symptoms or its outcome, though one well suited for a sensational write-up by an active reporter. While less elaborately studied and reported, more or less similar cases have often been successfully treated in ordinary hospitals for the insane. They are only exceptional enough to afford no basis whatever for such generalizations as are made in the article referred to. Insanity is not proved curable by one such case any more than it would be proved incurable by the occurrence of a case of paresis, were the latter actually as rare as it might seem to be from the statistics of fifty years ago. As for such remarks as those attributed to Dr. Van Gieson by the reporter: that "insane asylums will become almost obsolete;" that the more perfect and effectual methods used in the case of Rev. Mr. Hanna "will revolutionize the whole system" of psychiatry; that they "mark the pioneer departure from the old school and the establishment of a more logical and perfect system for the treatment of the insane," we would prefer to assume that he never uttered them any more than that he characterized workers like himself as "psychopaths," though that is inferable from a passage in the same quotation marks. It would seem eminently proper, nevertheless, for him to make some public repudiation of the statements here credited to him, but though we have been watching for

something of the kind, it has not yet come under our observation. It is sometimes a question whether silence is the best policy in such a matter, but it is generally safest for the party involved to give the benefit of the doubt to an open declaration of the unauthorized misstatement of his remarks.

Even if through want of caution there had been something said that might be thus misinterpreted, the better course would be to admit it and make the correction. As it is in this case, the uncorrected impression given the public thus far is that the workers in the New York Pathological Institute by this one cure have made the great discovery of the age in the treatment of insanity, and are willing to publish it in this sensational form in a lay journal. The use of alleged quotations from Dr. Van Gieson, implying all this, and necessarily with it a disparagement of his fellow workers in psychiatry, makes the appearance still more unfortunate and the more imperatively demands some explanation. And without such explanation the inference is justifiable that eminent ability as a pathologist is perfectly compatible with gross ignorance of clinical psychiatry and a condemnable ethical recklessness.

SCIENK'S THEORY IN PRACTICE.

A Chicago chemist has been trying Schenk's rules for the production of sex, with what he considers a successful result. He and his wife desired a male child, and the expected infant's sex turned out accordingly. Considering the fact that the chances of this being the case were about 104 to 100 in the natural order of events, this case seems hardly conclusive, but it appears to have excited enough local interest to call in the reporters and bring out one or two interviews with physicians, who are judiciously noncommittal. If important succession or even dynastic contingencies depended on this birth, it might have received less attention, and perhaps we may consider it an evidence, gratifying rather than otherwise, of the popular interest in a scientific theory.

RECIPROCITY IN MEDICAL LICENSURE.

State medical examinations should be so conducted that the license granted by the examining board of one state, to practice medicine within the boundaries of the state, should carry with it, under proper supervision and scrutiny, the license to practice medicine also in other states. A step in the fulfillment of this desired end has recently been taken in Delaware, where the medical council will hereafter, in compliance with an amendment to the state medical law passed by the last legislature, recognize the certificates of license to practice medicine issued by the New Jersey State Board. It is to be presumed that like legislation has been or will be enacted by the State of New Jersey. The organization and administration of state medical examining boards has accomplished much good, and the time has come for a national medical examining board in order that those who have qualified in one state and desire to remove to another, or to others successively, need not be compelled to submit to examination with each change of residence.

THE AMERICAN VOICE.

The American voice is a common subject of criticism, though the critics are to a great extent guilty of the fault of estimating the whole by a part, and that it may be only an insignificant fraction. Taking as its text a paper by Dr. John W. Farlow, read before the American Laryngological Association, the *British Medical Journal* indulges in some characteristic remarks on the "mangled and outraged" English tongue in this country, and the bad habit of speech "which will never be corrected because patriotic Americans look upon it as one of their national institutions." We should infer that the editor has had but little intercourse with the better class of Americans, or that he has been a very poor observer and a rash and superficial generalizer. Admitting all our faults and that we have, perhaps, as a nation, a higher-pitched and less agreeable speech than the best English practice, and that there is abundant room for improvement, we can honestly deny the greater mangling and outraging of the English tongue here than in its native seat, or that we patriotically look on any of our bad habits as a national institution. The editor of the *British Medical Journal*, in indulging in such assertions, is cultivating a bad habit of writing, which is worse in its way than one of speech. The peculiarities of the American voice are probably largely due to climate, but they are also to be found in certain parts of Great Britain. Before the War of 1812, when British men-of-war were impressing alleged English seamen off American merchantmen, it is traditionally reported that many a characteristic Yankee twang was claimed as proving its owner a Cornishman. There may be in it something hereditary after all, just as many of our alleged Americanisms are proved to be only archaic English of Shakespeare's or Cromwell's time.

WOMEN'S CLUBS AND PATENT MEDICINE.

That the disgraceful, immoral and disgusting advertisements of patent medicines and appliances for the alleged cure of diseases peculiar to women have been allowed to go on without protest on the part of the women themselves is astonishing. That the claims made by advertisers of this class of nostrums are false is probably not easily recognized by women, but their indecency certainly is plain enough. We are pleased to see that at least one of the women's clubs of the country has had the courage to take action in the matter, even if it goes no farther than to pass resolutions. We gladly give space to these and suggest to our readers that they call the attention of the "clubwomen" among their patients to the action of the women of Worcester, Mass., as contained in the resolutions passed by the Worcester League of Unitarian Women:

Resolved, That the Worcester League of Unitarian Women observes, with regret, the increasing offensiveness of advertisements of proprietary medicines claiming to cure the special diseases of the sexes. We consider them a hindrance to the work of social purity.

Resolved, That we appeal to respectable journals to combine in refusing all medical advertisements which contain indecent details of diseases.

Resolved, That we urge self-respecting women to condemn these printed indecencies, to avoid correspondence with firms which so offend, to withhold patronage

and to influence others against dealing with them, whatever the merits of the remedies they offer.

Resolved, That we request the press generally to publish these resolutions, and urge women's clubs throughout the land to take similar action, in the hope that by concerted effort we may secure redress of a great wrong, and overcome a mighty obstacle to moral progress.

CYSTICERCUS OF THE FOURTH VENTRICLE.

According to Hensen's cysticercus cysts in the fourth ventricle may cause the following anatomic changes: Extensive proliferation of the ependyma and marked internal hydrocephalus in consequence of closure of the sylvian aqueduct and the foramen of Magendie, as well as compression of the vena magna galeni; no changes are produced in the immediate vicinity, except those due to general compression. There are cases which run their course without any symptoms, but more frequently they develop evidences of increased intracranial pressure; headache, vomiting, dizziness, convulsions, enfeebled visions—all due to the internal hydrocephalus. Occasionally focal symptoms develop: on part of the medulla diabetes; referable to the cerebellum and crura cerebri, such as marked dizziness, cerebellar ataxia, indications of forced movements and positions. The kind of headache and the position of the head may point to the localization of the lesion in the posterior fossa. The features especially peculiar to cysticercus cyst of the fourth ventricle are the intermittent course and the rapid, eventually fatal exacerbation of the symptoms on account of its being free and spontaneously movable. In Hensen's own case the diagnosis lay between tumor of the cerebellum and hemorrhagic pachymeningitis. In all likelihood only a probable diagnosis of cysticercus in the fourth ventricle can ever be made during life because the general symptoms force those peculiar to the cysticercus into the background. Intermittent course and sudden death on account of paralysis of the centers of respiration may lead to correct diagnosis, although after death. It will be recalled that in the case of cysticercus cellulose of the brain and spinal cord, reported by Diamond², the epileptoid symptoms were referred to the irritation of the cysts.

RETENTION OF LIFE.

The possibility of the retention of life and consciousness for any time after complete severance of the body above the hips, has not been much raised in medical literature, and naturally observations of such an occurrence are rare. Not long since there appeared a sensational paragraph in the newspapers in regard to a young man surviving hours after having been cut in two by a train. As our confrère, Dr. Gibbon's name was mentioned in connection with the case, we wrote him in regard to it, and received the following report

CHARLOTTE, N. C., July 18, 1899.

To the Editor:—The patient, a young man of about 20 years, from the western section of North Carolina, attempted to board a passenger train in rapid motion. Losing his hold he fell across the rail, and the wheels of several trucks passed over his body, completely crushing the pelvis and lower portion of the abdomen, and the

right arm above the elbow. The accident occurred at night, about twenty miles north of Charlotte, and the unfortunate man lived about thirty minutes after reaching this place, surviving his injuries about one hour. When seen by the writer, in a crowded passenger station, the man was perfectly sensible, answered all questions and complained bitterly of thirst. His face was expressive of the greatest anxiety and restlessness, and he was entirely pulseless. There was no hemorrhage, although the mangled muscles of the lumbar and gluteal regions hung from the side of his cot.

The situation being unfavorable for a minute examination of the extent of his injury, I am unfortunately unable to confirm what was afterward told me by the trainmen, that the lower extremities were completely severed at the pelvic brim, from the remainder of the trunk. The undertaker has also assured me that he placed first the upper portion of the body in the coffin and then the legs attached to the pelvis. My own examination of the man, while living, however, showed that the wheels of the car had passed directly over the lower part of the abdomen, of course crushing everything to pulp, though I did not suppose at the time that the section of the body was complete. I have no reason to doubt, however, that such was the case, and greatly regret that I did not insist on a removal of the body and a post-mortem inspection of the injury.

Very truly yours,

R. L. GIBBON, M.D.

Other instances have been reported where a few minutes were stated to have elapsed between complete severance of the trunk and death, but this interval is the longest we have seen as yet reported. A crushing injury such as is produced by being run over by car wheels may possibly so occlude the blood-vessels as to prevent too extensive hemorrhage at once, and if collapse and death do not at once occur, life may continue until the slightly later effects of the injury have appeared. Such cases, however, rarely survive long enough to come under medical observation. As Dr. Gibbon says in his letter, accompanying the above report, it makes really little difference whether the parts were completely severed or still held together by shreds of tissue, but the sensational character of the accident depends on the former being the case.

GENERALIZED VACCINIA OF ERUPTIVE TYPE.

There is yet wanting unanimity of opinion as to the exact relation between smallpox and cow-pox, and the question has not been decided whether the two are expressions of the same disease modified by the soil in which they are implanted, or are really distinct diseases. However this may be, it is certain beyond peradventure that inoculation of human beings with cow-pox affords protection from and does not give rise to smallpox, and while vaccination is occasionally attended with noteworthy constitutional symptoms, it is rarely accompanied by any other than the local exanthem. Cases have however, been placed on record in which vaccination was followed by a generalized eruption, and only recently Tyson reported such a case to the Philadelphia Pediatric Society. A most striking instance of the same sort has also been reported by D'Espine and Jeand¹. The patient was a girl 11 months old, who was inoculated on both arms, with lymph that was also employed

¹ Deutsch Arch. f. Klin. Med., 1899, 64, p. 635.

² Journal A. M. A., June 17, 1899.

¹ Archiv für Kinderheilkunde, B. xxvi, H. 5, 6, p. 367.

in the vaccination of two other children in whom the vaccinia pursued a normal course. In the child in question moderate fever set in four days after the operation, and in a day or two later, simultaneously with the pustules on the arms, several similar ones appeared on the trunk and face. After another day the eruption became much more profuse, while the temperature remained slightly elevated. Gradually the eruption extended over the entire body, although the constitutional manifestations remained mild. The exanthem everywhere presented the typical appearance of vaccinia, and subsided in the course of four or five days, although subsequently a few new vesicles made their appearance. The inoculated points on the arm pursued the ordinary course of vaccination. A calf was inoculated with some of the lymph from pustules on the leg and foot on the eighth and ninth days, with a positive result. With the contents of the pustules thus developed a second calf was inoculated, also with positive results. An attempt later to inoculate the first calf with active vaccinal lymph proved unsuccessful. The case was believed to be one of generalized vaccinia rather than one of mild varioloid, because the eruption failed to pursue the regular course of variola; and the general symptoms of this condition were completely wanting; while the possibility of direct or indirect transmission of smallpox could be entirely excluded. There was, further, no conveyance of variola to any one in the neighborhood of the child, although many of these had not been vaccinated since childhood. Finally, the positive results of inoculation of the calves rendered certain the conclusion that the condition was one of vaccinia. The occurrence of the condition is explained as a reversion to an original type, as a result of which a non-contagious exanthem is made to occupy a position intermediate between the localized eruption of cow-pox and the contagious generalized eruption of variola.

PHASES OF "CHRISTIAN SCIENCE."

Under the new medical act "Christian Scientist healers," etc., are, for the first time, given a legal status in Illinois. The act contains the following clause explicitly prohibiting interference with them: "This act shall not apply to any person who ministers to or treats the sick or suffering by mental or spiritual means without drugs or material remedy." Under this act the "Christian Scientist" has full right to practice without supervision or control by any authorities. Whatever may be said about this backward step in medical legislation, it must be admitted that unrestricted practice of "Christian Science" and faith healing is likely to have some queer developments. One phase, interesting from the veterinary standpoint, has lately occurred in Paterson, N. J. The "Scientist" failed to make a diagnosis in the case of a cow that was in extremis when he arrived. After "three sittings of profound meditation" the cow, however, so completely recovered that she chased the "Scientist" twice around the barnyard, and he was only rescued by a hired man with a pitch-fork. The *Chicago Chronicle*, which from time to time exhibits the usual newspaper iatrophobia against non-advertising physicians, is nevertheless rather skeptical about certain phases of this cure. The "Scientist," it remarks, undoubtedly

maintains in common with other professors of his philosophy that matter is non-existent. Why then, it asks, did he rush around the barnyard to escape the cow, which, being matter, was non-existent? Why, moreover, did he treat a non-existent cow? The occurrence suggests that "Christian Scientists" are likely to demonstrate, as did the Paterson healer, that the line of the non-existence of matter has to be drawn at enraged animals, especially since these cannot be "faith cured out of existence. It is to be hoped that "Christian Science" will take to veterinary practice and thus extinguish itself. Unfortunately, however, those who have embraced this cult do not call in "Scientists" to treat their domestic animals, their face or their hair. Another phase of the same subject is illustrated in the way that some of the "Christian Scientist" judges who disgrace the bench deal with the question of mental shock in producing injuries. These, in their decisions, deny the legal right of mental shock to produce such diseases as chorea, while at the same time smuggling into legislative acts clauses favoring "Christian Science," similar to that of the Illinois medical practice act. It is not strange to find the sexual element cropping up in connection with these aberrant religious ideas, the relation between sensual practices and religious delusions among the insane having long been known to alienists. This relation explains the frequent sexual aberrations displayed by many fanatic sects. The prophets, John of Leyden, Knipperdoling and the Oneida community—the original "Christian Scientists"—exhibited these very strongly in their acts. This tendency has long been recognized as occurring among people of average normal condition by sincerely religious people. Mr. Spurgeon, in a sermon two decades ago, said: "Let us not forget, too, that excess of spirituality is by a strange but certain law, placed next door to sensuality." This phallic phase of religion naturally crops up in "Christian Science" literature. A recent issue of a Chicago medical journal contains a "Christian Science" article on marital hygiene, by one Ida E. Chaddock, which to the phrasology of the "Christian Scientists" joins directions which resemble those given to the priestesses of Aphrodite. It is to be expected that this literature will appear in greater quantities now that "Christian Science," so far as Illinois is concerned, is freed from any restriction.

Medical News.

THE NEW wing of the Tacie Harper Hospital, Long Branch, N. J., was dedicated July 19.

THE *Tri-State Medical Journal and Practitioner* is to be issued under the title of *Inter-State Medical Journal*.

THE Duke of Westminster has presented to the Royal Alexandra Hospital of Rhyl, Wales, the sum of \$50,000.

PROFESSOR BRISSAUD has been appointed to the chair of history of medicine and surgery at the Paris Faculty of Medicine.

FIRE in the pathologic laboratory of the Kankakee, (Ill.) Hospital for the Insane, July 20, destroyed many valuable specimens.

DR. J. CARDEN COOPER of Philadelphia, left July 27 for Europe, where he will attend the International Con-

ference for Prophylaxis of Syphilis and Venereal Diseases, at Brussels, in September.

BY THE will of Miss Sue M. Bryson, a sufficient sum has been left the St. Joseph's Hospital of Lancaster, Pa., for the endowment of a free bed for children.

THE NEW French Minister, de Galiflet, mentioned so often in connection with the Dreyfus case, still wears a silver plate in his abdomen to cover a defect caused by a cannon ball at the siege of Puebla.

DR. F. T. STEWART, of the Pennsylvania Hospital, Philadelphia, is quoted as saying that he has recently treated five cases of tetanus by the administration of antitoxin, but in each instance the patient died.

THE WIDOW of a respected citizen of Riga, who died recently, has applied to the court for permission to resume her maiden name on the ground that the husband with whom she had lived for twenty years was a woman.

DR. JUDSON DALAND, Philadelphia, is in California. Before returning home it is his intention to visit the Yellowstone National Park, and he will read a paper before the Rocky Mountain Medical Society, in Salt Lake City, July 25.

THE SUGGESTION is offered, in a Paris exchange, that physicians in cities and small towns might obtain change of air and scene with the minimum of loss and expense, by merely exchanging their practices, offices, etc., for a short while.

LONDON cablegrams of July 22 announce that the bubonic plague has spread from Hongkong and Mauritius to Reunion. There were thirty-six cases at Mauritius during the week ending July 20, of which twenty-nine resulted fatally.

BY THE will of the late Robert L. Rea, Chicago, Northwestern University, Evanston, Ill., receives \$10,000 for endowment of the "Rea Professorship of Anatomy." The College of Physicians and Surgeons, Chicago, receives \$5,000.

THE PASTOR of St. James Methodist Episcopal Church, the Rev. Dr. Robert McIntyre, has announced that a hospital for incurable consumptives will be erected by a citizen of Chicago at an early date. The name of the donor has not been made public.

THE ALVARENGA PRIZE of the College of Physicians of Philadelphia, amounting to \$180, for the year of 1899 has been awarded to Dr. Robert L. Randolph of Baltimore, for an essay entitled "The Regeneration of the Crystalline Lens: an Experimental Study."

DOYEN, the "champagne millionaire," "lightning operator" of Paris, received quite an ovation from the students at Kiel recently, when he exhibited his cinematographic reproductions of his operations at von Esmarch's clinic, at the request of Emperor William.

FIFTEEN druggists, confectioners and manufacturers of "fruit syrups" have been arraigned in New York City charged with selling impure syrups for soda water and ice cream. The analysis showed no fruit juice present and that the coloring was produced by aniline dyes.

A LEMBERG, Austria, paper recently reported that a portrait of the late Empress, in the possession of a certain citizen for many years, had commenced to drip blood from between the glass and the frame. A local scientist attributes it to the "reddish secretions of the bacillus prodigiosus."

ACCORDING to the *British Medical Journal*, the members of the Continental Anglo-American Medical As-

sociation will follow the precedent set last year in Edinburgh, and lunch together during the meeting of the British Medical Association next week. The chair will be occupied by Prof. Osler of Baltimore.

A FATAL case of hydrophobia in a child 3 years of age is reported from Columbia, Mo. The child was bitten June 12, and the first symptoms were noticed July 10, death occurring a few days later. Such cases are of interest as occurring at too early an age to possess the hysterical element claimed by some to be the basis of the disorder.

A CIRCULAR has been issued by the physicians of Finisterre, the French province most ravaged by alcoholism, emphasizing its pernicious consequences to public and private health and national interests, and announcing that they can no longer remain impassive spectators of the catastrophe. The effect of their crusade is already extending beyond their local influence.

DR. G. ALDER BLUMER, superintendent of the New York State Lunatic Asylum at Utica, has been elected superintendent of the Butler Hospital, Providence, R. I., and will assume his new duties early in September. Dr. Blumer has made himself an enviable reputation during his nineteen years' service at Utica, and the trustees of the Butler Hospital are to be congratulated on their having secured his services.

HEERMAN, the inventor of the postal card, is now urging the Austrian authorities to introduce the "telegram card," or "telegram letter," and the proposition is under consideration. The special card to be sold for the purpose is deposited in the mail as usual, but when received at the postoffice, the contents are to be immediately telegraphed or telephoned to the addressee. Such a card might prove a desirable means of communication between patients and doctors in many instances.

DR. LASSALLETTÉ of Pau was condemned last year to two months' imprisonment for "homicide par imprudence," as a pair of forceps was found in the abdomen of a woman who had died a few hours after he had operated on her for removal of a large fibroma. After completing his term he produced evidence that the patient's death was not due to the fact cited, but that she had been poisoned with nux vomica. The case is now in the hands of the experts according to the *Gaz. Méd. de Paris*, July 8.

THE average monthly death-rate in Santiago, Cuba, under the Spanish régime is said to have been 250, but under improved sanitary measures carried out since the occupation by American troops, the mortality has decreased to 112 per month and is constantly growing less, notwithstanding that a small epidemic of yellow fever has affected that district. Previous to July 19 no new case of yellow fever had been reported for a period of five days.

UNDER DATE of May 18, 1899, Manila Bay, P. I., Lieutenant and Asst.-Surgeon Eugene H. Hartnett, U. S. A., reported an outbreak of measles among the troops on the transport *Warren*, on her passage from San Francisco, Cal., to Manila, P. I. Five cases were developed before reaching the Hawaiian Islands. These were left at Honolulu. After leaving this port fifty-five cases were treated, although every effort was made to restrict the spread of the disease by isolation and disinfection. No fatality occurred from the disease.

IT is a curious instance of the irony of fate that the electric exhibition at Como, in honor of Volta's discovery of the electric pile, should have been destroyed by an insubordinate electric spark. The loss is com-

plete and includes the original models of all machines and instruments invented by Italians, as well as the priceless Volta relics, his machines, letters, etc., and specimens of all the latest and most improved appliances of electricity to medicine, surgery, and every art and industry.

ONE of the last acts of the late Czarevitch, as we learn from the newspapers, was to publish a set of rules for consumptives. Himself a victim, he followed these rules most rigidly; the fear of imparting his disease became almost a mania with him, and none of his attendants were allowed to be on duty with him over two hours a day; the rest of the time they were obliged to spend looking after their health. He had collected, it is said, an extensive library on the subject of tuberculosis, which seems to have been the subject that most occupied his attention.

DR. L. L. SEAMAN, of New York City, has offered \$100 in gold or a medal of equal value, as the successful competitor may select, for the best thesis on "The Ideal Ration for an Army in the Tropics." The competition is under the direction of the Military Service Institution of the United States, which has its headquarters on Gouverneur's Island, New York Harbor. Col. Weston, acting commissary general; Lieut.-Col. Charles Smart, deputy surgeon-general, and Lieut.-Col. Wm. E. Dougherty, 7th U. S. Infantry, have been asked to act as a board of awards. The theses must be submitted by March 1, 1900.

ACCORDING to report the officials of the New Jersey experiment station have for a number of years had under observation several cows in which reaction had been given with tuberculin and were pronounced tuberculous. These animals found to be infected were isolated and have been closely watched, and from time to time examinations of the milk have been made but no tubercle bacilli have been found. The statement has also been made that, because no bacilli have so far been found, it does not absolutely prove that bacilli have never been present, and further that at this time the apparatus used is not as accurate as it is hoped to make it at some future day.

PHILADELPHIA is making an earnest effort to determine the extent to which adulteration of foods is being practiced in that city. Not only the retailer, but the wholesale dealer as well, will come in for his share in this investigation. The grand jury for July has five bills of indictment charging defendants with violation of the food laws, most of them being dealers in oleomargarin. Since January fifty-two persons have been indicted for selling oleomargarin for butter. During the same period twelve have been charged with selling adulterated milk. Five true bills have been found against retailers charging them with selling coffee adulterated with chicory.

THE ANTIVACCINATIONISTS will find food for thought if they will investigate the latest reports concerning smallpox in Germany during the last decade and a half. For the ten years previous to 1895 the average death-rate from smallpox was 116, the greater of the total number occurring in the early period of the decade. In 1895 there were 27 deaths, in 1896, 10, and in 1897, 5. In Germany the law requires vaccination and revaccination, and the law is carried out. In no other country is the value of vaccination more evident than in Germany, and in no other country is the preventive method more thoroughly carried out.

SINCE the large number of deaths from tetanus pro-

duced by injuries from the use of toy pistols, the coroner of Philadelphia has been looking up the law as it applies to the sale of firearms in general. Several additional deaths from tetanus have occurred in the city during the past week and that has probably given a greater impetus to the crusade against these firearms. An act of the Assembly, passed June 11, 1881, makes it a misdemeanor to sell firearms or any explosive substance to boys under the age of 16 years, and the offense is punishable by a fine not exceeding \$300. Under this act a dealer in toy pistols has been arrested and after being censured severely, by the coroner, is now held to await the action of the district attorney.

THE ENTIRE sewage of Paris is used for irrigating and fertilizing the formerly partly barren tracts of land at Achères and Pierrelay, where the cabbages, etc., now grow in rank profusion. The last great intercepting sewer emptying into the Seine was formally closed with appropriate ceremonies, July 8, and the black flood diverted to the pumping works where it is raised to a height of 35 meters and then distributed, the water finally draining clear and odorless into the river. In the addresses delivered a glowing tribute was paid to several physicians, Bourneville, Cornil, Proust and others, who in the Senate Chamber and City Hall so materially forwarded the great work now brought to completion.

THE CRUPPI bill to regulate medical expert testimony, already mentioned in the JOURNAL, has been passed by the French lower house, but so enlarged in its scope that it now applies to all expert testimony in all criminal cases. It provides for a list of experts to be prepared each year, by the authorities, to include among others all the various faculties of medicine, pharmacy, and sciences, and physicians, surgeons and pharmacists connected with hospitals and asylums, classified according to specialties. From this list the judge appoints one or more experts and the accused an equal number, who are to study and confer together and in case of impossibility to agree, to select a third, or he can be selected by the court. The expenses are to be included in the court costs. The House passed a resolution independent of the bill urging that more attention be paid to legal medicine in the medical colleges.

SPONTANEOUS GANGRENE IN CHILDHOOD.—It is not always possible to ascertain the causes that lead to the changes in the vessels that are responsible for the development of spontaneous gangrene. In those of mature and advanced years vascular degeneration may be considered as a more or less physiologic process, constituting a part of the process of senescence. Pathologically it may occur also earlier in life. Under such circumstances we naturally look for an infective or toxic origin. The condition is obviously rare in early life, and when it does occur one is naturally inclined to attach greater importance to hereditary predisposition, alone or in conjunction with acute infectious disease, than to any other possible single cause. A unique case of spontaneous gangrene occurring in a child a year and a half old, has been placed on record by Goebel (*Deutsches Archiv. f. Klin. Med.*, 63 B., 1. und 2 H. p. 94). The parents were healthy; two children were well, and one had died of convulsions during dentition. The patient had been nourished artificially, had its first tooth at four months, walked at fifteen months, and had off and on suffered from catarrh of the respiratory passages, of which there had been an aggravation four weeks before coming under observation. Fever set in, with severe

cough, prostration and anorexia. After eight days the child dragged the left leg, although it presented no physical abnormality. There was no knowledge of traumatism. After another week the tonsils became enlarged, and a rash appeared over the whole body. The child was not severely ill, was free from vomiting, and had but slight fever. The eruption disappeared in the course of a few days, although the condition of the leg meanwhile underwent no change. The child, however, became peevish, restless, and sleepless, with mild delirium at night. It coughed a good deal, ate scarcely anything, asked only for water and lost perceptibly in flesh. Finally the extremity became marbled in appearance, strikingly cold, slightly swollen and within a short time entirely blue. Examination of the blood disclosed a slight increase in the number of leucocytes. The spleen was small, and the urine contained neither albumin nor sugar. A diagnosis of occlusion of the anterior tibial artery was made, and this was confirmed by the formation of a line of demarcation in the upper third of the leg. The parents refused to permit surgical intervention. In the course of a few days more signs of pneumonia made their appearance, together with albumin and tube-casts in the urine. The throat became red and edematous, and a mucoid deposit formed on the tonsils. Death finally took place amid septic symptoms. The autopsy disclosed necrotic destruction of both tonsils and catarrhal pneumonia, especially in the left upper lobe, with purulent bronchitis. The heart was dilated, its musculature firm, its cavities and valves free from thrombi and deposits. The spleen was enlarged, the liver pale, the kidneys cloudy. The aorta from the origin of the renal arteries was occluded by a thrombus, which on the left side extended to the division of the popliteal artery and projected into the anterior and posterior tibials. On the right the clot extended to the origin of the deep femoral artery. The veins were empty. The thrombus was brownish-red in color, without lamination, and nowhere presented appearances suggestive of an embolic origin. The only abnormality discovered from histologic examination was a local endarteritis at the bifurcation of the popliteal artery.

Therapeutics.

Chronic Catarrhal Gastritis.

R. Quinia sulph.	gr. xxx	1 95
Strychnin sulph.	gr. ss	032
Acid hydrochlor. dil.	ʒiiss	9 75
Tinct. cardamon. comp.	ʒiiss	9 75
Aqua, q. s. ad.	ʒiv	124 40

M. and filter. Sig. One teaspoonful in water after meals.

—Wm. Pepper.

R. Tinct. nucis vom.	ʒiii	7 80
Resorcin resublim.	ʒiii	7 80
Tinct. gentian.	ʒv	19 50
Syrup simplex, q. s. ad.	ʒv	155 50

M. Sig. Tablespoonful every two or three hours.

R. Tinct. nucis vom.	ʒi	3 90
Decoct. condurango.	ʒiv	124 40

M. Sig. Tablespoonful half an hour before meals.

—Ewald.

To dissolve the mucus and destroy microbes of fermentation, lavage and

R. Hydrozone	ʒi	3 90
Aqua destil., q. s. ad.	ʒiv	124 40

M. Sig. Drink while stomach is empty once daily.

The hydrozone may at first produce acid sensations in the stomach, but as the irritated gastric surface improves in tone under its influence this will pass away and sensitiveness to its action will subside. When necessary the amount of hydrozone

may be reduced until the stomach becomes more tolerant to it.

—H. T. Webster.

G. Hayem prescribes in the hyperpeptic form, with abundant secretion without dilatation, a course of Carlsbad water, unless there be heart disease or phthisis or the subject be feeble or aged. A formula for an artificial Carlsbad, for home use, is the following:

R. Sodii sulph.	gr. xl	2 60
Sodii bicarb.	gr. xl	2 60
Sodii chlorid.	gr. xvi	1 04
Aqua destil.	ʒxxxiii	1026 30

Sterilize or consume while fresh.

GASTRIC NEUROSI.

R. Morphin hydrochlor.	gr. iiii	20
Cocain hydrochlor.	gr. v	32
Tinct. belladonna.	ʒi	3 90
Aqua amygd. amar.	ʒv	19 50

M. Sig. Ten to fifteen drops (.5-.75 gm.) every hour. When pains are very severe, three doses of ten drops (.5 gm.) each within an hour.

R. Codein phosph.	gr. ¼	016
Bismuthi subnit.	gr. v	32
Sacchari lact.	gr. iiii	30

M. Sig. A dose, every two hours.

—Ewald.

Treatment of Hepatic Insufficiency.

According to the *Medical Review of Reviews*, Gilbert and Weil have recently studied two cases of "lesser diabetes" in which there were present an enlarged liver, digestive glycosuria, urobilinuria and hepanozoturia, together with indicanuria, a picture suggestive of hepatic insufficiency. All these symptoms disappeared under the administration of hepatic extract. In another case a consumptive with enlarged liver had no other symptom than indicanuria which was persistent. Under the use of hepatic extract this symptom disappeared to return when the extract was discontinued.

Local Treatment of Pneumonia in Children.

The *Medical News*, May 20, refers to Chase's observations on the efficiency of external applications in the treatment of pneumonia in children. The forty-five patients studied lived in tenement-houses, in unfavorable surroundings. All but two were over a year old. Of thirty-nine who had lobar pneumonia, thirty-eight recovered. Six had bronchopneumonia, and of these four recovered. The effect of poultices was especially noted. These were made light, of flaxseed and cheese cloth, and covered with oiled silk or paraffined paper, and weighed not more than six ounces (186.6 gm.) They were placed on the affected part while the child was in bed, and removed in 30 or 40 minutes. Rarely were more than six or eight applied in twenty-four hours. Observation convinced him that poultices diminish pain, and have a soothing effect, often producing sleep; that they relieve dyspnea and reduce the number of rales; that they are rarely opposed by the children, and by adding to the comfort of the patient they maintain his strength and so facilitate his recovery.

Subacute or Chronic Bronchitis.

The following prescription is recommended by Crinon:

R. Terpin hydratis.	gr. lxxx	5 20
Glycerin.		
Spiritus aa.	ʒiiss	77 70
Mellis despumat.	ʒi	62 20
Tinct. vanille.	m. lxxv	4 67

M. Sig. Two to four tablespoonfuls a day.

Treatment of Angina Pectoris.

The best remedy during the attack is the inhalation of amyl nitrite. This should be administered in glass capsules, to be crushed in a handkerchief held to the nose. The beginning dose is four minims (.24 gm.) which must later be increased to eight minims (.48 gm.) If the attack is prolonged, trinitrin should be given per os or subcutaneously, as in the following formula:

R. Spts. glonoini (1 per cent.)	gtt. xi	155
Aqua laurocerasi.	ʒiii	11 70

One or more syringefuls may be injected, or three drops (.15 gm.) of trinitrin in water, increased to six drops (.3 gm.). Between the attacks regulate the diet and forbid alcoholic drinks. White meats, eggs, vegetables, and as drink, milk, mineral water, and tea should form the chief diet. For medication digitalis, caffeine, and especially the iodine preparations are important. Potassium iodid should be administered for one month, followed by sodium iodid given for two months, as in the following formula:

R. Potass. iodid.....	3iiss-5v	9 175-19.50
Ext. thebaice.....	gr. iii	20
Aqua destil.....	ʒx 3ii	

M. Sig. Teaspoonful three times a day. Continue course for two to four years.

R. Sodii iodid.....	3iiss-3iiss	5 185-9.75
Sodii arsenit.....	gr. i	065
Aqua destil.....	ʒxxxxvss	138 45

M. Sig. A tablespoonful three times a day. —Huguenin.

Dysmenorrhœa.

R. Antipyrin.....	3iiss	9 75
Ammonii bromid.....		
Potassii bromid. āā.....	ʒi¼	4 87
Ext. viburni prunifol.....	ʒv	19 50
Spts. vini gallici.....		
Syrup aurantii, āā.....	ʒx 3i	39
Aqua destil.....	ʒxxxx	79 95

M. Sig. A teaspoonful four or five times daily. —Cushing and Cunston.

DYSMENORRHEA AND OVARIAN NEURALGIA.

R. Ext. belladonna.....		
Ext. stramonii, āā.....	gr. 1/5	012
Ext. hyoscyami.....	gr. ¼	016
Quin. sulph.....	gr. ss	03

M. Ft. pil No. ii. Sig. One repeated in two or three hours if necessary.

—Steer.

Tinct. cannabis ind.....	m. x	60
Syrup chloral hydrate (P.B.).....	m. xx	1 20
Glycerin.....	ʒi	3 90
Aqua camph. q. s. ad.....	ʒi	31 10

M. Sig. One dose to be taken at the commencement of pain. A second dose may be given in three hours, but no more until the next day.

—Bedford Fenwick.

For nervousness and general malaise, especially at the period of the menopause.

R. Ammonii bromid.....	ʒi	7 80
Sodii bromid.....	ʒiv	15 60
Spts. ammon. aromat.....	ʒvi	23 40
Aqua camph.....	ʒvi	186 60

M. Sig. Teaspoonful every four hours. —Parvin.

Vaginismus.

R. Zinci valerianati.....	gr. 5/6	05
Quinin valerianat.....	gr. iss	095
Ext. opii.....		
Ext. belladonna, āā.....	gr. 1/6	01

M. Ft. pil No. i. Sig. From three to six pills daily.

Locally:		
Ext. krameria.....	gr. iss	095
Morphin hydrochlor.....	gr. ¼	008
Ol. theobrom.....	ʒi	3 90

—Tourcnaint.

Sexual Atony in Women.

R. Ext. cannabis ind.....		
Ext. nucis vom. āā.....	gr. xxx	1 95
Ext. aloes aq.....	gr. vii	46

M. Div. in pil No. c. Sig. One three times a day.

Taste of Potassium Iodid Disguised.

Dr. F. E. Ferre of San Francisco, Cal., writes: "It gives me pleasure to forward you a formula for the administration of potassium iodid. I have given such a mixture to many of my medical friends who are more than pleased with it. One teaspoonful readily disguises the taste of ten grains of the iodid:

MIXTURE YERBINUS COMPOUND.

R. Saccharin.....	ʒiii	11 70
Ft. ext. orange peel.....	ʒii	7 80
Ft. ext. yerba santa.....	ʒii	7 80
Ft. ext. ginger.....	ʒiv	124 40
Aqua.....	ʒiv	1920

Mix. Add ʒi (31.1 gm.) MgCO₃; shake; let it stand for twenty-four hours; filter. Color red with ʒi (31.1 gm.) fl. ext. udebear, if desired.

Book Notices.

Electro-Hæmostasis in Operative Surgery. By ALEXANDER J. J. SKENE, M.D., LL.D., professor of gynecology in the Long Island College Hospital, etc. New York: D. Appleton, 1899.

This work is a monographic statement of the construction and uses of the author's electric hæmostatic forceps, which appears to be a very valuable addition to the surgeon's armamentarium. It is profusely illustrated, the descriptions are clear and readable, and the author's success with his method appears to have been very satisfactory in quite a wide range of operations. The cuts, though evidently made from elaborate drawings, are largely schematic, and, therefore, the more intelligible and illustrative of the text. The concluding chapters are devoted to the description of the author's approved methods of surgical antiseptis and asepis, including hospital construction and disinfection methods.

Albuminuria and Bright's Disease. By NESTOR TIRARD, M.D., F.R.C.P., physician to King's College Hospital, etc. With original illustrations. London: Smith, Elder & Co., 1899.

This latest addition to the text-books on kidney disease and albuminuria seems to have the merit of being a clear, practical monograph of the subject, especially in its purely medical aspects, as, while it includes also the kidney affections that sometimes call for surgical measures, these are left for the student to refer to in especially surgical works. It is also brief in its mention of the usual urine tests, and, as a text-book, perhaps more might have been said as to these. In other respects it seems a valuable work both for the student and the practitioner, and one that can be heartily recommended.

BOOKS AND PAMPHLETS RECEIVED.

Acknowledgement of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review as dictated by their merits, or in the interests of our readers.

Manual of Bacteriology. By Robert Muir, M.A., M.D., F.R.C.P.Ed., and James Ritchie, M.A., M.D., B.Sc. Second edition. Illustrated. 8vo. Cloth. Pp. 564. Price, \$3.25. Edinburgh and London: Young J. Pentland. New York: The Macmillan Co. 1899.

A System of Medicine by Many Writers. Edited by Thomas Clifford Allbutt, M.A., M.D., LL.D., F.R.C.P., F.R.S., F.S.A. Vol vi. Octavo. Cloth. Pp. 944. Price, \$5.00. New York: The Macmillan Co. 1899.

Mechanics of Surgery. Comprising Detailed Descriptions, Illustrations and Lists of the Instruments, Appliances and Furniture Necessary in Modern Surgical Art. By Charles Truax. Large Octavo. Cloth. Pp. 1024. Chicago: 1899.

Pulmonary Tuberculosis. Its Modern Prophylaxis and the Treatment in Special Institutions and at Home. Alvarenga Prize Essay of the College of Physicians of Philadelphia for the year 1898, revised and enlarged. By S. A. Knopf, M.D. (Paris and Bellevue, N. Y.), physician to the Lung Department of the New York Throat and Nose Hospital; former assistant physician to Professor Detweiler, Falkenstein Sanatorium, Germany; vice-president of the Pennsylvania Society for the Prevention of Tuberculosis; Fellow of the American Academy of Medicine; laureate of the Academy of Medicine of Paris, etc. With descriptions and illustrations of the most

important Sanatoria of Europe, the United States, and Canada. Octavo. Price, \$3.00 net. Philadelphia: P. Blakiston's Son & Co.

Principal Poisonous Plants of the United States. Svo. Cloth. Pp. 60. Published by the Illinois State Board of Health. 1899.

Transactions of Southern Surgical and Gynecological Association. Vol. xi. Eleventh Session, held at Memphis, Tenn. Octavo. Cloth. Pp. 516. Published by the Association. 1899.

Pyrorrhea Alveolaris and Its Relations to General Medicine. By John Fitzgerald, L.D.S. Small Octavo. Cloth. Pp. 62. London: The Medical Publishing Co., Ltd.

Mineral Waters of United States and their Therapeutic Uses. With an account of the various Mineral Spring localities, Means of Access, etc. By James K. Crook, A.M., M.D., adjunct professor of clinical medicine and physical diagnosis at the New York Post-Graduate Medical School, etc. In one octavo volume of 580 pages. Cloth, \$3.50, net. Philadelphia and New York: Lea Brothers & Co. 1899.

Deaths and Obituaries.

W. N. Alsop, M.D., Shaw, Miss., formerly of Louisville, Ky., was called to see a patient at Cleveland, Miss., July 12, and there murdered. . . . S. H. Boyd, M.D., Tolu, Ky., was thrown from a cart and instantly killed July 1. . . . Joshua A. Brown, M.D., McConnellsville, Ohio, died July 7, aged 85 years. . . . Clarence Chapman, M.D., Medina, N. Y., died July 8, aged 84 years. . . . Byron S. Coleman, M.D., Rochester, N. Y., July 15, aged 38 years. . . . A. J. Davis, M.D., Pittsburg, Pa., July 19, aged 73 years. . . . S. N. Guice, M.D., Meridian, Miss., July 7, aged 60 years.—John M. O'Byrne, M.D., Ocean View, Cal., July 10, aged 39 years. . . . David Rosenthal, M.D., Chicago, July 18, aged 70 years. . . . Charles J. Siglinger, M.D., Philadelphia, July 12. . . . John T. Stafford, M.D., San Francisco, Cal., July 3, aged 30 years. . . . William R. Wood, M.D., Scotland Neck, N. C., formerly superintendent of the insane asylum at Raleigh, July 12, aged 75 years. . . . Burrows Burdick, M.D., Stoughton, Wis., June 30, aged 76 years.

HENRY TUBBS, M.D., Kirkwood, Ill., ex-state senator, president of the First National Bank of Kirkwood, First National Bank of Alexis and National Bank of Monmouth, died July 16, after a brief illness.

PAUL JONES, M.D., who for several years has been connected with the department of biology in Vanderbilt University, Nashville, Tenn., was drowned at Wood's Holl, Mass., where he was doing special work in biology, July 1. He was 31 years of age.

C. W. CRAM, M.D., Davenport, Iowa, died July 13, aged 65 years. In 1857 he entered Starling Medical College, and later served as house surgeon of the hospital at the Ohio State Penitentiary for several years, afterward becoming superintendent of the hospital.

GEORGE W. BARCOCK, M.D., Chelsea, Mass., died July 14, aged 84 years. He was one of the founders of the Massachusetts Society of Medical Examiners.

KATHARYN N. NORTHROP, M.D., Women's Medical College, Philadelphia, 1893, formerly of the Warren, (Pa.) Asylum, and for the past three years resident physician of the South Mountain State Insane Asylum, died in Reading, Pa., July 15.

RUSSELL STURGIS, M.D., Harvard, 1881, of Boston; died there July 18. He was a son of Major Russell A. Sturgis and a grandson of the Russell Sturgis of Haring Brothers, London.

JAMES S. GEARY, M.D., Bellevue, 1892, coroner's physician Borough of the Bronx, New York city, died in Moot Haven, N. Y., July 18, aged 30 years.

CYRUS N. LAWRENCE, M.D., Vermont Medical College, Wood-

stock, Vt. (now extinct), 1850, died suddenly July 18, at a sanitarium in Jamaica Plains, Mass. He was mustered in as surgeon of the Tenth Massachusetts, in June, 1861, and was in charge of the hospital establishment at Gettysburg after the battle. Afterward he was transferred to the South Street Hospital, Philadelphia, in 1863, and in 1864 became medical inspector of the First Army Corps.

CHARLES HOWARD HILL, M.D., Philadelphia, died July 18, aged 85 years. Dr. Hill was a graduate of the Jefferson Medical College, and was in active practice for a period of nearly sixty years. In early life he took considerable interest in politics and was at one time a member of the state legislature.

ORIS B. BEXBROOK, M.D., formerly of Natchez, Miss, died July 14, aged 29 years. The Doctor received his degree in medicine from Tulane University, New Orleans, in 1893, returning to Natchez, where he was connected with the hospital for some years. In 1897 he removed to St. Joseph, La.

Miscellany.

Systolic Mitral Murmurs: Correction.—In Dr. Horace D. Arnold's article on this subject in the *JOURNAL* of July 15, on page 143, line 13, column 1, read: "We can not find a dividing line between the so-called anemic murmurs and the mitral murmurs."

Hernia of the Diaphragm.—There are 433 cases of hernia of the diaphragm on record, but seldom of such extent as the case of a new-born male infant who showed no external indications of the condition. The left pleural cavity contained, in a hernial sac, almost the entire contents of the abdomen, with the heart and large thymus pushed entirely over to the right.—*Wien. Klin. Woch.*, 24.

Traumatic Aural Affections.—Radzich reports several instructive cases which emphasize the importance of examining the ears in case of traumatic injury to the body. Symptoms of a traumatic lesion of the inner ear are chronic hyperemia of the deeper segment of the meatus externus and of the tympanum. The temperature-curve is also an indication in catarrhal otitis with a subacute course.—*St. Petersburg Med. Woch.*, July 1.

Philadelphia Mortality Statistics.—The number of deaths for the week just closed was 510, an increase of 28 over last week and a decrease of 13 over the corresponding week of last year; 211 occurred in children under the age of 5 years. The following were the principal causes of death: apoplexy, 11; nephritis, 26; cancer, 17; cholera infantum, 73; tuberculosis, 69; diabetes, 2; heart disease, 24; pneumonia, 17; appendicitis, 4; suicide, 1; sunstroke, 3; tetanus, 7.

Chronic Ankylosis of Spine.—N. Schatalow describes three cases of this rare affection. He notes that the pains disappear when reclining and are more intense when the patient moves about. He considers these pains due to the compression of the nerve roots as well as the affections of the bones. This compression explains the other nerve symptoms noticed. The affection begins gradually and may be due, he suggests, to a congenitally defective development of some segments of the connective tissue and skeleton, with premature sclerosis.—*St. Petersburg Med. Woch.*, July 1.

Specific Toxic Properties of Tuberculin Acid.—Ruppel isolated from the tubercle bacillus a specific nucleic acid, and Behring announces that this acid alone is fully as effective, to say the least, as any other preparation yet produced for the treatment of tuberculosis. It also retains its specific properties much longer. With the help of this tuberculin acid the degree of toxicity of any tuberculin product can be regulated as desired. His communication in the *Berlin Klin. Woch.*, No. 25, describes his methods of testing, on animals, the specific

toxicity of preparations of tuberculin, for which he considers cattle better adapted than goats.

Parishes Must Pay for Keeley Cure.—The supreme court of Louisiana holds that article 202 of the constitution of 1870, while properly construed to mean that the taxing power was to be exercised by the general assembly for state purposes, by parishes for parish purposes, and by municipal corporations for the purpose of such corporations, is also to be construed with article 163 of the same constitution, which provides that "the general assembly shall make it obligatory upon each parish to support all infirm, sick and disabled paupers residing within its limits," etc., and, when so construed, did not affect the power of the general assembly, by the adoption of Act No. 157 of the Acts of 1894, to require the parishes to pay the expense of treatment at the Keeley-Cure Institute of persons contemplated by said act, and as therein provided. Moreover, it holds that the plaintiff, in *Webster vs. Police Jury of Parish of Rapides*, had the right, being a poor man, etc., to place his brother in the institute for treatment, and to look to the parish to pay the bill; and if, as between himself and the institute, and in order that the purpose of the law might not be defeated, he borrowed the money and paid the fee required by the institute in advance, he still had the right to look to the parish to pay the bill.

Hydrophobia and the Pasteur Treatment.—The Chicago Pasteur Institute gives a summary of the results of the preventive inoculations against hydrophobia attained since its inauguration, July 2, 1890. During this time 750 patients received the antilymphobiotic treatment. Of these 789 were bitten by dogs, 29 by cats, 26 by horses, 7 by skunks, 5 by wolves, 2 by cows, 1 by a calf, 1 by a rat, 1 by a mule, 1 by a pig, and 3 by hydrophobic human beings; 377 persons received severe and multiple lacerated bites on the hands and wrists, 92 on the head and face, 110 on the arms, 173 on the legs and thighs, and 28 on the trunk. Following the role of Pasteur, the patients treated have been classified as follows: 1. Persons bitten by animals recognized and ascertained to be rabid by the first experiment made in the laboratory or by the death of other persons or animals bitten by the same animal; of this class 268 were treated. 2. Persons bitten by animals recognized to be rabid by the symptoms of the disease shown during life; of this class 378 were treated. 3. Persons bitten by animals strongly suspected to be rabid; of this class 161 were treated. Only three deaths have been reported, thus giving a mortality of 0.38 per cent. Before the discovery of the Pasteur treatment the mortality was as high as 88 per cent. for the bites of the face, 67 for bites of the hands, and 20 to 30 per cent. for those of the limbs and trunk. All patients tolerated the treatment perfectly well. The treatment consists in hypodermic injections of a specially prepared virus of different gradation of strengths for a period of fifteen, eighteen or twenty-one days, according to the severity of the case. The method used is identical with that used in Paris.

Army Medical News from Manila, P. I.—Reports from Chief Surgeon Henry F. Hoyt, Second Division, Eighth Army Corps, detailing the movements and engagements of his division during the month of May, 1899, have been received at the surgeon-general's office. An engagement with the insurgents took place May 3, at the Santo Tomas railway station. The troops suffered greatly from heat and thirst, as their canteens became empty early in the day and the water found in the locality was brackish. The wounded were sent to the rear, on hand-cars. Filipino prisoners were made to propel the cars as our own men were so prostrated by the heat. After being cared for at the dressing stations the wounded were immediately sent to Manila by train. On the 24th another engagement took place west of San Fernando. The wounded, including some Filipinos, were treated at the field-hospital and sent to

Manila on the same day. The casualties for the month were 6 killed and 52 wounded. On May 25 a division field-hospital was established in San Fernando in five adjoining buildings. Major Guy L. Edie, brigade surgeon volunteers, in charge. The capacity of this hospital is 200 beds. Diarrheal troubles were so greatly on the increase during the month that recommendation was made to regulate and restrict the sale of fruit. Major Hoyt's recommendations for change in the ration to meet the conditions of service in the tropics are that the rice of the field ration should be increased to six ounces. Company commanders should encourage its use and see that the cooks prepare and serve it in palatable form. The canned corned beef of the travel ration has been generally disliked by the troops of this division. In place of it boiled sliced ham or a sausage, three parts beef and one part pork, is recommended. In place of beans a nutritious vegetable soup is proposed. These articles and the tomatoes of the ration should be put up in flat cans, as being more convenient to carry than those of the present shape.

Influence of Borax on Nutrition.—In a recent number of the *Am. Jour. of Physiology*, R. H. Chittenden and William J. Gies of the Sheffield Laboratory of Physiology, Yale University publish the results of their experiments in a study of the influence of borax and boric acid on nutrition, with special reference to proteid metabolism. In view of the wide-spread use in commercial food preparation, of boric acid and borax as a preservative, as well as the general interest recent inquiry into food adulterations has awakened, their conclusions are of special interest. The experiments were conducted on full-grown dogs, whose nitrogenous equilibrium was well determined before the experiments were begun; the animals were suitably caged that all excreta, both liquid and solid, could be collected. During the experimentation the animals were fed on a properly-balanced mixed diet composed of lean beef, cracker-meal, lard and water. Great care and accuracy was resorted to in the preparation and administration of this food, which was served twice daily, the boric acid or borax being usually given with or immediately following the meal, enclosed in a gelatin capsule. Three distinct series of experiments were perfected and carried on. In the first borax was administered, in the second boric acid, while in the third both drugs were used. The conclusions were that the administration of moderate doses of borax, that is, up to five grains per day, even if continued over a long period, does not influence proteid metabolism, nor exert any special influence on general nutritional changes in the economy; under no circumstances does borax tend to increase body weight, or to protect the proteid matter of the tissues. Large doses of borax (5-10 grams daily) directly stimulate proteid metabolism, and, if continued, lead to increased excretion of nitrogen through the urine, also of sulphuric and phosphoric acid. Boric acid, on the other hand, in doses up to 3 grams per day, is without any practical influence on proteid metabolism and on the general nutrition of the body. Borax, in large doses, somewhat retards the assimilation of proteid and fatty foods, the feces are increased in weight, and in both nitrogen and fat. Large doses produce some increase in mucus and diarrhea. Boric acid, contrariwise, in large doses is without such influence.

Right to Appoint Substitute.—A contract in writing for the employment of a county physician provided that he should perform all the duties of health officer for the county, and should also "take care of and give all poor person or persons who may be a proper charge upon the county, giving the same proper medical attention and care, furnishing all medicines, surgical dressings, and appliances," etc. Finally his bill for one quarter was disallowed. During that quarter his wife had been seriously ill for much of the time, so that it was necessary for him to remove her to a city hospital for treatment, and he

himself was quite ill for a number of weeks. To meet this emergency, he had made an arrangement with another reputable physician of the county to attend to all of his practice, both for private individuals and under the contract with the county. Upon this, however, the Board of County Commissioners relied to defeat a recovery of his bill, contending that the contract called for the personal services of the plaintiff, and that he could not substitute another physician for himself, and maintain his claim for compensation against the county. But this contention, the court of appeals of Colorado thinks, was without any force. Under every reasonable construction of the contract, it holds—Appeal of Board of Commissioners of Prowers County vs. Bedell—it did not call for the personal services, in all cases, of the plaintiff (Bedell). All that it required was proper medical attention, medicines, etc., and there was no effort to show that the substitute physician was incompetent or inefficient. Furthermore, even if the contract had specifically called for the personal services of the plaintiff, the court holds that it would be unreasonable to claim that in case of his sickness or temporary absence he could not furnish the services of another physician without forfeiting his contract, provided that such other rendered proper services. Nor does it consider that there was any error in excluding evidence that the board had early in said quarter appointed another physician county physician and health officer, under a similar contract to the above. This, the court of appeals says, was entirely irrelevant to the issues in this case, and had no bearing whatever on it. The only question, it declares, was whether the plaintiff had complied or failed to comply with his contract. Then, the Board contended that this evidence was admissible, because the contract was in part for the services of the plaintiff as health officer, and that under the statute the Board had the power to remove that officer at pleasure. But, assuming this to be true, the court holds that, under the terms of the contract, it would not prevent the recovery by the plaintiff of the compensation agreed on, if he had fulfilled the obligations of his contract, for his services as county physician.

San Francisco.

THE MEDICAL COLLEGES.—Some friction has arisen between the medical department of the State University and Cooper Medical College on the one hand, and the recently incorporated College of Physicians and Surgeons on the other, over the distribution of the wards at the City and County Hospital. The two first named colleges have been on the most friendly footing at the hospital for some years, but the introduction of a new element into the question seems to be a disturbing factor. The superintendent of the hospital, Dr. Sussdorff, states that the representatives of the new college tried to run things with a high hand and decide for themselves, without regard to the Board of Health or the other medical interests, what they would have. Dr. Sussdorff objected and the matter was adjusted by the Board of Health itself, not altogether to the satisfaction of the new college. The College of Physicians and Surgeons is not regarded with great friendliness by the other colleges. The reason the older institutions give for this lack of cordiality is that they do not consider the standard of the newly incorporated school high enough for a modern medical school. The young rival of the older schools has been in existence but three or four years, has lower tuition fees than either of the others, and has already a goodly number of students on its rolls.

SANITARY REGULATIONS OF TROOPS.—Very stringent sanitary regulations have been formulated for the protection of the men of the Oregon regiment who have recently returned from Manila. The camp at the Presidio is to be placed under the direct charge of a regular army surgeon and all precautions taken to guard the men and the other troops camped at that post from introducing any contagion. Strenuous efforts are also being made to protect the returned soldiers from the rigors

of the climate, as San Francisco weather is a most decided contrast to that which they have experienced for nearly two years past. Whether the men themselves will aid in the carrying out of the wise orders as to the wearing of overcoats, not riding on the outside of cars, being in bed early, etc., remains to be seen. As yet, however, very little sickness has developed among them, in spite of the fact that since their return the weather has been particularly bad, cold and fog prevailing most of the time.

London.

THE death of Sir William Henry Flower, the past week, has not only deprived English zoology of the last of that generation of giants, to which Darwin and Huxley were the standard-bearers—and out of which Alfred Russell Wallace has done his best to read himself, by his amazing relapses into spiritualism and antivivisection—but also the medical profession of one of its former heroes and ornaments. Like Huxley, he was not only trained, but actually began life in practice as a surgeon, in the army instead of, like his great colleague, in the navy. Educated first at University College, London, and later at the Middlesex Hospital, at the age of 23 he went out to the Crimea as assistant-surgeon to the Sixty-third Regiment. Through the entire campaign he served, to the permanent detriment of his health, but with such distinction as to receive two medals at its close. Returning to London he became demonstrator of anatomy and assistant-surgeon to the Middlesex Hospital, and in 1861 was appointed curator of the Hunterian Museum of the Royal College of Surgeons, in which position he won a world-wide reputation, and which he only relinquished to accept the directorship of the Natural History Department of the British Museum, twenty-three years later. This he held for fourteen years, until failing health compelled him to relinquish it, about a year ago. So that, although chiefly famous as a zoologist, he was intimately connected with medicine throughout the greater part of his life. He was knighted, in recognition of his high scientific attainments, in 1887. Prof. Flower will be longest remembered by his excellent monograph on "The Horse," and his superb works, "Mammals Living and Extinct," and "The Osteology of the Mammalia." Although only 67 years of age he had been in failing health for many years, said to be due to a glycosuria, dating from the strain and hardships of the long Crimean campaign, which was even worse managed from a sanitary point of view than ours at Santiago.

OUR homeopathic brethren in London have been treating themselves to a celebration this week, on the occasion of the fiftieth anniversary of the Homeopathic Hospital. Their position here is much weaker and less prominent than with us. In the first place they all have to pass precisely the same examinations and take the same M.R.C.S. and L.R.C.P. degrees as the regular practitioner, so that the source of a man's diploma is no guide to his "school." Then they, none of them, place the name "homeopathic" on their door-plates or signs, or if they do they are decidedly looked down on by their brethren, so that often only their patients and their regular neighbors know that they are homeopaths. They are a mere corporal's guard in point of numbers, compared with our large and noisy army, although, as their orator on the recent occasion seemed to think, they may have some reason to congratulate themselves on the percentage of the increase in seventy years, from one lone representative in London in 1827. They seem actually proud of the fact that their only hospital had 11,000 patients in 1850, and 19,000 in 1898, an increase of 70 per cent. in forty-eight years. They are vaguely hopeful of a school, in connection with the coming University of London, but if they are content to wait for such a "Greek Kalends" sort of a date as this, regular medicine has little to fear.

THE Royal College of Surgeons is preparing to celebrate its centenary next year by (as noted in the JOURNAL, July 22, p.

235), among other things, an application to the government authorities for a supplemental charter. In this the Council has already determined to ask for power to confer an honorary fellowship on distinguished members of the profession, who are not members of the College, said honorary Fellows not to exceed fifty in number at any one time. Now the Members of the College, who have been clamoring for recognition, and representation on the Council, are taking advantage of this proposed change to urge that a clause giving them this simple and long-refused justice should be added to the new charter. As it stands at present, the election of the Council and entire control of the affairs of the College, its library and museum is in the hands of the Fellows only, and as not more than a small percentage of the Members can afford either the time or the heavy fees required to secure the higher degree, it results in the great majority of those actually forming the College being ruled absolutely and without recourse by a small minority. Indeed, this was the frank intention of the original charter, and the tacit determination of every Council, and of most Fellows until quite recently, and although the Members have been organized for years past, and held enthusiastic and excited meetings every year to demand this right, the Council has always been able to shelter its own selfishness behind the charter and the alleged difficulty of getting any alterations made in it. Now, however, that they are actually proposing a new charter, for some of their own amendments, this excuse will no longer hold water, and it hardly seems possible that the Council can in decency refuse this act of simple justice much longer.

The charity bazaar, organized by certain ladies of title, in aid of the building fund of Charing Cross Hospital, has proved a great success, netting the handsome sum of \$75,000. There is nothing your true Briton will pay more handsomely for than an opportunity to shake hands with, or receive a smile from, a duchess. If he—or she—can only render himself interesting to such an exalted personage for a few minutes, as an object of plunder, he will be happy for a month, and submit to almost any amount of bleeding with Spartan stoicism, nay, even with enthusiasm. We suppose that it is justifiable to play on even the weaknesses of humanity in a good cause, at least so the professional keepers of our ethical ideals, the clergy, have always taught us by their example, but the spectacle of patrician dames hawking pamphlet "souvenirs" about a bazaar, at whatever price, from \$3 to \$50, which they could inveigle plebeians into paying for them, in the cause of medical education, is not one of which a great and influential profession can be especially proud, or regard as a dignified and appropriate means of securing funds for such a purpose.

The tropical expedition of the enterprising, young Liverpool school is to start early in August, and consist of Major Donald Ross, Dr. Annett and two student assistants. Its destination is the west coast of Africa—Sierra Leone—and its object the most interesting one, experimenting on the possibility of exterminating the malaria-bearing species of mosquitoes from a certain limited district, or districts, by draining the marshes, covering the pools with petroleum, and other methods recommended. The heads of the expedition will return in October, but it is hoped to leave some of its members to continue the investigation, and that Major Ross will return early in the coming year. This certainly ought to stimulate us to see that similar experiments are carried out this summer and fall, on some of our smaller river-bottoms, or mosquito-infested "summer resorts."

THINGS "do moobe" in London at times and the time-honored fog is having a serious attack made on it at last. Sir William Richmond's vigorous crusade against the smoke nuisance has finally penetrated the judicial skull-cap, and magistrates are beginning to impose really serious fines on all factories, hotels, etc., where their chimneys are complained of, warning them

that since smoke-consumers have been shown to be practical, unless they put one in at once they will be fined again on the next complaint. The big Charing Cross and Strand Electric Co. have just been made examples at two of their stations, and the effect will be most salutary.

A CURIOUS illustration of the truth of our quaint western saying, "it's dangerous to be safe," has just been afforded by a fatal bicycle accident at night, due to the excessive brilliancy of the acetylene lamp carried by the machine. A business man, returning home from a meeting at about 10 o'clock in the evening, was run into by a triplet while attempting to cross a broad street, and received a fracture of the skull base, from which he died in a few hours. The accident was seen by several witnesses, who were unanimous in testifying that the unfortunate man was perfectly sober, that the cyclist had given ample warning by sounding their gong, so that he seemed to be fully aware of their coming, and that the accident was entirely due to his becoming confused by the brilliant and dazzling rays of the huge acetylene lamp, so that in trying to spring out of its way he threw himself right in front of it. It is really time that our profession, members of which are aware of the curious confusing effect of the sudden appearance of a brilliant light at night, as illustrated by the way migrating birds dash against lighthouse windows, and moths plunge into lamp and candle-flames, amounting to an apparent fascination, should emphatically protest against the absurd and dangerous brilliancy of the newer lamps, which the whim of the cyclist is leading him to affect. They are no addition whatever to his own safety, for the brighter they are the more narrowly they limit his view, and the blacker the shade into which everything outside of their beam is cast, and they are a serious menace to the foot passenger. Indeed, it is seriously to be doubted, and needs testing by careful experiment, whether after all the carrying of a lamp at all is really a protection or a danger to both cyclist and passenger. It certainly is much more difficult to estimate either the position or the rate of approach of a lighted than of an unlighted wheel, for the simple optical reason that the slight overlapping, or non-correspondence of the two retinal images, by which we estimate distance, is entirely eliminated, as we can see nothing of the approaching cycle but a black shadow behind a brilliant luminous point. All who have had experience, either as riders or walkers, in cities like Buffalo, N. Y., which require a bell but not a light, will testify that the streets are both pleasanter and safer, for both parties. The constant stream of fire-fly lights is so annoying and the difficulty of estimating their distance to fifty yards or so, is so great that the nervous strain of crossing a street is nearly trebled, while cyclists are almost unanimous in testifying that obstacles of all sorts are much better seen and more easily avoided without a lamp.

Queries and Minor Notes.

BACTERIOLOGY IN HIGH SCHOOLS.

ATHOL, MASS., July 8, 1899.

To the Editor:—Will you kindly tell me whether there is any book published on bacteriology or germ life that is suitable as a text-book for an elementary course in high schools? Do you know of any high schools where such a course is adopted? What is your opinion of the value of such a course? Yours truly,

H. H. B.

ANSWER:—We know of no work especially adapted for high schools and doubt whether there is any general practice of teaching bacteriology in these institutions. So much depends on actual practical knowledge of the technic, that it appears to us doubtful whether any but the most general theoretic knowledge could be imparted in them. There are some small popular works, like Pruden's "Story of the Bacteria," and Conn's "Story of the Germ," but these are mere primers and hardly suitable for systematic instruction except of the most rudimentary kind. It would certainly seem to be a good thing if some general instruction on the subject, even if only rudimentary, could be imparted to the schools.

ACCREDITED MEDICAL COLLEGES.

GWAZALES, TEXAS, July 11, 1899.

To the Editor:—Will you kindly send me a list of the accredited reputa-

the medical colleges in the United States? What do you know of the diploma-mill in Chicago by the name of "The Independent" or "Collectum Independentia," or some such style? Respectfully, J. J. E.

ANSWER:—The "Appendix to the Twentieth Annual Report of the Illinois State Board of Health" contains a list of institutions recognized by the board. A copy of the list can perhaps be obtained from the secretary, Dr. J. A. Egan, Springfield, Ill.

The Independent Medical College of Chicago has no standing among reputable institutions, but is exclusively a diploma-mill. It has been proceeded against by the attorney-general, and under the new law it will undoubtedly soon be extinguished.

MEDICAL JOURNALS FOR DONATION.

CAFFEINE, ILL., July 6, 1899.

To the Editor:—I have complete files of the following medical periodicals: Phila. Med. and Surg. Reporter, 1870 to 1898; St. Louis Med. and Surg. Jour. 1867 to 1898; Obstetric Gaz., Cincinnati, first ten years; St. Louis Jour. of Med., 1885 to 1888; Chicago Med. Exam., 1863 to 1875; Va. Med. Semi-Monthly, 1889 to 1893; Compend Med. Sci., 1883-84-85; Annals of Surgery, 1888; "Breithwaite's Retrospect," several vols. These I will donate to any medical library, if any such can be found which will pay freight on them. I have them all properly filed and in good condition. Very truly yours, W. H. C.

The Public Service.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., to and including July 23, 1899:

Charles H. Alden, colonel and asst. surgeon-general, U. S. A., to represent the Medical Department at the meeting of the Association of U. S. Military Surgeons at Kansas City, Mo., in September next.

Carl H. Anderson, acting asst.-surgeon, from Washington, D. C., to San Francisco, Cal., for duty in the Department of California.

Guy G. Bailey, acting asst.-surgeon, from Mackinac Island, Mich., to San Francisco, Cal., for temporary duty in the Department.

William Bowen, captain and asst.-surgeon, Vols., assigned to the 27th Vol. Infantry at Camp Meade, Pa.

Henry H. Bradley, acting asst.-surgeon, orders directing him to report for duty with the 19th Infantry revoked; the revocation subsequently annulled.

George H. Calkins, acting asst.-surgeon, from Tonawanda, N. Y., to San Francisco, Cal., for duty in the Department.

John Ryan Devereux, acting asst.-surgeon, from Fort Hamilton, N. Y., to Camp Meade, Pa., for duty there.

F. A. E. Diano, acting asst.-surgeon, from New York City to Camp Meade, Pa., to accompany the 19th Infantry to Manila, P. I.

Douglas F. Duval, lieutenant and asst.-surgeon, U. S. A., leave of absence granted.

Richard M. Fletcher, acting asst.-surgeon, from Camp Wardner, Idaho, to Fort Harrison, Mont.

John J. Gilhuley, acting asst.-surgeon, from Bridgeport, Conn., to San Francisco, Cal., for duty in the Department.

Richard S. Griswold, lieutenant and asst.-surgeon, Vols., assigned to the 26th Vol. Infantry at Plattsburg Barracks, N. Y.

Thomas D. Ingram, acting asst. surgeon, sick leave granted.

Frank M. Kemp, lieutenant and asst.-surgeon, U. S. A., now in the Philippine Islands, is relieved from further station at Vancouver Barracks, Wash.

James S. Kennedy, acting asst.-surgeon, from Columbus Barracks, Ohio, to Fort Sam Houston, Texas.

Paul Mazzari, acting asst.-surgeon, from New Orleans, La., to Division of Cuba.

George F. Peed, lieutenant and asst.-surgeon, Vols., assigned to the 28th Vol. Infantry at Camp Meade, Pa.

Julius L. Powell, major and surgeon, U. S. A., delegated to the meeting of the Association of U. S. Military Surgeons at Kansas City, Mo., in September next.

L. B. Sandall, acting asst.-surgeon, from Au Sable, Mich., to San Francisco, Cal., for duty in the Department.

Paul F. Straub, captain and asst.-surgeon, U. S. A., now on duty in the Philippines, is relieved from further station at Camp Wrangel, Alaska.

George H. Torney, major and surgeon, U. S. A., delegate to the meeting of the Association of U. S. Military Surgeons at Kansas City, Mo., in September next.

Starling S. Wilcox, acting asst.-surgeon, to Columbus Barracks, Ohio.

Marine-Hospital Changes.—Official List of Changes of Station, and Duties of Commissioned and Non-Commissioned Officers of the U. S. Marine-Hospital Service, for the seven days ended July 20, 1899. Surgeon Preston H. Bullbacher, to proceed to New York City for special temporary duty in the supervising depot.

Surgeon C. E. Banks, relieved from duty at Washington, D. C., and detailed as medical purveyor of the service at New York City.

P. A. Surgeon H. D. Geddiogs, to proceed to New York City for special temporary duty.

A. A. Surgeon M. J. Rosenau, detailed as inspecting quarantine officer for the island of Cuba.

Asst.-Surgeon L. D. Fricks, to proceed to the Brunswick Quarantine Station, Brunswick, Ga., for special temporary duty.

Asst.-Surgeon W. R. McAdam, granted seven days extension of leave of absence.

Asst.-Surgeon T. F. Richardson, relieved from duty at the Immigration Depot, New York City, and directed to proceed to Cienfuegos, Cuba, for temporary duty.

Asst.-Surgeon F. J. Thornbury, to proceed to Point Pleasant, N. J., for special temporary duty.

Sanitary Inspector R. E. L. Burford, granted leave of absence for seven days.

APPOINTMENTS.

Alanson Weeks, of Michigan, to be acting asst.-surgeon, U. S. Marine Hospital Service, for duty at the port of Chicago.

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended July 22, 1899:

SMALLPOX—UNITED STATES.

California: Oakland, June 3 to 24, 2 cases, 1 death. Connecticut: Stamford, July 1, 1 case. District of Columbia: Washington, July 12, last two cases discharged. Georgia: Montgomery County, July 13, 9 cases. Kentucky: Louisville, July 6 to 13, 1 case. Maryland: Baltimore, July 5 to 15, 1 case. Massachusetts: Boston, July 8 to 15, 1 case. Texas: Sabine Pass, July 8 to 15, 2 cases. Washington: Almira, July 3, 9 cases; Spokane, July 1 to 8, 3 cases; Tacoma, July 1 to 8, 2 cases.

SMALLPOX—FOREIGN.

Austria: Hungary, Budapest, June 18 to July 2, 2 cases, 1 death; Vienna, June 24 to July 1, 1 death. Belgium: Antwerp, June 17 to July 1, 1 case, 1 death; Ghent, June 27 to July 1, 1 case. Ecuador: Guayaquil, June 3 to 10, 1 case. England: London, June 27 to July 1, 1 case. Egypt: Cairo, June 3 to 17, 4 deaths. France: Nantes, June 1 to 30, 1 case. Greece: Athens, June 27 to July 1, 21 cases, 9 deaths. India: Bombay, June 13 to 28, 6 deaths; Calcutta, June 3 to 10, 1 death. Mexico: Mexico, July 2 to 9, 7 cases, 9 deaths; Nuevo Laredo, July 1 to 8, 2 deaths.

Russia: Moscow, June 10 to 17, 16 cases, 8 deaths; Odessa, June 10 to 21, 2 deaths; St. Petersburg, June 16 to July 1, 34 cases, 7 deaths; Warsaw, June 3 to 24, 4 deaths.

Straits Settlements: Singapore, May 1 to June 10, 17 deaths. Turkey: Constantinople, July 9 to 19, 4 deaths.

YELLOW FEVER.

Brazil: Bahia, June 17 to July 1, 65 cases, 31 deaths. Colombia: Barranquilla, June 10 to 24, 2 cases, 2 deaths; Panama, June 27 to July 10, 17 cases, 9 deaths. Costa Rica: Punta Arenas, July 10, reported. Cuba: Santiago June 10 to 17, 6 cases, 1 death. Mexico: Mexico, July 6 to 13, 28 deaths; Vera Cruz, June 1 to July 6, 27 cases, 25 deaths. San Salvador: San Salvador, July 1, 1 case from Guatemala.

CHOLERA.

India: Bombay, June 13 to 20, 1 death; Calcutta, June 3 to 10, 10 deaths; Madras, June 3 to 9, 1 death.

PLAGUE.

Africa: French Ivory Coast, June 7, 500 deaths. Egypt: Alexandria, June 20, 42 cases to date, no deaths. India: Bombay, June 13 to 20, 53 deaths; Calcutta, June 3 to 10, 21 deaths.

Japan: Formosa, Tamsui, May 3 to 24, 318 cases, 225 deaths. Persia: Bushiro, present. Straits Settlements: Penang, January 1 to June 2, 20 cases, 17 deaths; Singapore, present.

CHANGE OF ADDRESS.

Bradley, C. H., from 9 W. 219 to 3609 4th Av. So., Minneapolis, Minn. Briggs, C. T., from City Hosp. to 191 Island Av., Minneapolis, Minn. Curtis, A. B., from Ferry to Maple City, Mich. Church, W. F., from Austin, Ill., to Delphi, Ind. Curtis, W. H., from Greencastle to Columbus, Ind. Dotterweich, F. V., from Cleveland to Ashland, Ind. Eastman, J. R., from 315 to 249 N. E., Indianapolis, Ind. Gray, G. A., from Minneapolis, Minn., to Mohawk RR., Spokane, Wash. Gallagher, M. L., from 650 Adams to 144 Oakwood Bou., Chicago. HARRISS, L. H., from Fairfield to Canandaigua, Mich. Hughes, T. D., from Arbroth to Ileria, La. Hardy, J. A., from Richmond to Kilmonach, Va. Johnson, J. M., from Omaha, Neb., to Birch Tree, Mo. Johnson, A. E., from 1744 N. Clark to 349 W. Chicago Av., Chicago. Knox, J. T., from 413 Broadway to 22 W. 7th, Cincinnati, Ohio. Kinnell, A. L., from 413 Broadway to 22 W. 7th, Cincinnati, Ohio. Kellough, G. M., from 314 N. Clark to 350 La Salle Av., Chicago. Kirby, H. W., from Pallid to Airheart Bk., Cripple Creek, Colo. Lowellen, F. W., from Brookfield, Mo., to Clarinda, Iowa. Math, E. R., from Washburn Av. and 31st St. to 709 S. Chicago Av., Chicago. Landers, A. J., from Louisville, Ky., to Ochatie, Ala. McQueeny, F. J., from 33 W. Dedham to 46 Dartmouth St., Boston, Mass. Miller, W. E., from Omaha, Neb., to Sherman, S. D. Math, E. R., from 23 Adams Av. W. to 319 Woodward Av., Detroit, Mich. Meade, F. N., from Eristow to Cedar Falls, Iowa. Norris, M. D., from Baltimore to Eldersburg, Md. Oppenheimer, J. S., from 49 E. 294 St. to 16 E. 32d, New York City. Quinn, W. E., from Chicago to Lyndon, Kans. Rosser, J. C., from Thompson, N. D., to Crookston, Minn. Ramsey, from Richmond to North Level, Va. Russell, H. E., from Chicago to Stewartville, Minn. Roberts, N., from Nevada Bld. to 3712 Williams, Denver, Colo. Stephenson, W. J., from Winnetoga, Neb., to Leech Lake Ind. Agency, Walker, Minn. Trotter, J. R., from Marshalltown to Melbourne, Iowa. Tooby, A. F., from Storm Lake, Iowa, to Hubbard, Neb. White, H. B., from Abbeville to Dryden, La. Weeks, A., from Ann Arbor to Allegaon, Mich. Wiggin, T. B., from 1700 Grand Bou. to 690 E. 48th Pl., Chicago.

The Journal of the American Medical Association

VOL. XXXIII

CHICAGO, ILLINOIS, AUGUST 5, 1899.

No. 6.

Addresses.

SECTION ON LARYNGOLOGY AND OTOTOLOGY.

CHAIRMAN'S ADDRESS.*

BY EMIL MAYER, M.D.

Surgeon of the New York Eye and Ear Infirmary, Throat Dispensary;
Fellow of the American Laryngological Association and of the
New York Academy of Medicine; Member of the American
Medical Association, etc.

NEW YORK CITY.

With the advance in other branches of medicine in the past few years, otology and laryngology with their allied branches have fully kept pace. The otologist has made himself not only master of the indication pointing toward the involvement of disease in the adjoining sinuses, and in the cranial cavity, but the technics of operative procedure have been fully mastered, so that what was formerly done occasionally by the general surgeon, or more frequently was entirely unrecognized, is now promptly discovered and attended to by him.

In laryngology, intubation of a gradual nature by Schröter's tubes, or the O'Dwyer tube, has taken the place of tracheotomy in acute stenoses, while in the more chronic forms both tracheotomy and intubation may be required. In cases where a preliminary tracheotomy has been performed, the retention of the intubation-tube has been found to be frequently impossible. For such cases the ingenuity of Dr. John Rogers of New York City has come to the rescue with a most excellent and serviceable device. It consists of having a threaded opening made into the tube directly opposite the tracheal opening, and into this opening is screwed a solid hard-rubber tube which remains and absolutely prevents the tube from being coughed out. I have had most gratifying results from its use. The endolaryngeal method of removal of growths still betokens the greatest skill in the laryngologist. The curette has entirely taken the place of the cautery in the treatment of follicular pharyngitis, and the use of gargles for pharyngeal affections is shown to be rarely of avail.

In the treatment of nasal affections the greatest advance has been in the more conservative treatment of that hitherto abused organ. The various synechiae and subsequent sufferings occasioned by the indiscriminate use of saw and cautery have resulted in their practical disuse. There are many rhinologists whose saws are now accumulating the dust of time and whose galvanocautery tips rarely feel the glow of heat. The "beautiful results of the cautery of the inferior turbinate," as they have been termed, are now produced by other methods, painless, prompt, and free from subsequent discomforts.

"Many a nasal or pharyngeal mucous membrane has been practically ruined by the indiscriminate use of the cautery or knife for the relief of existing disturbances, the sole object apparently being to give space regardless

of the destruction of tissue. Had the treatment been directed toward the true cause, the nasal mucosa would have remained intact and after the relief of the congestion the individual would have left a normal secreting mucous membrane." This statement, just quoted, is from a very recent and valuable paper by one of our own members, and coincides exactly with my own experience. Whatever of good there might have been in some carefully selected cases by the use of the cautery was more than counterbalanced by the greater harm that was occasioned by promiscuous applications and in hands unskilled. Even in practiced hands it often happened that parts not intended to be touched were frequently the recipients of the sears of the cautery.

To acknowledge former errors is part of our duty and it is distinctly an advance when safer methods take the place of former crude ones. These are some few of the advances that have been made in our work; to mention all would be to review the whole literature of the past few years, a task that would be onerous to me, and also to you to be compelled to listen.

From time immemorial it has been the custom of physicians to present the results of their brain-work, whether it be in the shape of a new remedy, a new instrument or a new operation, freely to the profession, and without expectation of reward. We have come to accept these offerings quite as a matter of fact, for each of us would do the same. We are often not only indifferent, but we find fault with or try to improve on the original. Our praise, when it is bestowed, is apt to be faint, far too faint. Can we say now that we did all we should have done for our fellow countryman, O'Dwyer? His instruments and his labor will live though he has passed away; some fitting memorial will be erected to commemorate his genius and the triumph of an American physician, but how much grander and nobler it would have been had it been given in his lifetime! Since his too early demise we learn that so great a benefactor to his race, and so competent a physician, always had with him the carking load of care in the struggle for existence, and that he died practically a poor man. Oh, that we might have done better!

Wilhelm Meyer, to whom the world owes so much, had some credit in his lifetime, and a monument to his memory has been erected by the contribution of children from all over the world, and yet, so matter of fact are we that I once heard a physician say that he would not attend a certain meeting at which a paper on adenoids was to be read because someone was sure to mention Wilhelm Meyer and he was "sick of it."

It is not so many years ago that a young medical student at Vienna discovered the effects of cocaine. How much human suffering has been saved by its use, what a boon it has been to humanity, you know full well. What commensurate credit in his birthplace or in the land of his adoption has its discoverer received? None that I know of.

At a recent meeting of a large medical society, a

*Presented to the Section on Laryngology and Otology, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

speaker said that he objected to the naming of a disease or a symptom after its first investigator because it was puzzling to the student of medicine, and hence he objected to such terms as Basedow's disease, Colles' fracture, etc.

These few instances of many that might be cited give ample proof that we are far too lukewarm and too chary in our praise. In the last instance here quoted, without taking the speaker too seriously, I would say that his remarks should be positively condemned. I am not aware that the medical student seeks our solicitude, but if he does, it will be in vain, for we were able to cope with such things, nor is he any better than the student of chemistry, botany or astronomy for instance. A new chemical, a new flower or planet bears the name of its discoverer, why not an instrument or a disease?

Instead of indifference, would it not be better then if we cultivated "that most aristocratic of all virtues," appreciation? Why should we, like the proverbial republic, be ungrateful? If it were known that as a recompense for the obedience to duty that requires a medical man to give freely all that he knows for the benefit of mankind to his professional brethren, he would always receive the grateful and substantial plaudits of his colleagues, what an incentive to thorough work that would be. If, after careful investigation, it was found that his work was of such a nature that he was a benefactor to his race, a credit to his profession and to his country, some commensurate action should be taken in appreciation thereof. There is precedent enough for this.

While every soldier and sailor does his duty, yet we hail the returning hero with loud acclaim. His name is on every tongue, his deeds are sung in poetry and prose, we weave garlands to place upon his brow, we present him with swords and gifts innumerable and nothing is too great for us to do. The most facile pens describe his very action and his heroic deeds. What of the doctor? Are his deeds any the less heroic because unsung? Is his bravery any the less than that of his brother at arms who stands undaunted 'mid shot and shell? The bravery that fights the unseen foe in the most dreaded of all contagious diseases is every bit as great in him as in the other. No one is there to chronicle, and none stands ready to cheer and encourage—only duty, nothing more. Marble is enduring, and much may be placed thereon, but the eye that its words would gladden most sees it not, nor do his pulses thrill at its laudatory words, and no smile of gladness can they evoke. How much better it would be if we showed our gratitude during his lifetime. How amply rewarded such a one would feel to receive the plaudits of his brethren—the most competent of judges. What a gratification it would be if, when we acted thus, we saw how lastingly happy we had made him as we said, "Well done, thou good and faithful servant." With such incentive then, there would be no temptation to cease doing good work, for all would know that there is something still better to be had than is conveyed by the meaningless phrase, "Virtue is its own reward."

GERMANY is about to establish a school for the study of tropical diseases in Hamburg. The Medical Faculty of Berlin, led by Prof. Koch, desired the institution located at Berlin as a department of the Institute for Infectious Diseases. The Government, however, is of the opinion that from the fact that as Hamburg nearly always has patients from the tropics in her hospitals suffering from diseases which are of purely tropical nature, it would be a preferable location.

NEUROLOGY AND PSYCHIATRY.*

PROGRESS THEREIN FOR THE YEAR.

CHAIRMAN'S ADDRESS.

BY FREDERICK PETERSON, M.D.

NEW YORK CITY.

There is but one excuse to offer you for the infliction of an annual address at a Section meeting, and that is that it is a requirement of the By-Laws, from which I quote as follows:

The chairman of each Section shall prepare an address on the recent advancements in the branches belonging to his Section, including suggestions in regard to improvements in methods of work, and present the same to the Section over which he presides, on the first day of the annual meeting. The reading of such address not to occupy more than forty minutes.

I shall endeavor to fulfill the obligation thus placed upon me, to your satisfaction, by making the address a very brief one, for I shall be especially careful not to avail myself of the dangerous prerogative of occupying forty minutes should I so choose. Since I am required, in addition to presenting to you the facts of recent progress in our branch of medicine, to include "suggestions in regard to improvements in methods of work," I shall include just one such suggestion, viz., that the annual address referred to be hereafter dispensed with or curtailed to remarks not to occupy more than five minutes. I think this a very reasonable suggestion. An annual address which touches upon "recent advancements" in medicine in a general way is proper for the entire body of physicians here gathered together in one great organization, but for the Sections themselves, which are here for the summing up and discussion of the work of their members during the year, an annual address is unnecessary as well as prodigal of precious time. The chairman who would attempt to present to the members of this Section an epitome of the work done in neurology and psychiatry for one year would have a vast and wearying labor to perform, even in collecting the titles only of the many contributors in these subjects, for I am informed that there are some thirty-five hundred articles, pamphlets and books relating to our special line of work now issued yearly. Should the chairman desire to present a review to date of a somewhat new subject, such as, let us say, the cytology of the nerve-cell, he would have to examine four hundred different contributions, books and journal articles by two hundred and eighty authors, in order to write an exhaustive critique of nervous cytology.¹ I have gathered together here, however, in lieu of such an athletic study, and merely to indicate the extraordinary activity of workers in our domain at the present day, a bibliography of neurology and psychiatry and allied subjects for the year 1898 and this early part of the year 1899. I have limited this bibliography to books of over fifty pages. The innumerable pages and articles in medical periodicals are not included. I have the list here, but will spare you the weariness of hearing the titles read. Suffice it to say that there are two hundred and one books under the following headings:

Anatomy of the Nervous System, Human and Comparative	10
Anatomy and Physiology of the Nerve-Cell	12
General Neurology	48
Medical Jurisprudence	7
Criminal Anthropology	4
General Psychiatry	27
General Relation of Mind and Body	11

*Presented to the Section on Neurology and Medical Jurisprudence, at the Fifteenth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1898.

¹Bibliography of the Cytology of the Nerve-Cell. Smith Ely Jelliffe, M.D.

Aphasia 6
 Sense Organs 9
 Chronic Poisoning 2
 Special Psychology and Sexual Psychology 21

BIBLIOGRAPHY OF NEUROLOGY AND PSYCHIATRY AND ALLIED BRANCHES. JAN., 1898; MAY 1, 1898.*

* Including works of 50 pages and over. Citations which are not dated appeared in 1898, those of 1899 are so noted.

ANATOMY—HUMAN AND COMPARATIVE.

Boari, E.: Elementi di anatomia, semeiologia e diagnostico del sistema nervoso. Vol. I. Bologna, 1899, Pp. 344.
 Edinger, L.: Untersuchungen über die vergleichende Anatomie des Gehirns. 4. Studien über das Zwischenhirn der Reptilien. Frankfurt, 1899.
 Gaupp, É.: Anatomie des Frosches. I. Lehrv. vom Nervensystem. 1899.
 Davies, H.: The Cerebellum. London, 1898.
 Gegenbaur, C.: Vergleichende Anatomie der Wirbelthiere. Leipzig, Vol. I. Nervensystem.
 Koester, R.: Über das Rückenmark einiger Teleostier. Hirschwald, 1899, Pp. 88.
 Smith, G. S.: The Brain in the Edentata. London, 1899, Pp. 118.
 Flatau, E.: Atlas des menschliche Gehirns und des Faserverlaufes. Berlin, 1898.
 Flatau and Jacobsen: Vergleichende Anatomie des Gehirns der Säugetiere. Karger Berlin, 1899, Pp. 1000, c.
 Boyce, R.: A Contribution to the Study of Some of the Decussating Tracts of the Mid and Inter-brain. London, 1899, Pp. 432.
 Barker, L. F.: Structure of the Nervous System. Appleton, 1899.
 Fusari: Loc. cit. (General Relation of Mind to Body.)
 Edinger: Loc. cit. (Nervocell.)

ANATOMY—GENERAL.

Jacob, C.: Sistema nervosa. Tr. into Italian, Milan, 1899.
 Edinger, L.: Lezioni sulla struttura degli organi nervosi centrali. Italian translation. Milan, 1899, Pp. 436.

NEURVE-CELL. ANATOMY AND PHYSIOLOGY

Böhler, A.: Untersuchungen über den Bau der Nervenzellen. Wurzburg, Pp. 108.
 Deschamps, J.: Étude sur les principes et les applications de la physiologie et de la pathologie cellulaire. Paris, Pp. 104.
 Deyber, R.: État actuel de la question de l'ameboisisme nerveux. Paris, Steinheil, Pp. 17.
 Goldscheider, A.; Flatau, E.: Normal and pathologische Anatomie der Nervenzellen. Berlin, Fischer, Pp. 144.
 Edinger: Sammel Bericht über 1897-1898—Schmidt's Jahrbucher. Ap. 1899. 204, Vol. 262.

BRAIN. MORPHOLOGY, ANATOMY AND PHYSIOLOGY.

Bechterew, von: Die Leitungsbahnen im Gehirn und Rückenmark. Tr. H. Weinberg, 2 ed. Leipzig, Georgi, Pp. 692.
 Goldschetter, F.: Beiträge zur Entwicklungsgeschichte des Gehirns Nagel.
 Manouvrier, L.: Le cerveau; Morphologie générale. Anatomie comparé. Richet's Dict. de physiologie.
 Mendelsohn, M.: Physiologie du cerveau. Richet's Dict. de physiologie. Paris, Alcan.
 Nollthaus: Gehirndurchschnitte zur Erläuterung des Faserverlaufes. Wiesbaden, Bergmann, Pp. 81.
 Bechterew, von: Bewusstsein und Gehirnlocalisation. Deutsch. R. Winberg, Leipzig, Georgi, Pp. 50.
 Flechsig, P.: Études sur les cerveau. Tr. L. Levi. Paris, Vigot, Pp. 242.
 Farges: Loc. cit. (General Relation of Mind and Body.)

GENERAL NEUROLOGY.

Brissaud, E.: Leçons sur les maladies Nerveuses. Masson, 1899.
 Lescaud, de Turet: Leçons de clinique thérapeutique sur les maladies du système nerveux. Nourrit et Cie. 1898, Pp. 482.
 Raymond, F.: Leçons sur les maladies du système nerveux. O. Doin, 1898, Pp. 760.
 Gowers, W. R.: A Manual of Diseases of the Nervous System, 3 ed, Vol. I. Diseases of the Nerves and Spinal Cord. Churchill, 1899, Pp. 602.
 Wilbrand u. Söinger: Die Neurologie des Auges. Vol. I. Bergmann, Pp. 306.
 Edwards, F. G.: Contributions à l'étude de la paralysie spinale aiguë de l'adulte et de sa nature. Paris, 1898, Pp. 81.
 Ballet, V.: De la paralysie bulbo-spinale athénique ou "Syndrome d'Edin." Paris, Pp. 62.
 Maffucci, A.: Patologia della cauda equina e cono terminale. Pisa, 1898, Pp. 92.
 Gaupp, O.: Ueber Myoklonie. Tübingen.
 Liebmann, A.: Vorlesungen über Sprachstörungen, 1 and 2 heft. Coblenz, 1898, Pp. 104.
 Loma, É.: Les voies centrales de la sensibilité générale. Steinheil, 1899, Pp. 277.
 Wagner, W. and Stolper, P.: Die Verletzungen der Wirbelsäule und des Rückenmarks. Enke, 1899, Pp. 564.
 Pollack, B.: Methods of Staining the Nervous System. Trans. Glasgow, Pp. 143.
 Ramon y Cajal S.: El Sistema nervioso del hombre y de los vertebrados. Madrid, 1897-1898, Pp. 464.
 Steiner, S.: Die Functionen des Centralnervensystems und ihre Phylogenesis, 3 Abth. Die wirbellosen Thiere. Brunswick, Vieweg, Pp. 154.
 Take, D. H.: Illustrations of the Influence of the Mind on the Body in Health and Disease. Designed to Elucidate the Action of the Imagination. 2nd edit. London.

Cohn, T.: Leitfaden der Electrodiagnostik und Electrotherapie. Karger, 1899.
 Pechoutre, F.: Lesions medullaires dans le tetanos. Paris. Pp. 101.
 Brigidia, V.: Anatomia patologica del sistema nervosa preceduto da cenni sui processi morbosi e cadaverici compendiate dalle lezioni. Oneglia, 1898, Pp. 284.
 Kraft-Ebing, R.: Arbeiten aus dem Gebiet der Psychiatrie und neuropathologie. Barth, Pp. 245.
 Baas, K.: Die Augenerscheinungen des Tabes dorsalis und der multiplen Sklerose. Halle. Marhold, Pp. 129.
 Collet, F. J.: Les troubles auditifs des maladies nerveuses. Paris, Masson, Pp. 184.
 Head, H.: Die Sensibilitätsstörungen der Haut bei Visceralerkrankungen. Tr. W. Seiffert. Berlin, Hirschwald, Pp. 350.
 Schmidt-Rimpler, H.: Die Erkrankungen des Auges in Zusammenhang mit anderem Krankheiten. Nothnagel's Specielle Therapie, etc. Pp. 566.
 Schwarz, O.: Die Bedeutung der Augenstörungen für die Diagnose der Hirn und Rückenmarkskrankheiten. Berlin, Karger, Pp. 110.
 Braun, H.: Ueber die experimental durch chronische. Alkoholisierung hervorgerufenen Veränderungen im central und peripheren Nervensystem. Tübingen, 1899, Pp. 98.
 Loeb, J.: Einleitung in die vergleichende Gehirnphysiologie und vergleichende Psychologie mit besonderer Berücksichtigung der Wirbellosen Thiere. Barth, 1899, Pp. 297.

MENTAL AND GENERAL NEUROLOGY.

Adamkiewicz, A.: Die Functionstörungen des Grosshirns. Hannover, Köllner, Pp. 242.
 Adamkiewicz, A.: Die Kreislauforgane in den Organen des Centralnervensystems. Hannover.
 Althaus, G.: On Failure of Brain Power (Ecephalasthenia). Its Nature and Treatment. 5th edit. Longmans.
 Andre, G.: Études neuropathologiques. Paris. Doin, Pp. 160.
 Bailey, P.: Accident and Injury. Appleton, N. Y. Pp. 430.
 Bevor, C. E.: Diseases of the Nervous System, London, Lewis, Pp. 447.
 Church, A. and Peterson, F.: Nervous and Mental Diseases. Philadelphia, Saunders, Pp. 600, 1899.
 Congrès International de Neurologie, de Psychiatrie, etc. Paris. Alcan. Pp. 228, 226, 77, 3 parts.
 De Sanctis, S.: Contrasti psichici e inibizione cerebrale. Milan.
 Fere, C.: La famille neuropathique. 2 ed. Paris. Alcan.
 Fernandez M.: Las neuroses del corazon. Saragossa, Pp. 89.
 Gambini, G.: De la taralgie dans ses relations avec les troubles du systeme nerveux. Paris, Steinheil, Pp. 85.
 Gerest, J. M.: Application de la théorie des neurones a l'étude des affections nerveuses systematiques. Lyons. Rey, Pp. 355.
 Gerest, J. M.: Les affections nerveuses systematiques et la théorie des neurones. Paris. Bailliere, Pp. 255.
 Goldscheider, A.: Die Bedeutung der Reize zur Pathologie und Therapie im Lichte der Neurologie. Leipzig, Barth.
 Jahresbericht über die Leistungen und Fortschritte auf den Gebiete der Neurologie und Psychiatrie. Karger. Berlin, Pp. 1508.
 Loomis, A. L. and Thompson, W. G.: A System of Practical Medicine. Vol. iv. Diseases of the Nervous System and Mind. N. Y. Lea Bros. Pp. 1120.
 Milc, C. K.: The Nervous System and its Diseases. Lippincott, Philadelphia, Vol. I, Pp. 1056.
 Möbius, P. J.: Vermischte Schriften. 5th heft. Leipzig, Barth, Pp. 17.
 Oppenheimer, H.: Lehrbuch der Nervenkrankheiten für Aerzte und Studirenden, 2 ed. Karger. Berlin, Pp. 999.
 Pick, A.: Beiträge zur Pathologie und pathologische Anatomie des Centralnervensystems. Berlin, Karger, Pp. 332.
 Robin, A. (Ed.): Traité de thérapeutique applique. Maladies du système nerveuse. Paris. Rueff, Pp. 1944.
 Sommer, R.: Lehrbuch der psychopathischen Untersuchungsmethoden. Berlin, Pp. 399.

MEDICAL JURISPRUDENCE, ETC.—LEGAL MEDICINE.

Gribble, J. D. and Hehr, P.: Outlines of medical jurisprudence for India.
 Von Hoffmann, E.: Atlas manuel de médecine legale. French Trans. Paris, 1899, Pp. 169.
 Von Hoffmann, E.: Atlas Manual of Legal Medicine. English by F. Peterson, Saunders, 1899.
 Schuideluis, G.: Medicolegal studies. Swedish. Upsala, Pp. 264.
 Albini, D.: L'aborto criminoso nel diritto penale e nella medicina legale con cenni di storia, etnografia e statistica. Roma, 1898, Pp. 295.
 Handen, S.: Haandbog i Medicinallovgivning. Copenhagen, 1898, Pp. 295.
 Angioletti, G.: Manuale di antropologia criminale ad uso dei medici e degli studenti di medicina e giurisprudenza. Vallardi, 1898, Pp. 335.
 Clevenger, S. V.: Medical Jurisprudence of Insanity or Forensic Psychiatry. New York, Pp. 1423.

CRIMINAL ANTHROPOLOGY, ETC.

de Fleury, M.: L'ame du criminel. Alcan, Pp. 192.
 Aletrino, A.: Twee opstellen over crimianle antropologie. Amsterdam, 1898, Pp. 130.
 Sontarel, G. A.: Contribuzioni a l'étude des obsessions—inhibitions et en particulier de l'Éhibition (médiocr.). Bordeaux, 1898, Pp. 101.
 Angioletti: Loc. cit. (Medical Jurisprudence.)

PSYCHIATRY, ETC.

Morselli, E.: Manuale de semiotica delle malattie mentali. 2 ed. Vallardi, 1898, Pp. 557.
 Daumenann, A.: Die psychiatrische Klinik zu Giessen. Ein Beitrag zur Practischer Psychiatrie. Karger, Pp. 120, 1898.
 Lewis, B.: A Text-Book of Mental Diseases, 2 ed. Griffin, Pp. 609.
 Kraplin, E.: Psychiatrie. 6th edit. Barth, 1899, Pp. 800.

- Finzi, J.: Breve compendio di psichiatria. Hoeppli. Pp. 222.
- Frastrker, C.: Wie ist die Fursorge fur Gemuthskranke von Aertzen und Laien zu fordern. Karger. 1896. Pp. 64.
- Dubay, A.: Les desequilibres de l'amour. Chaumel. 1898. Pp. 314.
- Dore: La mort dans la paralysie g6n6rale. Paris, 1898. Pp. 82.
- Rabaud, E.: Contribution a l'6tude des l6sions spinales post6rieures dans la paralysie g6n6rale. Paris. Pp. 112.
- Faure, L.: La th6rapie des obsessions. Paris. Pp. 68.
- Leroy, E.: 6tude sur l'hallucination de fausse reconnaissance chez les ali6n6s et les sujets nouveaux. Paris. Pp. 249.
- Trenle, V.: 6tude critique sur les psychoses dites post op6ratoires. Paris. Pp. 111.
- Wilson, A.: The Brain Machine; Its power and weakness. Churchill. Pp. 157.
- Peterson, F.: Mental Diseases. (See Church and Peterson, loc. cit.)
- Berkhau, O.: Ueber den Augen und fruh erworbenen. Schwachsinnd. Vieweg. 1849. Pp. 64.
- PSYCHIATRY—GENERAL.
- Barr, C. B.: Primer of psychology and Mental Disease. 2 ed. Philadelphia. Davis. Pp. 125.
- Clark, A. C.: A Clinical Manual of Mental Diseases. N. Y. Wood. Pp. 484.
- Clevenger, S. V.: Medical Jurisprudence of Insanity or Forensic Psychiatry. New York. Pp. 1423.
- Clouston, T. S.: Clinical Lectures on Mental Diseases. 5th ed. London. Churchill.
- Finkelburg, K.: Ausgewahlte Abhandlungen und Vortrage aus den Gebieten der Hygiene und Psychiatrie. Berlin. Hirschwald. Pp. 289.
- Ireland, W. W.: The Mental Affections of Children; Idiocy, Imbecility and Insanity. London. Churchill. Pp. 418.
- Laehr, H.: Die Bartelme: Krankhafter Geisteszustand in Shakespeares Drama. Stutzart. Heft. Pp. 200.
- Mairet et Vires: De la paralysie g6n6rale, 6tiologie, pathog6nie, traitement. Paris. Masson. Pp. 225.
- Matos, J. de: A paranoia. Lisbon. Pp. 190.
- Max-Simon, P.: Les maladies de l'esprit. Paris. Bailliere. Pp. 319.
- Mohs, P. S.: Ueber das Pathologische bei Goethe. Leipzig. Barth. Pp. 265.
- Peterson, G.: Dur6le du l'alcool dans l'6tiologie de la folie. Nancy Gerardin. Pp. 99.
- Soucail, P.: Contribution a l'6tude des l6sions spinales dans la paralysie g6n6rale. Toulouse. Pp. 127.
- GENERAL RELATION OF MIND AND BODY.
- Allievo, G.: Il sistema delle potenze umane ed il loro rapporto col l'anima. Asti. 1896.
- Barker, L. F.: The Anatomy and Physiology of the Nervous System and Constituent Neurons, as revealed by Recent Investigations. Appleton. N. Y. 1888.
- Biedermann, W.: Electro-Physiology. Trans. F. Welby. Vol. xi. Macmillan. London.
- Boari, E.: Elementi di Anatomia, semiologia e diagnostica del sistema nervoso. Bologna. Pp. 206.
- Erdmann, B. and Decker, R.: Psychologische Untersuchungen 6ber das Leben an experimenteller Grundlage. Halle. Pp. 360.
- Farges, A.: Il cervello, l'anima e la facolta. Siena. Pp. 400.
- Foster, M.: A Text-Book of Physiology. Part 3. The Nervous System. London. Macmillan. Pp. 300.
- Fusari, M.: Sistema nervosa centrale. Modena. Pp. 236.
- Foster, M.: On the Physical Basis of Psychological Events. Manchester.
- Heschfeld, H.: Psychologisches u. Physiologisches aus der Deutschen Schweiz. Leipzig. Wiegand.
- Lasson, A.: Der Leib. Berlin. Gaertner.
- Orschansky, I. G.: Mechanism of Nervous Processes. St. Petersburg. Pp. 599.
- Panizza, M.: I movi element della Psicofisiologia. Loescher. Rome. Pp. 140.
- Pollack, B.: Die Farbertheorie des Nervensystems. 2 edit. Karger. AFBASIA.
- Bastian, H. C.: Aphasia and other Speech Defects. London. Lewis. Pp. 314.
- Collins, J.: The Genesis and the Dissolution of the Faculty of Speech, a Clinical and Psychological Study of Aphasia. N. Y. Macmillan. Pp. 432.
- Garnot, P.: 6tude sur l'6criture au langage 6crit et sur les troubles au point de vue m6dico-legal. Lyon. Pp. 64.
- Gutzman, H.: Das St6ttern. Frankfurt. Rosenheim. Pp. 467.
- Hepp, O. E.: Geistest6rungen bei traumatischer Aphasia. T6bingen Pletzker. Pp. 42.
- Huschens, J.: Die gew6hnlichen Sprachst6rungen und ihre Bekampfung durch Schule und Familie, in kurzer und populirer Weise dargestellt. Zurich. Fuschl.
- SENSE ORGANS.
- Panegrossi, G.: Contributo allo studio anatomico-fisiologico dei centri dei nervolo-motori dell'uomo. Rome. Pallotto. Pp. 53.
- Frost, W. A.: The Fundus Oculi with an Ophthalmoscope; 2 vols. Pentland. Pp. 124.
- Goldscheider, A.: Gesammelte Abhandlungen. Band i. Hautsinne. I. Muskeln. Leipzig. Barth. Pp. 432—232.
- Maddox, E. E.: Tests and Studies of the Ocular Muscles. Bristol. Wright. Pp. 442.
- Politzer, A.: La dissection anatomique de l'organe auditive de l'homme. Tr. Schiffers. Liege. Desoer. Pp. 282.
- Reddingus, R. A.: Das Sensorische Werkzeug. Engelmann. Pp. 128.
- Tscherning, M.: Optique physiologique. Paris. Carr6. Pp. 335.
- Parnaud, H.: La vision. 6tude physiologique. Paris. O. Doin. Pp. 218.
- St6br, A.: Zur Hypothese der Sehstoffe und Grundf6rbe. Leipzig. Deuticke. Pp. 103.
- Lombroso, C.: Die Lehre von der Pellagra. Tr. from the Italian. Coblenz. 1898.
- Fromme, A.: Die Missbrauch von Morphium und Cocain und seine sch6nende Behandlungsweis. Second ed. Leipzig. 1898. Pp. 132.
- Braud, H.: Loc. cit.
- SPECIAL PSYCHOLOGY—SEXUAL PSYCHOLOGY.
- Stinzinger, R.: Schlaf und Schlaflosigkeit. Erfurt. Villaret.
- Tissie, P.: Les revers. Psychologie et physiologie. Second ed. Paris. Alcan.
- Wreschner, A.: Methodologische Beitrage sur psycho-physischen Messungen. Leipzig. Barth. Pp. 238.
- Stern, L. W.: Psychologie der Verinderungsuffassung. Breslau Preus & Junger. Pp. 274.
- Leutenbach, R.: Die Geometrischoptische Mauschungen und ihre psychologische Bedeutung. (New Literature.) Zeitschrift f. Hypnotismus. 8. pp. 28-39.
- Oddi, R.: L'inibizzition dal punto di vista fisiolo-pathologico, psicologica e sociale. Turin. Broca. Pp. 306.
- Marshall, H. B.: Instinct and Reason. London. Macmillan. Pp. 571.
- Bourc, J.: Psychologie de l'instinct sexuel. Paris. Masson.
- Barrucco, N.: Die Sexuelle Neuraesthenie und ihre Beziehung zu den Krankheiten der Geschlechtsorgane. O. Salle. Pp. 177.
- Scott, J. F.: The Sexual Instinct. Treat., N. Y. Pp. 436. 1899.
- Roheier, H.: Die Masturbation. Eine Monographie fur Aerzte u. Pfdagogen. Fischer. Pp. 319.
- Lowenfeld, L.: Serrualleben und Nervenleiden. Second ed. Bergmann. 1899. Pp. 262.
- SEXUAL PSYCHOLOGY.
- Janet, P.: Nevroses et id6es fixes. Paris. Alcan. Pp. 492.
- Krafft-Ebing, R. V.: Psychopathia Sexualis. Tenth ed. Stuttgart. Enke. Pp. 376.
- Krafft-Ebing, R. V.: Psychopathia Sexualis. Translation. F. A. Davis Co.
- Melli, A.: L'inversione sessuale. Tr. Rome.
- Fujita e Hicouchi: Studi di psicologia psico-sensuale. Rome. Capaccini.
- Raymond, F., et Janet, P.: Nevroses et id6es fixes. II. Paris. Alcan. Pp. 559.
- Souleyre, C.: Neuraesthenie et g6nito-pathies f6minines. Paris. Bailliere. Pp. 212.
- Thoinot, L.: Attentats aux moeurs et perversions du sens g6nital. Paris. Doin. Pp. 518.
- Wille, W.: Die Psychosen des Pubertatsalters. Leipzig. Deuticke. Pp. 218.
- Zucarelli, A.: Psychiatria e organe psico. Naples. Gambella. Pp. 68.
- EPILEPSY—NEURASTHENIA—HYSTERIA.
- Arden-Deltel, P.: L'6pilepsie psychique dans ses rapports avec la criminalit6 et l'alienation mentale. Paris.
- Goldfeli, C.: Die epilepsie und neuraesthenie. Milan. Vallardi. Pp. 73.
- Bourneville: Recherches sur l'6pilepsie, l'hystere et le idiotie. Paris. Alcan. Pp. 290.
- Deutsch, M.: Die Ursache und Heilung der Epilepsie. Second ed. Berlin. Steinitz. Pp. 131.
- Eyraud, G.: Contribution a l'6tude la simulation de l'hystero-neuraesthenie traumatique. Lyons. Pp. 51.
- Goldfeli, A.: De l'h6miostalismes. Vari6t6 de h6mat6m6se hyst6rique. Lyon. Bourgeois. Pp. 224.
- Kann, A.: Nervositat und Radfahren. 2d and 3d ed. Berlin. Steinitz.
- Lowenfeld, L.: Pathologie und Therapie der Neuraesthenie und Hysterie. Wiesbaden. Bergmann. Pp. 744.
- Moll, A.: Das nervose Weib. Berlin. Fontane. Pp. 226.
- Ots y Esquerdia, V.: La neuraesthenia. Madrid. Fussel. Pp. 363.
- Stewart, T. G.: Lectures on Giddiness and on Hysteria in the Male. London. Pentland. Pp. 89.
- Tourette, G.: Les 6tats neuraestheniques. Paris. Halliere. Pp. 92.
- Ziehen, T.: Neuraesthenie. Vienna. Urban. Pp. 77.
- NEURASTHENIA—HYSTERIA—EPILEPSY.
- Dubois, H.: Des atrophies musculaires d'origine hyst6rique. Paris. 1898. Pp. 77.
- Ballard: Commens meurent les 6pileptiques. Paris. Pp. 142.
- Martin, G.: 6tude sur la neuraesthenie a l'6tat mental des neuraestheniques. Paris. Pp. 111.
- Arden-Deltel, P.: Epilepsie law6e et equivalents 6pileptiques. L'6pilepsie psychique, ses rapports dans l'alienation mentale et la criminalit6. Bailliere. Pp. 275.
- HYPNOTISM.
- Bechterew, W. von: Suggestion und ihre soziale Bedeutung. Leipzig. Georgi. Pp. 84.
- Relfosse: Magnetismo e ipnotismo. Milan. Hoeppli. Pp. 377.
- Concannon, M. T.: L'hypnotisme en France. Paris. Lecoffre. Pp. 430.
- Desfosse, D. G.: Magn6tisme vital. Paris. Ed. Scientif. Pp. 383.
- Huter, C.: Die neueste Heilweisenschaft oder die psycho-physiologische Naturheilkunde. Detmold. Pp. 476.
- L6vy, P. E.: L'6ducation rationale de la volont6, son emploi th6rapeutique. Paris. Alcan. Pp. 234.
- Lipps, T.: Suggestion und Hypnose. Munich. Straub. Pp. 131.
- Meacham, L. J.: Lessons in Hypnotism. Pp. 159.
- Ricouf, F.: Contribution a la g6n6ralization du traitement moral de l'alienation mentale. Nancy. Pp. 130.
- Sid6s, B.: The Psychology of Suggestion. Appleton. Pp. 386.
- Verworn, M.: Die sogenannte Hypnose der Thiere. Fischer. Jena. Pp. 92.
- Wachtelborn, K.: Der Hypnotismus, seine Wesen und sein Wert. Leipzig. Friedrick.
- Ardigio, R.: L'unita della coscienza. Padua. Pp. 531.
- Berenger, A.: Considerations Psychologique sur l'agonie. Lynn. St6rck. Pp. 66.

Binet, A., et Henri, V.: La fatigue intellectuelle. Paris. Schleicher. Pp. 328.

TELEPATHY—MYSTICISM, ETC.

Adriani: Tel(opathie, suggestie en hallucinationes. Noordhoff.
Bois, J.: La Sanatisme et la magie. Paris. Chaillay.
Dupony, E.: Sciences occultes et physiologie psychique. Paris. Pp. 320.
Giacchi, O.: La psicotographie. Forli.
Pappa Iardo, A.: Spiritismo. Milan. Hoepli.
Robinson, W. E.: Spirit Slate-writing and Kindred Phenomena. N. Y. Munn & Co. Pp. 155.
Scotti, G.: Lo spiritismo e i nuovi studi psichii. Bergamo. Conti. Pp. 82.
Sorheld, G.: Spiritualisme et spiritisme. Paris. Tequi.
Chabaneix, P.: Le subconscient chez les artistes, les savants et les crivains. Paris. Bailliere. Pp. 126.
Kuhner, A.: Schlaf, Schlaflosigkeit, und Schlafmittel. Leipzig.
Schleich, C. L.: Schmerzlose Operationen. Third edition. Berlin-Pringer. Pp. 276.
Schofield, A. T.: The Unconscious Mind. London. Hodder. Pp. 436.

I am unprepared to give you even an outline of the genuine progress made in the sciences compassed by the bibliography just cited. I am inclined to single out, however, one seemingly unimportant thing from this great array of monographs for special comment. It is a book of one hundred and twenty pages² bearing the date 1899, and is a description of a psychopathic hospital in a German city, the newest and finest of them all. Many neurologists would find, perhaps, little in such a volume to interest them, but such as have had asylum experience, or are familiar with the needs of the insane, will hail its publication with enthusiasm, for it describes a method of provision for the insane and a scheme of laboratory investigation, a model psychiatric institution, which is destined to be imitated in many of our larger cities before many years have passed. I shall not dwell long upon the subject here, because I have quite recently published an address, delivered two weeks ago as the Annual Address to the American Medico-Psychological Association, in which the new era in psychiatry and psychiatric methods is discussed in detail. Suffice it to say then that this psychopathic hospital in the town of Giessen, which, modified to suit varying conditions and circumstances, is to be the model for similar foundations in all your American cities of 50,000 to 100,000 inhabitants, consists of ten or eleven cottages for some 116 patients. It is situated near the other university buildings. The central structure contains laboratories for pathologic, microscopic, chemical, photographic and psycho-physical work, besides a mechanical workshop, clinical auditorium, library and polyclinic or dispensary for out-of-door patients. The administrative offices and rooms for assistant physicians are also here. The cottages afford accommodations for each sex, and the patients are divided into private, quiet, restless, suicidal and disturbed classes in separate buildings.

There are many of these psychopathic hospitals in Germany. Indeed, only one university town is now without one. I saw them in successful operation even in my student days at Strassburg, Leipzig and Vienna. This at Giessen was first opened for patients in 1896, and deserves special mention and consideration because it embodies all that is best in this species of institution, the management having profited by the experience of all the others up to the date of its construction. The psychopathic hospital solves many problems, among them improved opportunities for collaborative study by scientific investigation in different branches of research, better facilities for clinical study, a greater diffusion of a knowledge of psychiatry among practitioners and students, and last, but not least, earlier and speedier treatment of the unfortunate patients.

The psychopathic hospital for the acutely insane lo-

cated in the midst of the city, following the precedent of general hospitals in this regard, is the ideal institution of the future for this particular class. The chronic insane on the other hand will be transferred to the country, always in the neighborhood of the city having the detention hospital, and will there be cared for in colonies, for the colony or village system has proved to be the ideal method of cure for the chronic insane. The colony will consist of a small hospital for the sick and injured, a small infirmary for the infirm, crippled, bed-ridden and disturbed cases, and a multitude of small cottages clustered about the centers of industry, where the majority of the patients will occupy themselves with agriculture and handiwork of all descriptions. This colony system or village community system is not new and I have myself seen several of them successfully conducted in other countries.

I will not occupy your time longer by entering into the minutiae of these two methods of state care of the insane, but I thought I would exercise the prerogative of chairman, in calling your attention to the psychopathic hospital and the colony as among "the improvements in methods of work" referred to in the By-Laws above quoted. A little seed disseminated in this way will take root somewhere, spring into existence, and some day bear fruit. Perhaps a few years hence some of you may describe to us here in this Section the model institutes for psychiatry you have builded in your cities and point out to us the great improvements you have made on old-world models.

Original Articles.

APPENDICITIS.*

ITS DIAGNOSIS AND TREATMENT: A REPORT OF ONE HUNDRED AND TWELVE CASES.

BY WILL J. MEANS, A.M., M.D.

Professor of Principles and Practice of Surgery, Ohio Medical University; Surgeon in Chief to Protestant Hospital, COLUMBUS, OHIO.

As a preface to my remarks, I wish to submit a report of 112 cases that came under my observation, 82 of which were treated by operation and 30 by medicinal measures. In submitting this report I have not attempted a detailed outline of each case, as there is a sameness in many of the cases that would make such an outline monotonous. I have, therefore, grouped similar ones.

Of the 82 cases operated on there were 2 fatalities. One of these was operated on the fifth day, and had diffuse suppurative peritonitis. The other patient was one of chronic appendicitis, and the cause of death was obscure. Immediately after the operation she began vomiting coffee-ground material, and continued to do so until her death, which occurred seventy-two hours later.

The ages of the patients, grouped in decades, were as follows:

Under 10	.....	10
10 to 20	.....	25
20 to 30	.....	28
30 to 40	.....	20
40 to 50	.....	19
50 upward	.....	10

Of the operated cases 30 were acute and 52 chronic or recurrent. In speaking of acute cases I refer to those giving no history of previous attacks. Of the 112 cases reported, 45 cases were females, and 67 males.

*Presented to the Section on Surgery and Anatomy, at the Fiftyth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June, 6-9, 1898.

² Die Psychiatrische Klinik zu Giessen. Published by S. Karzer, Berlin, 1896.

In 9 cases the operation was made within twenty-four hours after the attack. The appendix was ruptured in 5 of these, and coprolites found escaping through the opening. In the other 4 the appendix was inflamed, the mucosa showing pathologic changes, and the surrounding tissues more or less involved. In 17 cases operated within forty-eight hours of the attack, the appendix was gangrenous in 10. This was caused from one or more strictures occluding the canal, the presence of concretions, and the intensity of the inflammation due to the virulent matter coming in contact with peritoneal surface. The omental folds were more or less adherent and gangrenous. In 7 cases the lumen of the appendix was intact, but there was inflammation of the surrounding tissues with adhesions; and in 4 cases dilatation of the proximal ends; coprolites were found in 9 of this group. Twenty-three cases were operated within seventy-two hours. In 20 of these the appendix was gangrenous in some portion. Localized abscesses existed in 20. The remaining 3 were cases of catarrhal appendicitis with more or less inflammation of the surrounding tissues. In 25 cases the operation was made after the third day, and as late as three weeks. There were abscesses in 20 of these. One had diffuse suppurative peritonitis, and died from the operation, and 5 cases were catarrhal. The mucosa of the appendix was more or less diseased, but the lumen was unobstructed. The appendix was more or less gangrenous in all the cases where there was an abscess. In 9 the appendix was not removed. It was found imbedded in the granulation tissue forming the wall of the abscess. In 16 cases operated between the attacks, the appendix was obliterated in one. The tenderness and pain in this case were due to adhesions surrounding the cecum. There had evidently been an abscess in some former attack, and the contents had passed off through the bowel. Coprolites were found in 25 cases, foreign bodies in none, strictures in 19. Fecal fistula followed in 4. These closed spontaneously in the course of a few months. Hernia, so far as I have been able to ascertain, followed in 6 cases. In every instance this sequela followed in the cases where the abscess was adherent to the peritoneal wall. The appendix was found attached to the right ovary in 5 cases; to the right Fallopian tube in 7; to the uterus in 4; in one case to the gall-bladder; in 3 cases I found the appendix attached to the sac of irreducible inguinal hernias.

I have made eighty-four operations for appendicitis, and was mistaken in my diagnosis in two. One of these was a cholelithiasis; the gall-bladder was dragged down to the ileocecal fossa, and presented a tumor with the outlines of an appendicular abscess; thirty gall-stones were removed. The other case was a pyosalpinx, with the tumor extending into the iliac region. In this case, however, the appendix was attached to the tumor, and the distal extremity much inflamed.

Of the 30 cases treated medicinally, 8 died from septic peritonitis; 12 of the 22 who recovered had recurrent attacks; of the remaining 10 cases I am unable to give any history.

An operation was advised in quite a number of these cases, but, owing to the objection of friends and the attending physician, it was not made. In 5 cases of those that died I refused to operate, owing to the condition of the patients at the time I saw them.

It has been my observation rather than my experience, that where there is profound septicemia, complete paresis of the bowel, with a pulse-rate entirely out of proportion to the temperature, an operation is useless.

The percentage of deaths in the 82 cases operated is 2.4, the percentage in those treated medicinally is 26.6.

I have tried to summarize the lessons that I have learned from these cases. Several important facts bearing upon the pathologic conditions, diagnosis, and treatment of appendicitis have been settled in my mind. I am fully aware that other surgeons have had a much wider experience than mine; but the examination of their statistics does not develop any material points of difference from the conclusions that I have reached.

As it is not my purpose to consider the pathologic conditions in this paper, I will pass from this part of the summary and take up the matter of diagnosis.

Few diseases have a more uniform set of symptoms than appendicitis. There are, however, two types of cases; one having typical symptoms, and the other atypical symptoms. The typical symptoms of appendicitis, as we understand them, are: 1, the sudden onset of attack; 2, the character and location of the pain; 3, tenderness in the right ileocecal fossa, and muscular rigidity; 4, nausea, and perhaps vomiting, with more or less febrile action.

If these symptoms were all present in a given case, there could scarcely be any mistake in diagnosis; but unfortunately they are not all present at the same time. Any one or two of them may be absent, or being present, may be due to some other disease. For instance, the sudden attack is generally characteristic of abdominal trouble. Acute peritonitis, from whatever source, may give rise to the same symptoms.

Pain is also a variable symptom, both as to location and intensity. While pain in typical cases is usually near the umbilicus, radiating over the abdomen, it may be at other points. Its location depends largely upon the location of the appendix. If the appendix extends upward toward the gall-bladder, the pain may be very easily mistaken for cholecystitis. If the appendix be behind the ascending colon, the pain may be mistaken for renal colic. In this location the pain will sometimes extend to the testicle, the same as in renal colic. Again, the sympathetic nervous system often plays an important role as to the location of the pain. Physicians are all familiar with the pain in the right shoulder in cases of peritonitis. This reflex pain may be deceptive, but if the local conditions are carefully examined the deception is easily determined. There may be an entire absence of pain. While this fortunately is not the fact in many cases, yet it is one that must be recognized in making a diagnosis. Pain does not always indicate the pathologic conditions. It has not been very long since surgeons attempted to point out how the pathologic conditions could be determined by the character of the pain. Experience has taught us, however, that this is radically wrong. I shall speak more of this, however, under the head of treatment. We now understand that pain may be indicative of gangrene, or it may on the other hand, indicate resolution.

Tenderness and muscular rigidity in the right ileocecal fossa are nearly always pathognomonic of a diseased appendix. In the onset, tenderness may exist in a large area, but in a short time it becomes limited and confined to the ileocecal region. Tenderness always varies according to the location of the appendix. As suggested when speaking of the variableness of pain, tenderness may be absent; and when it is absent, it may be due to a gangrenous condition, or one of resolution. Rigidity of the muscles on the right side of the abdomen is an important symptom. With rigidity of the muscles on the right side of the abdomen, and its absence on the left, there

can be scarcely any doubt as to the location of the trouble. Constipation usually exists, although this is not properly a diagnostic symptom. Nausea and fever go to make up the picture that completes the diagnosis. Fever is a variable symptom. The temperature may be quite high during the first twenty-four hours, and then subside, remaining low, although important pathologic changes are taking place. Nausea and vomiting may be present in the first twenty-four hours, but usually subside after that.

Tumor as a secondary symptom is important. It existed in about 35 per cent. of the cases reported in this paper. A tumor is not always indicative of pus. In a number of cases I have found the swelling due to the enlargement of the glands of the mesentery and the infiltration of the tissues surrounding the cecum and appendix. In one case the cellular tissues beneath the peritoneum were swollen to the size of a small orange. Tympanitis is a constant symptom in acute cases, and one of considerable diagnostic value.

Another important factor that has been established beyond question, is that in males peritonitis has its origin almost exclusively in the appendix; while in females the Fallopian tubes, as well as the appendix, are important factors in the production of peritonitis. These points should be borne in mind in determining the source of peritonitis in any given case. It might be supposed, if this observation is true, that females, owing to their double exposure, would suffer more from peritonitis than males. Statistics show that this is probably true. It seems that males are more prone to appendicitis than females. I have recently noted some statistics where this statement is not borne out; but from my own experience, and that of many others, the ratio is about 60 per cent. male to 40 per cent. females.

Leucocytosis is a condition that takes place in the blood in all acute inflammatory diseases. It is, therefore, of value in determining the presence of pus in appendicitis. The leucocytes increase in proportion to the destructive changes taking place. This important blood-change may also furnish valuable points in differentiating from typhoid fever, floating kidney, fecal impaction, hepatic and renal colic. In general practice, however, I doubt very much if a blood examination, considering the technical skill required, would be of much value. I have not made blood examination a routine practice even in the hospital. In cases where there existed some doubt as to the presence of pus, examination of the blood was made, and in every case where a high degree of leucocytosis existed, an operation developed pus. All the cases examined were operated, and pus was found in them. The degree of leucocytosis, according to these cases, seems to be determined by the amount of destruction going on in the abdomen.

Evidence of the existence of the disease may be determined by skillful palpation. It is best made by Edebohl's method:

"The patient lies on his back with limbs flexed at the hips. Placing three or four fingers of the right hand flat on the abdomen, we feel for the margin of the right rectus muscle, in the line between the navel and the anterior superior spine of the ilium. The fingers are introduced with a light, steady pressure under the margin of the rectus until we feel distinctly the pulsation of the common iliac artery. The appendix is felt, as a rule, just outside the artery, its insertion about an inch distant, while its tip often crosses the artery. We move the fingers slowly outward as soon as we feel the

pulsation of the artery and note with care the condition of the posterior abdominal wall—that is, the iliopsoas muscle covered with the iliac fascia. This is the point of resistance against which we compress the appendix and which makes it possible to palpate it." When there is much tenderness and rigidity of the muscles, it will be almost impossible to feel the appendix; and again, if the appendix extends upward behind the colon, it cannot be discovered. However, with experience, a skillful manipulator will be able to determine the outlines of the appendix in a large percentage of cases.

The pulse and temperature considered together are important. A high temperature with a high pulse indicate simply an acute inflammatory process. When the pulse and temperature part company, serious pathologic changes have taken place. A low temperature with a high pulse indicates a toxemia that bodes ill to the patient.

There are other points in the differential diagnosis that might be mentioned. Renal colic is perhaps one of the most difficult cases from which to differentiate. We, however, should bear in mind that in appendicitis, while the pain is constant it is progressive in its intensity, and in renal colic while the pain is constant, the intensity is not increased. In renal colic, when the pain ceases, it ceases instantly; in appendicitis it ceases gradually.

Then again, in a limited number of cases where the appendix is behind the colon, the pain may extend to the testicle, the same as in renal colic. If other characteristic symptoms of appendicitis are present and the peculiar progressive character of the pain is recognized, it is possible to differentiate from renal colic.

In gall-stone colic there is nausea and vomiting, and they usually continue for several days; in fact, the gastric disturbance is characteristic of disease of the gall-bladder. The location of pain in gall-stone colic is in the epigastrium, and it radiates toward the shoulder and scapula. The seat of tenderness is also usually over the gall-bladder, while in appendicitis it is over McBurney's point.

In the female there may be some difficulty in differentiating between appendicitis and salpingitis. In the early stage the differentiation can be made much more readily than later when pus has formed. The main points of difference are the acuteness of the attack in appendicitis, and its tendency to recurrence. The pain in appendicitis is more acute, and the location of the tenderness is different. A vaginal examination will reveal the seat of tenderness to be in the right pelvis; while in appendicitis the pelvic organs will not be tender. Chloroform narcosis may be necessary to complete a satisfactory examination.

The controversy that has been waged during the last decade as to whether appendicitis should be classed as a medical disease, a mixed disease, or a surgical disease, has been decided largely in favor of the surgeons. Some of our medical brethren still hold that appendicitis is both a medical and surgical disease, coming within the purview of the surgeon when the physician has failed to cure. I maintain that it is the consensus of opinion of the profession to-day that appendicitis is essentially a surgical disease, and should be treated from that standpoint. If there is any doubt as to the correctness of this view, a consideration of its pathology, and the entire absence of any remedial measures that will remove the pathologic conditions and bring about resolution, should be enough to definitely settle the question. There are certain remedies that may be prescribed to an advantage.

It is necessary when the pain is excruciating to resort to measures to relieve it. It may be necessary to relieve the bowels of impacted fecal matter, and to increase the action of the kidneys. Beyond this I have no confidence in medicinal measures. Remedies that simply give the patient a measure of relief without looking to an ultimate cure should not be relied upon other than for emergencies. The question settled that in surgery alone lies the hope of permanent cure in cases of appendicitis, the next question is to consider the time to operate.

Some of the leading surgeons of to-day have set forth the dictum that the patient should be operated upon as soon as the diagnosis has been made. With proper qualifications, I believe this to be the correct position. These qualifications are much the same as those that obtain in other surgical diseases. The same difference of opinion exists with reference to the amputation of an injured limb while the patient is in shock. There is no difference of opinion as to the necessity of the operation, but there is a question as to the most opportune time. This matter has largely resolved itself into one of judgment on the part of the surgeon; in other words, it is not a matter of prescribed rules, but one of surgical acumen. When a diagnosis of appendicitis has been made, the judgment of the surgeon should govern the time at which the operation should be performed. When I make the qualification that the judgment of the surgeon should point out to him the most opportune time for the operation, I mean that conditions that cannot be specified nor described by fixed rules may exist. It is my conviction, and it has grown stronger with more extended experience, that the earlier the operation the better for the patient. If the diagnosis is made within twenty-four hours of the attack, and the environments are such that the operation could be made, I believe there should be no delay. It is my rule at the present time to operate upon all cases as soon as I have made the diagnosis, if the condition of the patient is favorable, and his environments are such as to justify a surgical operation. I recognize no time limit.

It is unnecessary to describe the environments that might cause a postponement of an operation. These are obvious to every one who is familiar with modern surgery. There may be complications in the case that should be removed or corrected before operating. The conditions unfavorable to an immediate operation are not well defined. Rules elaborated a few years ago for our guidance are useless to-day. Some good surgeons advise, when the patient is seen after the third day, that operation should be postponed until after the attack, or until purulent formations, if such exist, have been walled off, and the patient is practically rid of general sepsis. I have operated after the third day, and during the attack, without any fatal results. My experience does not coincide, therefore, with this rule. During the last two years, I have not delayed operation longer than was necessary to give the patient advantage of the best possible surroundings.

General septic peritonitis might be considered a cause for delay, and, perhaps, for no operation at all. One of my fatal cases was of this type. I do not believe in last-resort operations. While they are sometimes successful, they are more often fatal. I have seen some desperate cases get well, but they were of the fibrinopurpurative type. The suppurative peritonitis is a more virulent condition, and the prognosis more grave.

There is a question as to the feasibility of operating

between the attacks of recurrent appendicitis. We are often confronted with the proposition that an operation will be submitted to after the existing attack has subsided. In the interim, if the patient is fortunate enough to recover, gratuitous advice both from neighbors and physician to wait until another attack, with the hope that it may not come, prevails, and there is another delay, jeopardizing the life of the patient. I can see no reason for treating these cases differently from those in a first attack.

Again, I do not believe the time for operation depends altogether upon the pathologic conditions we find in the patient at the time of our first visit. Some surgeons endeavor to divide the cases into classes, and to divide the time limitation for operation by the pathologic conditions found in each of these cases. When we consider that it is impossible to determine by examination the true pathologic conditions, these rules become ridiculous and unsatisfactory.

In a number of cases that I have operated on within twenty-four hours of the onset, I have found the appendix ruptured, and coprolites in the viscera, and a gangrenous condition of the surrounding tissues. Again, I have found in a large number of cases where the acute symptoms of the first twenty-four hours had subsided, with a temperature of 100 and a pulse corresponding, that an abscess had already formed. With this uncertainty as to the pathologic conditions, I cannot see the necessity, or the good judgment, of postponing an operation. Conservative surgeons (so-called) and physicians will tell us that a certain number of these cases will get well without an operation. They do not, however, tell us how many get entirely well. It is a matter of statistics that about 80 per cent. recover from the first attack. Of these we have no statistics to definitely determine the number in which the attacks are recurrent. Nor have we statistics that throw much light upon the complete recovery of the remainder. Because 80 per cent. of these cases get over the first attack is no reason why early operations should not be made. When statistics show a mortality of less than 5 per cent., with recoveries that are permanent in a large majority of the cases, there can be scarcely any question as to the feasibility of operating early. It seems to me in the light of experience and modern success, that the question of when to operate should be entirely one of surgical acumen, governed by the conditions of environment and complications.

Surgeons have exercised their ingenuity in devising methods of operating, and have established certain principles in the technic that make it an easy matter for those of less experience to select a safe and reliable method. The primary purpose is the obliteration of the appendix. The preparation of the field of operation is a matter of detail differing in no way from other abdominal operations.

The location of the incision is largely one of choice with the operator. It is my experience that no fixed rule can be followed. In some cases the incision should be made obliquely from without inward, well down toward Poupart's ligament; in others, along the outer border of the rectus muscle. It depends upon the location of the appendix and the diseased portion.

The length of the incision, while an important factor, depends upon the character of the trouble. An incision not exceeding one inch in length is sufficient for a large number of cases; but there are cases where it is necessary to make it four or five inches long. In abscess cases where the abscess wall is not adherent to the parie-

tal peritoneum, the incision should be of sufficient length to permit free access to the parts, and for packing with gauze to prevent the pus from permeating into other parts of the abdominal cavity.

The disposition of the appendix is a matter of some importance, but this depends largely upon the condition of the organ. In catarrhal appendicitis where the lumen of the organ is not constricted, it can be invaginated and carried within the bowel. The meso-appendix is ligated in several places, and cut close to the organ. With a probe or fine mouse-toothed forceps the extremity of the appendix is inverted, and pushed through the lumen into the bowel until the organ is disposed of. Three or four Lembert sutures are sufficient to close the opening. The question of the ultimate disposition of the appendix is not very well settled, but it is safe to presume that it will cause no trouble.

The next method, that of excision, is accomplished in various ways. The meso-appendix is tied off in sections, and if there are adhesions, they are broken up. The appendix and the cecum should be brought up through the incision, and gauze packed around them. The peritoneal coating is cut through about one-half inch from the cecum and stripped to the base. The appendix is then excised, and the stump inverted into the bowel. The peritoneal cuff is then inverted, and the opening closed with Lembert sutures. This is, perhaps, the simplest and safest method for ordinary cases. I have used the clamp and cautery method suggested by Dr. Eastman, but can express no particular preference for it. Where the base of the appendix is gangrenous, the surgeon must exercise his ingenuity in disposing of the opening into the cecum with a view of preventing a fecal fistula. This has occurred in four of my cases.

In cases where there is a deep-seated localized abscess, a free incision should be made. The abdominal cavity should be carefully protected with gauze, the appendix excised, and the abscess and necrotic tissues removed. In these cases I make it a rule, after carefully cleansing the cavity, to place a glass drainage-tube, which usually remains about forty-eight hours. When the abscess has approached the anterior wall of the abdomen, and becomes agglutinated, it is opened and drained. I make no effort to remove the appendix in such cases. The surgeon must of necessity have sufficient experience to comprehend the various conditions that may arise in each given case, and meet them accordingly.

In nine of the cases reported I did not complete the operation. While I believe in making a complete operation, yet in this class of cases I doubt very much the expediency of doing more than draining the abscess.

Closing the incision in clean cases is a procedure that differs in no way from that of other abdominal wounds, and therefore needs no special mention.

CONCLUSIONS.

1. An early diagnosis of appendicitis is desirable and possible if the few cardinal symptoms are understood, such as pain near the umbilicus, tenderness in the ilio-cecal region, tympanites, and rigidity of the muscles in the lower right quadrant of abdomen.

2. Too much significance should not be placed upon the presence or absence of pain, and high temperature. Both may be absent, while grave pathologic conditions are going on. They may also be present to a high degree without determining the pathologic status.

3. Appendicitis is a surgical disease, and should be treated from a surgical standpoint.

4. From the nature and location of the disease there

are no known remedies given internally or applied externally that can remove the trouble.

5. The pathologic conditions of a diseased appendix cannot be definitely determined by external examination, or from the existing symptoms.

6. Early operations give the best results.

7. The time for operation is when a diagnosis has been made, providing the environments of the patient are favorable, and there are no complications precluding the same.

8. The technic of the operation is governed largely by the taste of the operator and the pathologic conditions.

APPENDICITIS.*

ITS CAUSES, PREVENTION AND TREATMENT.

BY WILLIAM M. HARSHA, M.D.

Professor of Operative and Clinical Surgery, College of Physicians and Surgeons (University of Illinois Medical School).

CHICAGO.

Appendicitis is well characterized by Professor Osler as "the most important of acute intestinal disorders;" and it may be said further to bear a somewhat similar relation to active digestive disturbances that pneumonia does to acute bronchial affections.

The question most frequently asked by the people relates to the cause of the disease, the problem that most vexes the physician and surgeon is one of treatment, while the great frequency and fatality make its consideration of interest to us all. Among the etiologic factors is considered age—being essentially a disease of the young. The study of 157 cases occurring in some of the Chicago hospitals during the past year shows an average age of 26 years, the oldest in this number being 62, the youngest 1½ years. As showing the rarity of cases in extremes of life, but one of these cases was found under 7, and but three over 50 years. The writer has successfully operated on two patients, aged respectively 4½ and 5½ years for the past two years. The list referred to shows the influence of sex to correspond very nearly with Hawkins' tables—of 159 cases 93 were males, 66 females. The greater frequency in males is no doubt due to their greater exposure to injury, fatigue, colds and overindulgence in eating and drinking. The seasons affect materially the frequency of attacks—the greater number occurring during the summer months—more than half the cases under study occurring during the six months, June to November, or during the time when intestinal disorders most prevail. In the list considered the greatest number occurred in August; the fewest in the months of October and December.

While the disease is an infection, the infective agent is not uniform and the mechanical causation or excitement of the inflammation is believed to be the greater factor. Fecal concretions are found in nearly half of all the cases, sometimes bearing a nucleus of some hard, foreign body, such as a piece of bone, grape seed or bird shot; and showing evidence in their structure of their formation *in situ*. These concretions, by prolonged contact with the degenerate structure of the mucosa, make an atrium for infection or occlude the lumen and imprison secretions, bringing about distension and stasis followed by infection. The small size of the organ and its dependent position make congestive stenosis easy. Like the contracted cervix uteri or Fallopian tube, it may be patent most of the time; but congestion from dietetic errors or from sudden chilling of the surface, or

*Presented to the Section on Surgery and Anatomy, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1896.

injury by fecal masses or otherwise, may suddenly occlude its lumen and directly appendicular colic results. If this stenosis is not relieved promptly the next infective and inflammatory stage soon follows.

The most frequent exciting cause, and especially in recurring cases, is believed to be errors of diet. Constipation, which is generally accompanied by a full cecum, may induce this condition of congestion and irritation at the outlet of the appendix which causes stenosis, or by extension may sooner or later involve the entire organ. Robin¹ believes a distinct form of gastric and intestinal indigestion, with what he terms coprostrasis, is responsible for most cases, and that treating this condition by castor-oil and enemata will prevent attacks. Typhoid fever, especially, and other debilitating conditions predispose to attacks. Osler cites a case where bird shot were found in the appendix. Bernays found calomel and bismuth forming nuclei of fecal concretions. From the dependent position of the appendix and the tendency of heavy substances to gravitate into the organ we may consider appendicitis—like hernia and hemorrhoids, but in less degree—a penalty imposed on man for getting on end. Traumatism and severe exertion are frequent exciting causes, as are also chilling of the surface determining the blood to the viscera.

Viewing the etiology in this light, prevention seems possible many times, although hardly demonstrable. These means of prevention apply to other conditions and have the advantage of uniform safety. The disease is so frequent and dangerous, however, that its consideration alone should lend the commonest rules of health new dignity. These are moderation at the table, careful regulation of the bowels and care in diet, prompt attention to digestive disturbances and care to avoid the ills of physical overexertion and taking colds. As Robin advises, treatment should be directed to those dyspeptic conditions attended with distension, catarrhal gastric intestinal affections or colonic torpidity. Castor-oil or salines are favorites with most physicians, and perhaps when more used in our forefathers' time prevented many attacks. Colonic flushing in fecal retention is of great value. If we shall accept the view that gastric or intestinal disturbances are possible harbingers of appendicitis, as we regard acute bronchial affections in their relation to pneumonia, we shall by timely treatment ward off many attacks. In the matter of treatment there is yet a great variety of opinion. In view of the large number of cases that recover from first attacks, and remain well, under prompt rational medical treatment, surgeons can not in my view properly recommend operation in all cases, although early operation in proper cases has lowered the mortality.

The study of eighty cases of the list referred to shows a mortality of about 10 per cent. Of cases operated on up to the fourth day all but one recovered, and that was operated on the second day. As hospital reports represent cases of more than average severity—many of the light ones being left at home—we can safely expect a much lower mortality under surgical supervision of all cases, and early operations in proper ones. If people are advised to call a physician promptly for diagnosis in cases of sore throat they should likewise be instructed to attend to stomach and intestinal disorders, as many times attacks may be warded off, or aborted after actual occurrence. In ten cases observed by the writer during the months of April and May, last past, six were distinctly attributed to, and preceded by, digestive derangements,

usually two to four days elapsing between the onset of intestinal and gastric disorders and the characteristic symptoms of appendicitis.

The treatment in these cases was in general, evacuants, salines, calomel, enemata, rest in recumbency, hot (antiseptic) fomentations. If seen at the onset, this treatment is tried for thirty-six hours; except in fulminant cases, which would be operated on at once, codein is used, if urgent, to allay pain. In four of the ten cases so treated from onset, three recovered without operation. In cases seen later, operation is advised if tumor is present or temperature or accelerated pulse continues. In the dietetic and supporting treatment where liquid diet is indicated, as it is in operative or inoperative cases, as well as in many other debilitating conditions, I have used Reed & Carnick's beef peptonoids and trophinin, and Parke, Davis & Co.'s beef jelly, with the greatest satisfaction, as many patients can not take milk. In one other case of the four mentioned operation was advised at the end of thirty-six hours, but the patient began to improve then, and recovery proceeded without operation. Two of the ten cases were recurrent and were operated on in the quiescent stage. All recurrent cases should be operated on between attacks or at onset of attack. Six of the ten were operated on, and the appendix removed in all but two, in which there were abscesses. All recovered, if we may count the two last operated on, which are practically well at this writing.

Where cathartics could not be retained I have used hypodermically, a tablet consisting of physostigmin sulph., 1-50 grain, and magnesium sulph., 1.84 grain. In twelve trials catharsis was produced in four to seven hours in five cases. The strength of the magnesium solution should not be greater than 2 per cent.

103 State Street.

DISCUSSION ON APPENDICITIS.*

DR. KEEN, Philadelphia—I am more radical than my friend, Dr. Deaver. He, if I understand him rightly, considers that general suppurative peritonitis is a contraindication of operation. This view I cannot accede to. The very fact that a patient has a general purulent peritonitis as the result of an appendicitis or from any other cause, means to me, instant and thorough operation, for the very reason that if you let such a patient alone he is absolutely sure to die. That the majority of those who are attacked with a suppurative peritonitis will die, operation or no operation, is certainly true—a large majority of them—but every one rescued is one rescued from the grave. That these cases are not without hope, I am absolutely certain, both from my reading and from my experience, for I could recount a half dozen cases in my own practice in which life has certainly been saved after a general infectious peritonitis—not saved simply by an ordinary operation for appendicitis, but by an incision on both sides, which will allow thorough flushing of the entire abdominal cavity.

Of the other paper, I wish to say a few words. Dr. Morris excuses his attack by alleging a *mens conscia recti*. I am reminded of two rival shoe stores on opposite sides of the same street, one of which placed on the sign: "*Mens Conscia Recti*." The other, not to be outdone, put on his: "*Men's and Women's Conscia Recti*."

The notice that Dr. Morris stated that he had sent to each one of the persons attacked, by some delay of the U. S. mail never reached me, and my first knowledge of it came by a verbal statement two or three days ago from a friend, notifying me that I was to be attacked. But we must remember that only a year has elapsed since the Denver meeting. He is right in saying that at the last meeting of this Section I challenged any one in the room who believed he could do a hundred abdominal sections on well patients even, and not have 2 per cent. mortality, and not a man or woman in the room

* This discussion covers a series of six papers, the other four having appeared in the JOURNAL as follows: "Best Methods in Treatment of Appendicitis," by Robt. T. Morris, July 15; "Appendicitis," by A. J. Ochsner, and "Appendical Pus," by John B. Deaver, July 22; "The Processus Vermiformis," by G. G. Eitel, July 29.

¹ International Clinics, Phila., 38, 8, 104.

responded to that challenge; not one took it up. I am perfectly well aware that several of the best surgeons can show less than 2 per cent. mortality. But, remember, we are debating here to-day not a rule for surgeons like Deaver, McBurney and Morris, but we are debating this question from the point of view of a general rule for the general practitioner—and do you mean to tell me that the doctor at a country cross-roads, in a village, the man who does a surgical operation, once, twice, it may possibly be ten times a year, who, in many cases is not familiar with modern methods of cleansing the hands, of cleansing the skin, of taking the antiseptic precautions known to you and me, is to follow a general rule that we are to lay down for such a practitioner that he is to operate indiscriminately, and then state that he will not have a mortality of 2 per cent! I protest against it! It is not true! I believe in operation. I believe the rule should be operation, but the rule is proved by many an exception, and that which is a rule for the city surgeon who is operating every day is not the rule for the country surgeon who operates only once in a while.

THE CHAIRMAN—I ask Dr. Murphy of Chicago down to the stand.

DR. J. B. MURPHY, Chicago—It is very difficult to decide just what to say on this colossal subject in six minutes. From Dr. Keen's last statement—if I interpret him properly—I understand that he believes the cases should be operated on if they were in competent hands. Is that correct?

DR. KEEN—Certainly.

DR. MURPHY—Do you believe that *all* cases should be operated on in competent hands?

DR. KEEN—No.

DR. MURPHY—Do you believe all cases in the first twenty-four hours—if seen in twenty-four hours and if a competent surgeon is at hand—should be operated on?

DR. KEEN—With exceptions, yes; not all.

DR. MURPHY—May I ask the exceptions?

DR. KEEN—Certainly. There is an immense difference in the gravity of the cases. A severe case seen in the first twenty-four hours, in the hands of any reasonably competent surgeon, should undoubtedly be operated on at once. A mild case is a very different thing, and many of these should not be operated on in the first twenty-four hours, and sometimes not at all.

DR. MURPHY—Another question. What is a mild case in the first twenty-four hours?

DR. BEVAN—I object to the cross-questioning of the witness. I direct to this method of conducting questions.

CHAIRMAN—The Doctor is in order.

DR. MURPHY—If anyone has a better spirit or a better feeling for Dr. Keen's great surgical skill than I have, I would like to see him. I love him for the work he has done. I am up here for the sole purpose of trying to arrive at some conclusion, at some line of action, at some position whereby all other great surgeons of America can say: "There is a line, and we will try and follow it"—something to guide us in this darkness, something to prevent the death and devastation that every year comes on from appendicitis—that is why I ask Dr. Keen these questions. I think you feel that (indicating Dr. Keen).

DR. KEEN—Certainly, and I quite agree with Dr. Murphy that this is a serious matter, that all want to arrive at the truth. I am just as anxious as Dr. Murphy and I quite reciprocate his kind expressions of feeling toward me, as to his own work in appendicitis. Will you kindly repeat the question?

DR. MURPHY—The question was: "What would you call a mild case in the first day of appendicitis? What would be considered a mild case?"

DR. KEEN—I have seen, and do not doubt that every one in this room has seen, cases in which even the diagnosis was itself doubtful, in which there was slight tenderness, little or no fever; it may be even by the end of the first twenty-four hours that these symptoms are subsiding, and I submit that in every such case it is not proper in all cases to operate in the first twenty-four hours.

DR. MURPHY—Thank you. With that as a basis for discussion, I can say that I might safely agree with Dr. Keen. But, gentlemen, how rarely do we find these very mild cases that remain mild cases for another twenty-four hours? No, sir. Who is the man who can say: "I feel from the course that this case is taking in the first twenty-four hours, that in the next twenty-four hours it is going to take a similar favorable course?" No one. The more frequently I operate, the more confident I am that I cannot tell from the symptoms what the course of a case of appendicitis is going to be for twenty-four hours. As I am unable to tell this, I feel it is my duty to do

what? What I feel I can do in the first twenty-four hours—remove from that patient, with comparatively little danger, his appendix, which may become a source of great danger to him within forty-eight hours from the onset of the symptoms. It is my practice, and I am becoming more firm in it every day, and I am urging it more forcibly on the doctors who kindly transfer their surgical cases to me, that their cases should be operated on within the first twenty-four hours and that all of them should be operated on within the first forty-eight hours. A case was referred to me by Dr. _____ of Chicago; I was called early in the night. In the morning it would be twenty-four hours. In the morning the patient's temperature was normal and the pulse was, as I recollect it, 86. That patient appeared in a very nice condition for recovery. I said: "This case should be operated on." What did I find? A completely gangrenous appendix, black as rubber, distended and filled with necrotic debris.

THE CHAIRMAN—I wish to say that the discussion took a rather unusual turn and I think the position the Doctor took was entirely proper. The only reason I had for having it in this way was that I do not believe that Dr. Murphy would do anything that would be out of the way, and I have known Dr. Keen for a great many years, and he is abundantly able to take care of himself. Dr. Keen will now come on the platform and have his say.

DR. KEEN—Inasmuch as I have been catechised, it is only fair that I should have a word. Now, I believe that if Dr. Murphy and I were alongside of each other at one hundred cases, we should come to just about the same conclusions. I think he would be, perhaps, a little less radical than he talks, and I would be a little more radical than I talk. I have heard my friend Deaver, for instance, and you have heard him, talk very radically, but when he gets at the bedside, as I know of him in Philadelphia, he does not always do exactly as he says. It is very difficult to lay down a rule for a case of appendicitis. It is impossible. There are certain acute attacks in which you cannot operate too quickly. There are other cases so mild that Dr. Murphy would hesitate or refuse, I am sure. There are also intermediate cases, and, therefore, though I answered categorically in the cross-examination which my able lawyer friend put me through in the beginning, "Yes," "No," the answers were not quite precisely true. There are modifying circumstances in every case. There are modifying circumstances that will lead the most radical man to hesitate, and others that will lead the most conservative instantly to push ahead.

THE CHAIRMAN—Gentlemen, the discussion is now open for you.

DR. LEWIS, Kansas City—If I should not hear another paper read, I feel amply repaid for the time and travel from my home to Columbus. This is the class of cases which, surprising as it may seem, we meet every week, and to know just what to do, when to do it and how to do it are indeed the questions. During the last three or four weeks I have seen three cases, so interesting and so much to the point that it brings me back to the proposition of: Should I or should I not? The conjuring of conditions which have developed in the right inguinal region during the last fifteen years has been marvelous. During the last few days or weeks I operated upon a case of appendicitis and what did I find? I found a large gall-stone as big as the end of my thumb in a patient of 64 years of age—nothing but a mild attack of appendicitis. In the practice of an intelligent and experienced physician, I was called some six weeks ago, two-hundred miles in the Indian Territory in consultation with several of our best surgeons to see a patient. The trouble was in the same region, and on an exploratory incision we found the ileum passed through the omentum, eighteen inches in length, where the rupture of the omentum had occurred, and it was strangulated; only thirty-six hours had elapsed since the symptoms; there were twenty-five necrotic points in the bowels which were perforated. The extensive inflammation and softening precluded the removal of this amount of bowel, and of course we lost this chance. This occurred in a stenographer.

When Dr. Keen made his statement of 2 per cent. mortality, I asked him the question: What is the mortality from the present method of his standpoint of treating the disease of appendicitis. We all know that it is more than 2 per cent. in the hands of the best men. Dr. Harshbarger, in his excellent paper, stated the most danger, and what I believe to be the most dangerous cases—the most dangerous cases—that many cases recovered without operation. That is an argument absolutely unanswerable. We are to blame for that argument. I remember saying on that occasion something that I cannot more forcibly say now; when the time comes that we can calculate our pathologic symptoms and determine in the begin-

ning that this case is going to be a dangerous or a mild one, the time has come for limiting our views and treating every case in a conservative way by the new—the eclectic—method. That time has not come; we must treat those cases from what we know; the mortality is great, but very slight if the cases are operated on. I believe that very soon cases, regardless of their character, operated on in the first twenty-four hours will show an infinitely less mortality than we have to-day. At the Denver meeting I remember Dr. Keen's challenging anybody who said that he could get a less mortality than 2 per cent. in a hundred consecutive cases. My natural modesty permitted me to rise at that time and state that I had at that time one hundred and eighteen cases of consecutive operations of appendicitis in the interval, without a death. Since that time the number has risen to one hundred and thirty-seven; that, however, does not prove. I believe that there are mild cases in which the judgment, observation and careful watching of the surgeon will permit him to carry the case through without an operation, and then he can operate, if he desires to protect his patient from future attacks. Many a time I have been called by competent physicians to operate, and have refused. I have been called in three consecutive cases, and yet I refused to operate and these cases recovered. As near as we can glean from statistics, between 85 and 90 per cent. recover, if they are operated on; but we do not know which case is a dangerous one and which is not a dangerous one.

DR. JOHNSON, Hartford—When I came in this afternoon and looked over the program and saw that there were eight articles on appendicitis, I came to the conclusion that the surgeons had gotten at an attack of literary appendicitis, from which, I think, there will be about 100 per cent. of recoveries. As my name was referred to this afternoon, I wish to state, that at the meeting of the AMERICAN MEDICAL ASSOCIATION at Atlanta, I reported one hundred consecutive cases of appendicitis, with two deaths. I want further to state that in all my operations up to date, in which I have operated before the suppurative process had commenced, I have not lost a single case, and those in that class now number a great many more than a single hundred.

DR. WAGNER, Chicago—I do not want to speak of my own favorable results, but I would like to say a few words with regard to the severity or non-severity of the attack in the beginning of appendicitis. In one case, a boy, seen one afternoon, had a temperature of 99, fever, pain in abdomen; normal next morning, temperature 102 with fever that very same day; he was operated on at 9 p. m. with perforation of the appendix and pus. The boy got well. Another case was that of a boy, who had pain in the abdomen, which passed off in a few moments; I saw the boy at noon; the mother told me that he had had pains before; I operated at 10 o'clock at night. I found a perforated appendix with foul-smelling pus. The boy walked up to the operating-table. I doubted whether I should operate on him. In the case of a girl of 17 years, who fell on the floor in the morning, the doctor came in the afternoon; she was suffering with a pain; the next day I saw her with the doctor; at 3 p. m. operated on her. There was pus, with a great big lump of omentum and a stone beneath the kidney; the stone had existed for a long time. In regard to the further question of how to decide whether to operate or not, you never know what the condition is until you operate on the case. I want to say a few words in regard to dealing with pus cases. I do not think that the operation is concluded after you have emptied the abscess. I believe you have in every case to resort to finding the appendix. I do not believe that appendectomy is completed when you have removed the appendix and discharge of pus. In a number of cases that I have shown to the hospital my method has been to break up all the adhesions and have the intestines freed from each other.

DR. D. W. GRAHAM, Chicago.—I was glad to hear the discussion and all the papers. I believe that the most experienced surgeons disregard all rules of other surgeons in the presence of individual cases of appendicitis. That is the conclusion I have arrived at. It is my method, and when in the presence of a case, I do not want anybody else's rules and experience—I want my own. I believe that every surgeon here is governed by his own experience. There is something in the face of the patient, something in the pulse, the general aspect of the case, that helps the surgeon to decide, regardless of any rule that can be put into practice. Dr. Keen, I think, struck the keynote to the whole situation when he said that some cases are so mild that Dr. Murphy would refuse to operate, and other cases can not be operated on too soon. Speeches are easily made and words are universally washed off in a meeting. I want to say, without being personal, that Dr. Murphy sometimes does not operate; he says, "I think that case is better without operation." Is that not so, Dr. Murphy?

DR. MURPHY—What was the condition? I will ask the Doctor to name the case.

DR. GRAHAM—It was a case of appendicitis, which, in my judgment, should have been operated on. Everything was ready; Dr. Murphy was called in consultation; he said, "No." I acquiesced. I had to.

DR. MURPHY—I recall the case and the consultation—except the particulars of the patients sometimes—and I think I agreed with the doctor's diagnosis.

DR. GRAHAM—That is right.

DR. MURPHY—And I think this was four or five years ago, and I think that was the position I took at the time, but I am happy to say that I have changed!

DR. GRAHAM—This was three years ago. I heard Dr. Murphy preach the same way.

DR. PLACE, Philadelphia—It is true that our first object must be to save life and we should be conservative. We must remember this: as long as the abdominal wall remains opaque and not transparent, we cannot see what goes on, and we should lean toward operation, except the case be very clear. I think with that we can have something to think about.

DR. PORTER—I wish to go on record as opposed to the statement that no case of purulent appendicitis gets well. I wish to go on record as believing truly that there are cases of general purulent affection of the peritoneum that, with timely opening and drainage, coupled with incision, relieving the tympany and letting out the intestinal contents will get well, and I believe such cases are on record, and the burden of proof rests upon the man who denies the proposition.

DR. OCHSNER, Chicago—I have nothing to say in closing, as regards my own paper, but I wish to take just one moment to speak on a part of another's paper—the very matter just spoken about. Now, I have seen a great many cases of general peritonitis. There was a time when I operated on these cases, and at that time whenever the cases proved to be general peritonitis the patient died. I have assisted in a considerable number of these operations and whenever they were operated upon the patient died. Others have succeeded in saving some of those patients, I am aware, according to the literature. I have not been so fortunate, but for the last four years I have followed another form of treatment in these cases in which general peritonitis was present, in which the condition was present that in former times I concluded to be general peritonitis, and cases in which precisely the same symptoms were present, and cases which were formerly proven to be general peritonitis. I have followed this form of treatment: I have entirely stopped the feeding of the patient; washed out the stomach to stop the vomiting; feeding the patient entirely by enema, and I have saved many of these patients. Now, I can prove that these cases had general peritonitis, because I have seen them later on for the relief of adhesions and from general adhesions; consequently I can prove that these patients had general peritonitis. I have the history of these cases.

DR. JOHN B. DEEVER, Philadelphia—I believe the cases of general purulent peritonitis believed to be cured by operators are in the majority of instances, circumscribed peritonitis and localized abscess. In early years I operated upon cases like those under discussion, but with universally fatal results. I have seen cases of what I believed to be general peritonitis recover without operation. It is my practice to treat these cases by packing the abdomen with ice, rectal alimentation absolutely, fly blisters over the epigastrium and hypodermic of strychnia. I do not for one instant think it possible to clean every nook and corner of the peritoneal cavity, therefore I do not believe that operation in the presence of universal inflammation of the peritoneum from infectious pus will accomplish a cure.

In answer to Dr. Keen, who states that Dr. Deaver does not always operate when called to the bedside of a patient, I beg to state that he is quite correct. In many instances where I refuse to operate, had I been called early enough I would. I am still of the opinion that better results will follow the removal of the appendix immediately after the initial appendiceal pain than at any other time.

Until the good Lord makes the belly walls transparent it will be impossible to do other than guess as to the progress the appendiceal inflammation is making. In the greater majority of instances the diagnosis of appendicitis is not a difficult one to make. There are cases of appendicitis, as of all other forms of disease, where the diagnosis is not only difficult but at times impossible to make.

On general principles I do not approve of breaking up adhesions between coils of bowel in the presence of infection and searching for the appendix. As to the removal of the appendix in cases of appendiceal abscess, I would go on record as advis-

ing against the procedure, the operator not being an expert in this line of work. With all due respect, I believe there are few of the many men operating for appendicitis who are capable of dealing successfully with the different cases. I know of no operation which is more difficult than some of the appendiceal cases. In the majority of instances the appendix can be taken out with safety by the expert, but not by the occasional operator or the general doctor, who operates but seldom. If time permitted I should like to refer to the varieties of abscess met with in appendicitis.

DR. MEANS, Columbus—The matter has been discussed so thoroughly and carefully that I feel it would be unwise to take your time further in discussing the points at issue. I think that there has been a general agreement upon the point I made in my paper that there should be no time-limit. My position was that I recognized no time-limit in operating upon appendicitis; that when the diagnosis was made I operated, provided that the environments of the patient were such that I could, and I believe that point has been considered.

THE DEATH-DEALING LONG-TUBE NURSING-BOTTLE.*

BY ERNEST WENDE, M.D.

BUFFALO.

It is not my intention to enter into a controversy on infantile mortality from diarrheal diseases, its deplorable rate, and the causes which are responsible for it. These latter have been carefully studied, and are, briefly: bad air, summer heat, ignorance of simple hygiene, and especially artificial feeding.

To the correction of all these possible factors have been directed the efforts of municipal authorities, the medical profession, societies, philanthropists and others. Tenement-house construction has been corrected and regulated by ordinance, the evils of the heated term mitigated by fresh-air missions, free ice and the like, maternal ignorance enlightened by educational circulars, and finally, sanitary protection has been given to milk from dairy to nursery, as has been extended to no other industry, and this largely, if not almost entirely, with the interest of infantile feeding in mind.

With regard to diet, the child should live on food provided for it—milk—the only food which contains all the principles essential to life and growth. The infant structures grow by selecting with unerring accuracy, from the blood, the materials akin to their own composition. For the first six months the child should draw his supplies exclusively from the maternal fountains. When, however, the full and finely-chiselled bust of napkins or towels, the mammary gland of the mother of today, is insufficient for the performance of its functions, we must have recourse to lacteal glands less esthetic and beautiful—those of the cow, goat, or ass—in preference to the wonderful feeding stuffs now so largely advertised in the daily and the medical journals. "An honest farmer who pastures his own cows on a healthy farm is the man to be employed to furnish milk to the poor little baby who has to seek another dairy than his mother's. And if the milk is not sweet, fresh, and pure, pathologic changes will be developed, thereby rendering the gastrointestinal tract more susceptible to irritants, and the production of cholera infantum results—when the baby gets beyond hygiene and enters the domain of medicine.

While all these causes of diarrheal disease in infancy have, as stated, been carefully studied and their influence minimized, and while also the so-called long-tube nursing-bottle has been condemned, the extent of its evil possibilities, from its intrinsic construction, has been in part elaborated.

It is almost needless to state that an infant previously enjoying an environment of continual warmth and moisture, entirely devoid of infection, that was aseptically and insensibly nourished by osmosis should not have a hose several inches in length, remarkably efficacious for the propagation and the passage of pathogenic micro-organisms, placed in direct communication with its very susceptible, excitable and over-sensitive stomach. Facility of access is the only recommendation attaching to such a plan, but this is altogether outweighed by the terrible risk necessarily involved. Decidedly its only use and adaptability to lessen the danger of infection is its employment for the flushing of the lower bowel of the child.

The object of this paper is to briefly give the perilous and untrustworthy features of the so-called long-tube nursing-bottle, and to show justification for not only interdicting it, but doing so by law. Something definite should be aimed at and done to protect and save the helpless offspring of the ignorant and indifferent. The myriads of little ones it has already slaughtered should be sufficient to inspire us to enact elaborate laws, to be administered with the greatest care and strictness, in order to prevent parents and those in charge of infants from committing a variety of acts inconsistent with duty, judgment and common sense—for there is more virtue in the power of law than in circulars of instruction or education.

The chain of protection sought to be placed against these most prolific sources of cholera infantum is no stronger than its weakest link, and this weak link has been the apparently innocent but death-dealing long-tube nursing-bottle. No factor has been more deadly, none so subtle as this device. Conceived in the interest of labor and time saving, appealing to the poor and overworked housewife, it has invaded the home under false pretense as has no other appliance, but has left in its trail a record of mortality. Its dangerous possibilities, now well known, have caused the physician to taboo it for some time, yet its convenience has been so great, and its innocence so reasonable, that its apparent merits have, in only too many instances, been considered above the warnings against it. So certain is its malignant bearing on the artificially fed infant that its manufacture, sale and use should be prohibited by law, and, recognizing this fact, it has been so interdicted by the Buffalo Department of Health.

The peculiar features of danger from its employment may be summarily stated, that owing to its construction and material, and to the use to which it is put, probably no better incubator of pernicious micro-organisms and their toxins could be easily designed, as none have proven so successful. To the details, which render this statement plausible, your attention is asked, as well as to the experimental work which has been done in absolutely demonstrating, step by step, the vicious results created by the utilization of this contrivance, and how and why it is vicious; why it should, in all communities, be condemned and prohibited. Its popularity and foothold have been so strong that it also has had a commercial significance, and its abolition in Buffalo has not been without remonstrance and even the cloud of possible litigation. With the elimination of this, the greatest source of artificial infant-food contamination in the household, with a judicious observance of sanitary care of milk in homes, as supplementary to official surveillance of possible and preventable causes, it is not visionary to expect a reduction in death-rates in proportion as efforts based on our present knowledge can be made effective.

*Presented to the Section on Diseases of Children, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

As milk is an almost universal food for bacteria, its reception in a rubber tube, acquired from a coagulum that is normally cavernous and unstable, invariably presenting surfaces that are rugose and unpolished, rendering asepsis an impossibility, must necessarily augment the conditions favorable for the growth and development of micro-organisms, and finally convert it into a nursery which produces conditions favorable to cholera infantum.

To establish, beyond peradventure, the danger of these tubular thoroughfares for the introduction of pathogenic microbes into the infantile economy, and the justification of suppressing them by legislation, I, as a health official, resorted to a series of investigations, microscopically, bacteriologically and chemically. The microscopic examinations of transverse sections, cut from unemployed rubber tubes taken from nursing-bottles procured at the various drug stores of our city, revealed the fact that they were manufactured out of rubber sheeting cemented together at their longitudinal margins to complete the tubes, and the seams thus formed were found unfaithfully imperfect in their construction, showing, throughout their entire length, elongated pits and sinuses, which, in their functions, can only be likened to our modern bacteriologic "breed ovens." In some instances, this state of affairs was further intensified in that the tubes were constructed of more than one layer, between which such enormous spaces were frequently developed, directly connected with the lumen of the tube by the numerous pits and sinuses referred to, as to more or less involve their entire circumference. Moreover, the sections likewise demonstrate that the material used in the manufacture of this tubing is exceedingly porous, and that the pores vary amazingly in size and shape. Again, pockets were often seen communicating with the inner surface of the tube, while, in several specimens, distinct channels were visible connecting similar pits or pockets with cavities in the substances of the rubber. It would, indeed, be difficult to imagine a more efficient arrangement for the propagation of germs.

By reflected light, under the microscope, the inner surfaces exhibit a view apparently made up of roughened and scraggy elevations and depressions with many openings and clefts, extending deeply into the texture. All the features of the imperfect seams, by this means, are easily discernible and can be readily traced and studied throughout their entire length. Therefore, it is obvious that any foreign material, gaining entrance to this perilous combination of pits, sinuses and porosities, cannot be removed by any of the ordinary methods of cleansing, however vigilant and faithful be the mother or nurse. Yes, it is extremely doubtful whether bacteria, when once lodged in these incubators, can be displaced or even destroyed by any known germicide or chemical.

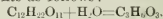
From the bacteriologic examination of an infected rubber tubing, we were able to recognize a deposit of decomposing material coating the inner surface, being the thickest in those portions of the lumen in close proximity to the nipple and glass tubing. This debris was found, on further investigation, to consist of coagulated casein, with innumerable bacteria of varied morphology. The qualitative bacterial examination of the material demonstrated the bacillus acidi lactici to be the predominating organism. The staphylococcus pyogenes aureus and oidium albicans, with three other distinct species, two of which belonged to the non-chromogenic bacilli, the third being a chromogenic micrococcus, were present, and in addition several species not yet completely isolated.

Five decigrams of this grumous conglomeration, dissolved in 2 c.c. of sterile water and injected intraperitoneally into each of three full-grown guinea-pigs, weighing respectively 200, 254 and 261 grams, produced death of the animals in from forty-eight to sixty-one hours.

Segments of the infected rubber tubing were placed in small vials, and kept in an incubator at a temperature of 98.5 F., for twenty-one days, after the lapse of which time the specimens thus prepared were either in part softened or completely disintegrated, while, on the other hand, like pieces of the infected tubing, soaked for a few moments in a 5 per cent. solution of carbolic acid and subjected to the same temperature, were not similarly affected. The inference drawn from this experiment verifies the fact that the prolonged effect of decomposed milk on rubber will mash, mangle and disintegrate it.

In further unraveling the chain of morbid sequences, it was found, on a chemical analysis and investigation, that this process of decomposition and divulsion was due to the fermentation of the lactose of milk remaining in the tube.

An intimate part of the tubular mass consisted of zinc oxid as a filling which, in the cheaper grades, was considerable in amount. This component substance, under the influence of the bacillus acidi lactici, and probably some other bacteria, supplied one of the conditions favorable for the continuous production of lactic acid, while the other condition was the presence of stale milk in the lumen of the tube. At the ordinary temperature, these micro-organisms decompose the lactose, giving an interchange of elements as follows:



However, a certain degree of acidity puts a stop to the growth of the bacteria and to the production of acid, but if the acid is neutralized, as formed by zinc oxid, as in this case, the decomposition is a continuous one. The casein was also more or less decomposed, which gave rise to bad-smelling products that remained in solution or else passed off in the form of gases. The presence of the zinc lactate, thus formed, which was soft and hygroscopic, coupled with the other soluble casein products, rendered the rubber doughy, indicating further injury dependent on micro-organisms.

In conclusion, I must insist that there are most rational grounds for believing that this mechanical invention, the long-tube nursing bottle, should be considered as a premeditated plan for the poisoning and killing of infants, demanding special treatment by law.

DISCUSSION.

DR. F. P. NORRBY, Jacksonville, Ill.—The ordinary nipple is open to many of the objections which are applicable to the long tube. In the average nipple that is molded, after being used for some time there will be a crease running the whole length of the nipple—on a line at which the two halves are united. This is to be seen by turning the nipple wrong side out. This becomes an excellent nidus for bacteria. I have seen, in consultation, several cases of poisoning resulting directly from the use of such nipples.

DR. A. C. CORROX, Chicago—I would like to ask Dr. Wende whether he has made any microscopic examinations of the nipples as well as of the tubes.

DR. ERNEST WENDE—The nipples are subject to the same objections as the tubes. However, they can be inverted and, thus, are more easily cleansed. It is customary to recommend that two nipples be employed, same to be kept in a solution of bicarbonate of soda, and used alternately. It may be too early to speak concerning the wisdom of this ordinance, yet the death-rate in the city of Buffalo was diminished just one-half, as compared with the year previous to the enactment of the said ordinance. Our statistics are based on the number of those who died from cholera infantum, for they demonstrate that the majority of deaths occurred among those who use the long feeding-tube.

SUMMER DIARRHEA OF INFANTS.

ITS ETIOLOGY AND TREATMENT.

BY H. M. McCLANAHAN, A.M., M.D.

PROFESSOR OF DISEASES OF CHILDREN, OMAHA MEDICAL COLLEGE.
OMAHA, NEB.

While the summer diarrheas of infants vary much in their clinical manifestation and in the pathologic lesions, they are all similar in their etiology and treatment. It is, therefore, of these phases of the subject that I wish to direct attention.

ETIOLOGY.

The etiological factors are predisposing and exciting, the former are age, environment, season, character and method of feeding, and previous condition of health. Nearly all cases occur during the first two years of life. During this period the child has feeble resisting power; its digestive organs are readily prone to functional disturbances. Its nervous system has feeble inhibitory power, and the irritation that in the adult would have no effect, in the infant produces profound impressions.

The influence of environment is particularly noted in large cities where, owing to the lack of fresh air and sunshine there is induced a feebleness of constitution that increases the susceptibility of the child to morbid influences.

The method of feeding and the quality of the food is a nearly constant predisposing cause. Statistics show that about 97 per cent. of all cases occur in bottle-fed babies.

The predisposing element is undoubtedly the quality of the food, in most cases lacking in elements to symmetrically nourish the child, and, by producing an enfeebled condition, make it more vulnerable to the exciting cause. Rickets is a conspicuous example.

Again, the food may be difficult of digestion, as when it contains an excess of albuminoids. In these cases, the digestive organs are taxed beyond their capacity and a state of chronic irritation produced. It can be safely affirmed that the majority of cases of summer diarrheas are preceded by some form of indigestion due to the method of feeding. The season is so important that these diseases were formerly looked upon as thermic fevers. We now know that they are not directly induced by heat.

Modern bacteriology has taught us the true influence of heat in inducing these disease. We should not, however, lose sight of the fact that extreme heat is debilitating, that its enervating influence lessens the resisting power, that the profuse perspiration creates a thirst which leads the child to ingest excessive quantities of food, overloading the digestive organs, and impairing their functional activity. The previous condition of the health of a child is perhaps more important in influencing our prognosis than in causing summer diarrheas.

The child whose constitution is enfeebled by sickness, either acute or chronic, is not only more susceptible to these diseases, but is less able to withstand the invasion. All the conditions I have mentioned exert, either singly or together, an influence in predisposing the child to summer diarrheas but none or all together, in the true sense of the term, cause these conditions.

Summer diarrheas is an infectious disease, just as certainly and upon the same evidence as typhoid fever, with the distinction, however, that it is not due to one specific germ. The method of invasion is nearly always by the food through the gastro-intestinal tract. The poison originates in the milk, through the agency of bacterial growth.

I quote from Professor Vaughan of Ann Arbor¹:

"The child taking its nourishment directly from the breast of the healthy mother obtains its milk practically germ-free, while the one taking cow's milk receives along with this food many kinds of bacteria, some of which are very harmful. These diseases are confined to the summer months because the germs which elaborate poisons in milk require a relatively high temperature for their growth. During the hot months of summer these bacteria are widely distributed, and easily find their way into milk. They grow rapidly and produce chemical poisons. Furthermore, decomposing matter harbors and supports these bacteria at a time when the outdoor temperature is high enough to allow their growth."

The intestinal tract of healthy children contains bacteria. The two varieties constantly found are bacillus lactis aerogenes, and bacillus coli communis. As to the part played by these bacteria in normal digestion, but little is positively known.

In all forms of diarrheas these obligatory milk-feces bacteria are greatly increased in number, and are more widely distributed throughout the alimentary tract.

According to Booker's investigation, in mild types of summer diarrheas these varieties predominate almost to the exclusion of all others. Owing to their increased number they develop acids in the intestinal tract—lactic, acetic and butyric. These acids irritate the mucous membrane and are probably the direct cause of the diarrheas. More important, however, is the fact that by reason of the irritation of the mucous membrane from the increased number of these bacteria, it is made more vulnerable to the influence of virulent pathogenic germs. In the more serious types of diarrheas, however, other bacteria are present, among the most common being the proteus vulgaris.

In many of these serious cases, as post-mortem examinations demonstrate, the actual damage is the result of bacterial growth, since no lesion of the intestinal wall is discovered and no penetration of the body tissues by bacteria can be demonstrated. In this class of cases the symptoms are certainly to be attributed to the absorption of toxins. In cases where the micrococci are present there are usually found distinct inflammatory changes in the intestinal mucous membrane. It is most generally the staphylococci that are found. These bacteria may find an entrance into the subjacent tissues, and thence may be distributed throughout the body. When these cases do not terminate fatally in the acute stage, they are likely to drag along for weeks and even months. "It is the consensus of opinion among investigators that no one specific kind but many different kinds of bacteria are concerned in the causation of summer diarrheas."² Indeed, as many as forty different varieties have been detected.

A further important fact is this: chemical poisons, the result of bacterial growth, may be developed in the milk before it is taken into the stomach and these poisons may induce very serious symptoms in a short time after the milk is ingested. Professor Vaughan reports a case where symptoms of cholera infantum developed within two hours after taking the milk.

There is certainly good reason for believing that true cholera infantum is caused by toxins developed outside the body. It is important to remember that the stomach of the infant has feeble digesting power than that of the adult; that the albuminoids of milk are but slightly changed in the stomach, but pass into the bowel almost

¹ Edwards' Supplement to Keating's Cyclopaedia, p. 8.
² Keating's Cyclopaedia, Vol. iii, p. 190. Intestinal Bacteria in Children—Booker.

unaltered, hence, poisons in the milk are not likely to be destroyed or inhibited by the gastric ferments.

TREATMENT.

The first and most important principle of treatment is to stop milk and all other kinds of food. This direction should be made mandatory, because people, in mistaken kindness, will insist upon giving the child some nourishment. The reasons for this are that milk affords a pabulum for development and growth of bacteria, and therefore tends directly to increase and continue the difficulty. Furthermore, digestion is greatly impaired and the child receives little nourishment from the food. The next object is to unload the intestinal tract as completely as possible. This is done to remove the supply of poison, lessen the absorption of toxins, and prevent irritation of the mucous membrane by the contact of decomposing material. The means to this end are mechanical and medicinal.

The mechanical means are lavage of the stomach and irrigation of the bowels. In those cases where there is marked gastric irritation, lavage is an excellent mode of treatment, not only because it empties the stomach, but for the reason that it prevents vomiting. While some writers say this is entirely free from danger, yet if a serious result had ever occurred such a statement is incorrect. One fatal case has been reported from introducing the catheter into the larynx. To avoid this accident, the index finger should be used as a tongue depressor, when the catheter can be carried over the base of the tongue, and against the posterior wall of the pharynx, and thence on down the esophagus. In this way all danger can be avoided.

Irrigation of the bowels reaches directly only the large intestine, and in order to accomplish this purpose, it is necessary that large quantities of water be used, at least from half a gallon to a gallon. As the object is to flush out the colon the operation is to be continued until the water returns free from fecal matter. While irrigation is going on the abdomen should be gently rubbed. This stimulates peristaltic action of the entire intestinal tract, and favors elimination.

To unload the small intestine, drugs are necessary. Calomel is the best remedy, given in doses of from 1-10 to $\frac{1}{2}$ grain, repeated hourly until the typical spinach discharges are produced. In many cases this may be followed to advantage with castor-oil. In a majority of cases seen early, this treatment will arrest the disease.

When the disease is so arrested the next important point is in regard to the diet, because it should be remembered that these cases may easily suffer a relapse from renewed infection. It is often better to withhold milk for some days and use other varieties of food.

It is in this connection that certain proprietary articles are of service. Among these articles I would mention bovine, Fairchild's panopepton, and liquid peptonoids. Mutton broth is an excellent article of diet, and may be the sole food for several days. It should be carefully prepared and all fat removed. In children over a year of age farinaceous infusion may be employed. The following, taken from Jacobi³, answers a good purpose: 5 oz. barley water, the white of one egg, from one to two teaspoonfuls of brandy or whisky, some salt and sugar. Small quantities of this may be given every few minutes.

When a milk diet is resumed, it should be thoroughly sterilized and properly diluted. In infants under a year of age, I prefer the milk and cream mixture. The formula which I usually employ is as follows:

R. Cream	3iii
Milk	5ii
Sugar of milk	5i
Water	5x
Mix and sterilize.	

To each three or four ounces of this, when ready for feeding, one to two drams of lime water should be added. In preparing this the sugar should be dissolved in water and the cream and milk added.

This formula can easily be modified to suit individual cases. Cases that do not yield to the treatment already indicated, and this includes those that have persisted for a few days before medical advice is sought, require further attention.

Where the alvine discharges continue fetid, remedies directed to the disinfection of the alimentary tract are indicated. A remedy that has given me the best satisfaction is eudoxin. This may be given in doses of from $\frac{1}{8}$ to $\frac{1}{2}$ gr., in powder, combined with sugar of milk.

Where the discharges are acid in character, as indicated by the erythema about the buttocks, this remedy may be combined with an alkali; as subnitrate of bismuth or prepared chalk. In these cases also the bowels may be irrigated twice each day with a warm saline solution. Where there is much tympanitis, it is of benefit to add to the water bicarbonate of soda one dram to the pint.

Where the diarrhea persists the question of the use of astringents suggests itself. My own belief is that it is better to use some remedy to check the action of the bowels, because frequent movements interfere with the rest and comfort of the patient. I have never been able to see any benefit from the vegetable astringents, even in those cases where they are retained by the stomach. Of the preparations of opium I prefer either paregoric or Dover's powders. These allay irritation, arrest peristalsis, and give needed rest. A safe rule is to direct that the prescribed dose be given after each movement, thus as they become less frequent, less of the drug is given.

Where there is marked prostration, supportive measures are indicated. Alcoholic stimulants, externally and internally, are to be employed. Children bear stimulants well. Whisky is the better, as it is less likely to be adulterated than wines or brandies. For external use, equal parts of alcohol and hot water are better than alcohol alone. Where the heart is evidently weak, digitalis is an excellent remedy. I prefer the fluid extract, owing to the smallness of the dose, of which one drop may be given every two or three hours in water.

There are a certain number of cases that persist in spite of treatment. This class includes those cases where there is a true inflammatory lesion in the bowel, with a general sepsis. The discharges consist largely of mucus, epithelium, and blood. The treatment already indicated is appropriate to these cases, but often unavailing. Small doses of silver nitrate are sometimes of benefit. Sulphocarbolate of zinc is another remedy worthy of trial.

Whatever the reason may be, the fact remains that change of location is the most valuable treatment possible. I remember a case that I treated with indifferent success for five weeks and then suggested a change. The mother took the child to Spirit Lake, Iowa, and in one week, without any other general change in treatment, the child was restored to health. In another case seen by me in consultation a year ago, the disease had persisted for four weeks. The child was extremely emaciated and anorexia was complete. This patient was sent to Wyoming, where it made a complete recovery.

³ Therapeutics of Infancy and Childhood, p. 225.

CHOLERA INFANTUM.

A few thoughts upon the subject of the treatment of the acute form of this disease. After irrigation of the bowel it is of benefit to use the following: 20 gr. of tannic acid dissolved in one pint of boiled water. This is injected into the bowel and retained by pressure against the buttocks. The acid probably coagulates any albuminoids that may remain in the bowel, and prevents their absorption. This treatment, which was suggested by Professor Vaughan, I have frequently employed, with decided benefit.

As the watery discharges rapidly produce collapse, it is good treatment to arrest the action of the bowels, after they have been irrigated. For this purpose I employ the method suggested by Holt, namely, the hypodermic injection of morphin sulphate, gr. 1-100, with atropia sulphate, gr. 1-800. This will frequently arrest the action of the bowel for some hours, but should not be repeated within twelve hours.

Thirst is usually intense, but the stomach is so irritable that fluids are generally rejected. All kinds of foods should be strictly withheld. The most agreeable drink is ice-cold sterilized water containing one drop of dilute nitric acid to each half ounce.

For collapse there is nothing equal to the subcutaneous infusion of normal salt solution. The only apparatus necessary is a hypodermic needle and fountain syringe. This supplies the system with water in a manner so that it can not be rejected. When the extremities are cold the hot sheet pack is indicated. Mustard may be added to the water in which the sheet is dipped, with advantage.

Nervous symptoms are probably due to either fever, the absorption of toxins, or both, and when prominent, generally indicate a fatal termination. The ice-cap to the head can safely be employed. A solution of bromid of potassium and chloral hydrate may be given per rectum.

Coal tar drugs are seldom to be employed.

1312 N. 40th Street.

SURGICAL TREATMENT OF ACUTE PERITONITIS.*

BY A. F. HOUSE, M.D.

Surgeon to St. Clair Hospital; Consulting Surgeon to the German Hospital.
CLEVELAND, OHIO.

In presenting my paper on the surgical treatment of acute peritonitis I have not thought it necessary to review my experimental work, or to report all my cases operated upon. Neither is it possible in a short paper to enter into a discussion of the anatomy, etiology, pathology and the various clinical phases found in this formidable disease, because inflammation of this membrane may have so many different causes and assume such varied clinical aspects that it is difficult to formulate a uniform and satisfactory classification. Suffice it to say that, anatomically and physiologically considered, the peritoneal cavity may be said to be a large lymph-sac, and noted for its capacity of absorption. This capacity is not surprising when we take into consideration that in its parietal and visceral foldings, it presents nearly as large a surface as the entire integumentary covering of the body.

Idiopathic peritonitis is considered doubtful by most modern pathologists, and it has become an established

practice to search for a local cause in all cases of peritonitis. I believe in every instance, micro-organisms from some source or other have gained access to the peritoneal cavity. Wounds of the peritoneum heal with remarkable rapidity if the surfaces are kept in uninterrupted contact; in a few hours, adhesion takes place between the united parts by means of plastic material and is termed "plastic peritonitis." This is purely a regenerative process and should not be classed with the inflammatory affections.

Of the various structures of the body, the peritoneum, without question, is one of the most susceptible to septic influences, and it has become an established fact that different portions of the peritoneum present different degrees of vulnerability to sepsis. The most sensitive region is that over the small intestines. The parietal peritoneum is much less susceptible to infection. When peritonitis is developed away from the small intestinal area, it is apt to be localized. This is shown by the course of peritonitis in the iliac fossa, in the subphrenic region and in the pelvis.

Septic and suppurative peritonitis are, etiologically, identical; however, clinically they differ in that acute septic peritonitis is generally diffuse and leads to a rapidly fatal termination, while both forms are caused by a pus organism. Suppurative peritonitis is more generally local or circumscribed and more often amenable to surgical treatment. It is quite likely that the most common form of peritonitis is that caused by infection from some portion of the alimentary canal, as in appendicitis or acute obstructions and the various forms of ulceration of the bowels. The organism generally found in these cases is the bacillus coli communis. Still there are certain other infections which pursue quite as fulminating a course as those from the alimentary tract, such as for instance results from faulty technique, in which a virulent germ is introduced by instruments, sponges or fingers. We also know that the reproductive organs are often the cause of a virulent peritonitis, as in certain forms of metritis or salpingitis. It may be well also to mention here certain forms of inflammation of the liver and gall-bladder and the rupture of abscesses of various parts of the body as producing peritonitis. The micro-organism usually found in these cases is the streptococcus. In rare instances, perhaps, some of the milder pus cocci seem to have an unusual virulence. I believe, barring faulty asepsis, that peritonitis caused by infection from the intestine is the most rapid in its progress and the most fatal in its results. Whether the colon bacillus in its growth is an effect rather than a cause, I am unable to say. Its constant presence in all cases of peritonitis of intestinal origin justifies the opinion that it has at least a great influence as a causative factor. The symptoms of acute peritonitis when operative interference is advisable and not without hope may be grouped as follows:

1. Pain of varying degree; either local and becoming general, or general becoming local, according to cause. This pain is very frequently referred to the region of the umbilicus, even when the seat of infection is remote from that point.

2. Tenderness, general becoming local, or local becoming general, as a result of pain. Marked rigidity of the abdominal muscles is present, and in many instances this rigidity is more marked over the portion of the peritoneal cavity in which the infection commenced. The importance of early rigidity is a symptom of the utmost value, and my experience leads me to fear that its aid in

*Presented to the Section on Surgery and Anatomy, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

making an early diagnosis is not sufficiently recognized by many practitioners.

3. Vomiting, usually of a green ropy substance. It may be exceptionally absent, but when present is a symptom of a rapidly developing and severe infection.

4. Shock, varying in degree, is usually present in cases of acute perforation or gangrene, before paralysis of the intestine from septic absorption has occurred.

5. From two to twelve hours after infection the abdomen becomes more or less distended, this distension not only being due to a transudation of fluids but also to the accumulation of gases within the intestinal canal as a result of paralysis and arrest of the normal functions of the intestinal tract. To wait for distension in the diagnosis of general peritonitis, is in the larger proportion of cases, to postpone operation until too late. A rise in pulse and temperature is exceptionally absent. More frequently the pulse runs from 100 to 160, is thready and weak, the temperature varying from 99 to 105 or even higher within twelve hours of the first symptoms of invasion. Peristalsis is diminished.

The symptoms in fully developed peritonitis in which the wisdom of an operation is questionable, I have grouped as follows: Pain, lessened or absent. Tenderness general. Distension marked, replacing the rigidity. Incessant vomiting of green or stercoraceous material, obstinate constipation, peristaltic movements not heard, a rapid and feeble pulse, temperature may be high or low, more or less lividity of the abdominal skin; the extremities cold and the mind clear, and the body bathed in perspiration; one step more and our patient is moribund.

The treatment of peritonitis resolves itself into both medical and surgical, and while it is the purpose of this paper to treat the subject from a surgical standpoint yet a few words in reference to what the surgeon should do and what he should not do in the way of medical treatment is pertinent to my subject. The diet should consist of concentrated liquid nourishment, such as milk and the animal broths, with stimulants as indicated. When nausea and vomiting interfere with the stomach feeding, which is so frequently the case, high rectal enema may be tried, and if this fails submammmary infusion of warm water or the physiologic saline solution will frequently relieve the intense thirst which is at times so distressing.

The therapeutic indications in acute general peritonitis have not up to this time been fully settled. While opium and cathartics have been used largely in the treatment of this formidable disease, yet both fail to accomplish the desired result. The advantage claimed for the use of opium is the relief from pain and the state of rest it gives the inflamed intestinal surfaces. This theory, however, is an erroneous one. The fact is the chief danger in this disease is dependent not upon the local inflammation but upon the absorption of the products. The method of intestinal drainage, first devised by Lawson Tait, has found a general acceptance throughout the world. The free and early use of saline cathartics not only carries out these products through the intestinal canal but relieves distension, promotes absorption of the peritoneal exudates and assists in eliminating the toxins. On the other hand the use of opium not only increases intestinal distension by the impairment of its muscular wall but also hinders the absorption of exudates and the elimination of the various toxins. To condemn the use of opium in perforation peritonitis would be folly. Cathartics in this class of cases are positively contraindicated, as an extravasation

of liquid feces would likely be increased in such a case and an infection which had, up to that point, been local, might become general. Opium in these cases not only prevents peristalsis, but relieves pain and diminishes shock.

In general peritonitis, especially the septic variety, strychnin, camphor and alcoholic stimulants should be employed early and at short intervals. Should the stomach refuse to tolerate the above mentioned drugs they should be given hypodermically or per rectum. Calomel in small doses in the early stages sometimes diminishes the nausea and vomiting.

In discussing the surgical treatment of general peritonitis is it not good logic to assume that septic inflammation of the peritoneal sac is amenable to the same general laws that govern septic infection of other tissues? The indications for interference are much more difficult to determine than methods. While, perhaps, most cases of general peritoneal infection prove fatal, yet many cases are recorded where free incision and thorough irrigation and drainage have been followed by recovery. In a classical address by N. Senn, before the International Medical Congress at Moscow, in August, 1897, he says: "I have opened, drained and washed out the peritoneal cavity in many cases of diffuse septic peritonitis and I am free to confess, without a single successful result. Yet there can be no difference of opinion in reference to the advisability of early operative treatment in the management of general diffuse septic peritonitis. Without operation death is certain." Koerte⁶ believes that most of the brilliant statistics of cure of acute general peritonitis by operations are false. Frederick Trevis³ says there can be no doubt that all forms of peritonitis are septic and due to micro-organisms, and that there is no such thing as idiopathic peritonitis, and we have made great advances in the treatment of localized peritonitis but we have made but little progress in the treatment of diffuse peritonitis. Halstead of Johns Hopkins regards general peritonitis an exceptionally fatal disease. Mikulicz reports 3 recoveries in 14 cases, Koerte 6 recoveries in 19 cases. E. H. Grandin⁴, in a discussion on septic peritonitis, says that his studies have enabled him to be more hopeful in the prognosis of general suppurative peritonitis than was formerly the case. He gives a record of 40 cases of local and general suppurative peritonitis. These cases do not include instances when pus was low in the pelvic cavity and accessible by the vaginal route. Thirty-one of these cases were local suppurative peritonitis and a general suppurative peritonitis. Of the 31 cases, all recovered after incision and drainage. Out of the 9 cases of general suppurative peritonitis only one recovered. In this case multiple incisions were made, and copious flushings were practiced with saline solution, drainage was through the incisions by means of strips of gauze, and antistreptococcus serum was injected a number of times at stated intervals. After the administration of the serum the temperature invariably fell, the pulse-rate became less, and the production of pus was greatly limited. Dr. Grandin is not certain that the serum brought about a cure in this case, but thinks it quite probable and advises its use in all cases.

A paper by Robert Abbe, upon "The Prognosis and Treatment of Acute General Peritonitis," says that the grave form of acute general peritonitis is almost invariably due to the rupture of a hollow viscus—stomach, intestine, appendix or bladder. Its origin is certainly bacterial, and septic infection overwhelms the patient and is unconfined by any barrier of lymph. The virulence

of the attack varies with the nature of the material introduced. Material from the appendix is more virulent than material from the stomach and bladder. In grave cases a long median incision or two lateral ones are required. He believes that gauze packing is far better for drainage than glass tubes or rubber; that in widespread infection systematic irrigation with normal saline solution must be used, and if the intestines are distended with gas and fluid to prick them in one or two places with a knife and allow the escape of gas and feces and wash away with a stream of hot water. Through one of these openings introduce a syringeful of saturated solution of epsom salts and close the puncture.

I am fully satisfied from personal observations that a fatal issue in many of these infectious cases is due to prolonged medication, and the surgical remedy is consequently postponed until its chances of success are gone. If the abdominal cavity could be opened at the very beginning of general infection the results would be much more encouraging than they are at the present time. To sustain that which we have asserted, let us take for instance perforation of the abdominal wall with injury of its internal viscera, sudden intestinal extravasations, twists, invagination, strangulation or rupture abscess. While it is true that with some of these lesions a general infection is coincident, and in others it may appear in a few days, yet in both classes an early operation is necessary to be successful. In all acute abdominal lesions of an obscure character we are justified in making an exploratory incision.

It is not within the scope of this paper to go into all the minute details as to the locality and size of the incision or the different methods of drainage and irrigation. Suffice it to say that the incision should be made in the median line below the umbilicus, unless the primary lesion should indicate otherwise.

For simple evacuation of fluids and drainage a short incision is usually all that is required, but when the condition depends upon mechanical obstruction or paresis of the intestine, and irrigation of the peritoneal cavity is to be used, an incision at least long enough to admit the free introduction of the hand is indispensable.

Perfect drainage of the peritoneal cavity in all cases is practically impossible and especially so when the intestines are greatly distended. The material generally used is either gauze, rubber or glass. I prefer gauze wicks or glass tubes filled with strips of gauze and wrapped with the same material. Many times, in order to make drainage as perfect as possible, it is necessary to insert gauze or drainage-tube in other than the primary incision, as in one or both loins or through the lumbar region. The Mikulicz tampon or drain, first used by the one whose name it bears, has proved of inestimable value in many cases of abdominal operations.

Irrigation, like many other surgical procedures, has been freely argued pro and con. The objection that irrigation only spreads the infection holds good only in localized peritonitis where there might be danger of breaking or tearing up the adhesions. Practically it is impossible to thoroughly disinfect the peritoneal cavity, yet it is far better to have imperfect disinfection than none. Solutions of various kinds are used; those containing strong antiseptic or germicidal properties are conducive to more harm than good. Sterilized water, boric acid, Theirsch solution, acetate of aluminum and normal saline solutions may be used without fear of toxic effect. Personally I prefer the physiologic saline solution with 1-2000 or 1-3000 formalin. Whichever one of these solutions one prefers should be used at a temper-

ature of at least 105 to 115 F., as in all cases where irrigation is deemed advisable, a solution of this temperature stimulates the heart and thereby assists in relieving shock. The stream should be sufficiently large, with force enough to reach the remote parts of the peritoneal cavity. I prefer using the Kelley irrigation tube introduced into the bottom of the peritoneal cavity. The propriety of breaking up adhesions for the purpose of making irrigation more perfect is questionable, and I believe should not be done except in non-suppurative cases. The method of mopping fluids or pus from the peritoneal cavity by gauze or sea sponges is not to be advised. It is far better to turn the patient upon the side and allow the fluid to run out, after which a more thorough cleansing can be done by gauze. Death in peritonitis is more frequently caused by rapid intoxication than by inflammation. In all cases of fulminating peritonitis, inflammation of the visceral peritoneum of the intestine leads to paralysis of the muscular coat and rapid distension. To relieve this, surgical intervention has of late been advised by N. Senn, McCosh, Knowsly, Thornton, and many others, by incision or puncture of the intestine. The methods of Senn and McCosh seem to be the most practical. Senn places his patient upon the side, brings the most distended part of the intestine well forward into the wound and then makes a transverse incision of about an inch opposite the mesenteric attachment, then grasps the bowel as far as possible above and below the incision, elevates the intestine on either side of the incision in its wall and in this wise empties out its contents, after which he thoroughly cleanses the exposed intestinal surface with normal saline solution. The incision is closed with the usual Lembert sutures and the bowel returned.

McCosh's claims that his results have been much better since he began the use of saturated solution of magnesium sulphate as an intra-intestinal injection. His method is to inject one or two ounces of sulphate of magnesium through a hollow needle attached to a large aspirating syringe; the small intestine is punctured as high up as possible and the wound closed by a Lembert suture.

While my experience in the surgical treatment of acute peritonitis has been limited, compared with that of many other surgeons, yet the results have been such that I feel justified in asserting that in the early stages of acute peritonitis we are not only justified in making an exploratory incision, but it is our imperative duty. I hold that every case showing most or all of the symptoms I have enumerated should be subjected to an operation at once or as soon as the patient has been prepared. I make but one exception to this rule and that is, in cases of gonorrhoeal infection of the tube we are justified in waiting in most cases until the acute symptoms subside. I have yet to see a death that was caused by a too early operation, while I have seen many where medication was prolonged until the surgical remedy was of no avail; and the sooner the general practitioner is brought to a realization of the fact that acute peritonitis is a disease that must be treated surgically, the sooner will the mortality in this disease be decreased. My method has been to irrigate freely the peritoneal cavity with from two to four gallons of normal saline solution, after which I irrigate with one or two gallons of saline solution, containing from 1-2000 to 1-3000 formalin in all cases where no pus or seropurulent fluid is found. I use no drainage, but fill the peritoneal cavity with plain physiologic saline solution and close the wound. Drainage is always attended by danger of pu-

trfection bacilli entering into the peritoneal cavity, and, to be of service, must be limited to the evacuation of pre-formed pathologic spaces. I have no cause to regret its abandonment in non-suppurative cases. If there has been no bowel movement for several hours and evidence of intestinal paresis exists, I inject from one to two pints of normal saline solution into the intestine by means of a hollow needle attached to a glass irrigating jar and close the intestinal wound by means of a Lembert suture. In cases of localized suppurative peritonitis, after evacuation of the pus I mop out the cavity with gauze dipped in normal saline solution containing 1-1500 formalin, and drain with gauze wicks.

The after-treatment in all cases of peritonitis which have been subjected to an operation demands close attention, for all such patients are prostrated, not alone from the immediate effects of an operation, but from the disease as well, and require stimulating treatment. Strychnia, camphor and alcoholic stimulants are to be used. Dry heat externally aids in relieving shock and in restoring peripheral circulation. Partial inversion of the body by raising the foot of the bed acts as a cardiac stimulant; thirst must be relieved when vomiting and nausea are severe, by high rectal enemata or subcutaneous infusion; tympanitis can often be relieved by the use of the rectal tube or high turpentine enemata.

PERFORATION PERITONITIS.

CASE 1.—F. G., a male, age 43 years, by occupation a laborer, was found by a park policeman in Gordon Park Sunday evening, July 26. An ambulance was called, and he was sent to St. Clair Street Hospital. The history as given me by the house physician previous to his coming under my charge is as follows: The patient says he has not been feeling well for several days. During Sunday he was taken with diarrhea and vomiting, with severe pain in the abdomen and lower limbs. On entering the hospital he was given a hypodermic injection of $\frac{1}{4}$ grain of morphia every four hours, which gave him some relief from pain, and vomiting was less frequent. The patient says his bowels moved several times during Sunday evening and Monday. Tuesday at 2 p. m. the house physician observed that the patient was in more pain and that there was stercoraceous matter in the material vomited. No bowel movement had occurred during the day. I was at this time asked to see the case. I found on inspection a pinched look, anxious expression, flat abdomen and a restless patient. On palpation I found extreme rigidity of all the abdominal muscles; in fact, they were hard and board-like; tenderness was general, yet on firm pressure there seemed to be one point at the outer border of the left rectus muscle, one inch below the umbilicus, which was apparently more sensitive than any other part of the abdomen. The pulse was 126 and the temperature 99. A hypodermic injection of $\frac{1}{50}$ grain of strychnin was given and the patient prepared for an abdominal section. An incision was made midway between the umbilicus and pubis; a retractor was used to raise the abdominal wall for an intra-abdominal inspection before disturbing the internal viscera; to the left of the incision a coil of collapsed bowel some five inches in length was seen. The peritoneal cavity was walled off with iodoform gauze, the collapsed bowel brought out of the incision and laid on a sterilized towel wet in saline solution; intestinal clamps were applied, five inches of bowel were removed, and the Murphy button used. After the button was introduced into the bowel, before being closed, twelve ounces of saline solution, the bowels thoroughly cleansed and wiped with gauze wet in saline

solution and returned to the peritoneal cavity. No drainage was used in this case, yet my patient made a rapid and complete recovery.

CASE 2.—Miss S., aged 22 years, by occupation a clerk, gave a history as follows: Three weeks previous she was sick and her attending physician said she had an attack of appendicitis—which I believe was so. After recovering from her illness she says at times she still had some pain. On Tuesday morning, Sept. 8, 1898, she arose as usual. After being up a couple of hours she was taken with violent pain in the abdomen, and vomiting began shortly thereafter. Dr. Pasko was called, who diagnosed peritonitis undoubtedly due to appendicitis. At 10 p. m. of the same day I saw her in consultation. The abdomen was distended, there was general tenderness, rigidity well marked, vomiting, frequently of a green rosy substance. Pulse was 120, temperature 102.5. Peristalsis was diminished. My advice was an immediate operation. This the parents did not accede to but wished to wait and see what they could accomplish by local applications during the night. Early the following morning the Doctor telephoned me that the patient was much worse and that they had decided to remove her at once to St. Clair Hospital for an operation. Before leaving home her temperature was 103, pulse 130, the abdomen greatly distended, tenderness general and extreme rigidity of all the abdominal muscles; vomiting quite frequent. After due preparation an incision was made in the right linea semilunaris. A slight amount of odorless serum was found in the peritoneal cavity. The small intestines were thoroughly covered by and agglutinated with plastic material. These adhesions were thoroughly broken up, and whenever practicable, the lymph was removed and washed away. The appendix was removed. It contained a large fecal concretion $1\frac{1}{2}$ inches from its distal end which was necrotic and broken down. The peritoneal cavity was thoroughly irrigated with some four gallons of normal saline solution; after this thorough irrigation. The cavity was filled with the same solution and the wound closed. No drainage was used. My patient made an uninterrupted recovery.

BIBLIOGRAPHY.

1. Journal of the American Medical Association.
2. Archiv of Klin. Chir.
3. Frederick Trevis: British Medical Journal, October, 1896.
4. Medical Record, April, 1897.
5. Medical News, May 29, 1897.

1051 Superior St.

DISCUSSION.

DR. A. J. OCHSNER, Chicago.—Dr. House has brought before us one of the most important subjects that we will have under consideration during this meeting, and this paper should certainly receive a very full discussion, because the very radical views which the Doctor has expressed should either be endorsed by this Section as good teaching, or, if our experience does not correspond with that of the author, this fact should be emphasized.

Having under my care a large surgical hospital, I have had an opportunity to observe an unusually large number of patients suffering from peritonitis, especially those in whom this condition is due to perforative or strangulous appendicitis, and others in whom it is due to infection from salpingitis. Patients are constantly being sent in with the request of the attending physician that an abdominal section be made at once, because this seems to be the only possible chance of saving the patient's life. Until about four years ago I usually complied with this request, and almost invariably the patient died. At that time I thought these patients died notwithstanding the operation, now I know that many of them died on account of the operation.

Usually the infectious material is primarily localized, either in the appendix or in the Fallopiian tubes, and this material is distributed to the other portions of the peritoneal cavity by the motion of the small intestines. If this motion is prevented in the early part of the attack the peritonitis will remain very

limited, and correspondingly harmless. The omentum naturally surrounds any infected intra-abdominal area, and the small intestines apply themselves against the omentum, but as soon as food is taken into the stomach, the peristaltic motion of the small intestines, which is always sure to occur at once, disturbs this condition and distributes any septic material with which parts of these organs may have come in contact.

On this physiologic fact is based the treatment which I now employ in these cases. These patients are given absolutely no food by mouth, not even a small amount of milk or gruel, because my experience has taught me that it requires but a very small amount of any kind of food to kill these patients. If food is given, it will simply decompose and increase the amount of septic material in the intestines; it will form gas which will distend the intestines, and favor the passage of the colon bacilli through the intestinal walls. But aside from this, the fact that it will give rise to peristalsis is alone enough to condemn the giving of food by mouth in these cases. If there is stercoraceous vomiting I wash out the stomach, and if no further food is given this will usually permanently stop the vomiting. The patient receives from three to five ounces of preigested food by enema every three hours.

Many of the patients come into the hospital with the abdomen enormously distended, a pulse ranging from 120 to 160 per minute, and a temperature ranging from 101 to 104.5 F., presenting precisely the same clinical picture that many others had shown who almost invariably died after a laparotomy of last resort, and still a very large proportion of these patients recover. I have frequently opened the abdomen in these patients later, and found gangrenous or perforated appendices, or extensive adhesions following a ruptured pyosalpinx, proving the correctness of the original diagnosis.

I believe that if this form of treatment were employed systematically whenever any form of peritonitis, not due to traumatic causes, first makes its appearance, general peritonitis would almost never occur, and I am certain that this treatment will save many patients, who would almost certainly die were they subjected to an operation under the impression that this is their only chance.

DR. J. B. MURPHY, Chicago—To begin with "I do not know where I am at" on this subject. I would like to ask Dr. Ochsner whether he means by allowing the contents of the bowel to escape to allow it to move on?

DR. OCHSNER—As long as the patients vomit I wash out the stomach. Then they get rectal feeding, three to five ounces of the liquid food, of some kind, every three hours, and absolutely no nourishment by mouth.

DR. MURPHY—That is not the question. But you said it prevented the contents of the bowel moving—being disturbed. Do you mean passing along in the canal, or what?

DR. OCHSNER—If you stop feeding them the small intestines will not churn around the septic material with which they come in contact, and no more food decomposes in the intestines because none is placed there. The decomposition products, and especially the colon bacilli, find a chance to get through the intestinal wall if food is given, because of the gaseous distension of the intestine, which does not occur if food is absolutely prohibited.

DR. MURPHY—The important factors in peritonitis are: The diagnosis. When does a patient get a peritonitis? When does he get a general peritonitis or a local peritonitis that is extending along and going to become a general peritonitis? What is the significance of the term "collapse" in connection with general peritonitis? Should we operate on a patient in collapse in general peritonitis? Do I understand Dr. Ochsner that he means this class of patients—patients that are collapsed, having the cold and clammy skin and gulping of that biliary material, if I may use the term, every ten or fifteen minutes? Is this the class of cases you stop feeding?

DR. OCHSNER—Some patients of that particular class will still get well if we stop the feeding; formerly they all died.

DR. MURPHY—The important matter in connection with general peritonitis, as I look on it, is the type of infection. What is the character of the infection? What is the course of the type of that infection after the peritoneal surface has been inoculated?—I will use that word. We know from experience and opening of the peritoneal cavity, when that contains a large quantity of pus, that cases, with a large quantity of pus, get well. We know from experience that cases with a small quantity of pus, opened and drained, will die; also that when we see a peritoneal cavity where the peritoneum is not blistered, where the peritoneum retains its gloss, regardless of the quantity of pus, patients in a large percentage of cases recover. We again know from experience, when we open the peritoneal cavity, regardless of the quantity of pus, that patients with blistered peritoneums—that is, where the intes-

tine has lost its gloss—will die. We must go back to the type of infection. I believe from cultures that we have made from these cases that the blister cases are of the streptococcus type. I believe, again, that a large quantity of pus cases are some other kind, but I leave out of consideration what the etiology is. I speak of the pathologic condition when you open the peritoneal cavity. If the peritoneum is blistered, I do not recall a single case that has not died. Where the peritoneum has not been blistered, many, many of them have recovered. Then, there is a middle class that you can not save. The infection has existed for four or five days. And it seems to me somewhat a mystery where the infection comes from. I am much more afraid of infection from the lower portion of the bowel than the other, and that sustains Dr. Ochsner's position, with a gastro-perforating abscess extending down to the peritoneal cavity, having an accumulation of pus in the pelvis from a perforating ulcer of the stomach, and I report a case where the patient had been seen but thirty-six hours and the pelvic cavity filled with pus. I washed him up with salt solution and closed him up without drainage. I believed he would get well, and he did get well.

In the diagnosis the length of time the pus is retained in the peritoneum is a very important thing. A surface covered with these endothelial cells—and these have the same functions as the epithelial cells—a material that destroys the endothelial cells and blisters the bowel, opens the lymphatics for absorption. I believe the surface of the peritoneum absorbs little more than the surface of the skin. As soon as the endothelial cells are disturbed, then absorption commences, and that is why I draw the line on appearance of cases. I believe all cases of general peritonitis should be treated in the early stage. I believe diagnosis should be made on pain, tenderness, nausea, vomiting, temperature and distension—and this is not an early symptom; it is the last of symptoms; it may not be present. You should not wait for collapse or shock. The collapse is practically the fatal condition. I do not recall a single case of collapse, of cold perspiration, that has recovered from an operation or recovered without—they have all died. I have a number of times recently refused to operate. If I would operate I would make a large opening and clean out the peritoneal cavity thoroughly with gauze or fluid.

DR. THOS. H. MANLEY, New York—What does he mean by blistering of the abdomen? He says every patient with a blister dies—those with the severe form of peritonitis with blisters die. What does he mean by that?

DR. MURPHY—I thought I made myself plain. Where the peritoneum is blistered, the endothelial cells remove from the infection of the peritoneum.

DR. OCHSNER—If this treatment is followed in the early cases there are no late cases, and, on the other hand, the conditions in which formerly I have found the blistered peritoneum and in which the patients died—the same clinical conditions—the patients get well now.

DR. JOS. H. BRANNHAM, Baltimore—This discussion has brought out a most remarkable condition of things. The idea of general peritonitis is one of infection, generally one after injury of some kind, either perforation or gunshot injury, or something of that nature, and I can hardly understand—although we know washing out the stomach and lower intestine can do something—how we can listen to teaching that keeping the patient quiet, and without food, will cure a case of peritonitis with a half-dozen gunshot wounds, through the intestine. Maybe Dr. Ochsner means some other kind of peritonitis. If it is perforation of intestine and you have infection from colon or other bacilli, we are going backward. I should say that this teaching is a long step backward, because I believe with the writing of the paper, that the best treatment of general peritonitis is operative treatment with thorough cleansing of the bowels and peritoneal cavity, added to the method recommended of thoroughly cleansing the alimentary canal above and below. A certain number of cases, especially those in which there is a good deal of fluid in the peritoneal cavity, will get well after this treatment; but in a general infectious peritonitis with a lot of pus in the peritoneal cavity, if it has made any progress, or unless the infection is caused by a mild germ—such as the pneumococcus—the patient will surely die if left without some surgical interference. On the other hand, if the alimentary canal is thoroughly cleaned from above and below—the bowels cleaned off after operation—a small percentage will be saved, and I think that small percentage with improvement in the method of cleansing will gradually be increased. I think it would be just as reasonable to leave a patient—after washing out his stomach and alimentary canal—quiet if he had a perforating appendicitis, as it would be if he had a general infectious or suppurative peritonitis, and I think that because a few have died after operation we should

not go backward to some old method—the only improvement over which is the keeping of the alimentary canal as empty and clean as possible.

DR. FLOYD W. McRAE, Atlanta, Ga.—It seems to me that, if my ideas of pathology are correct, Dr. Ochsner is wrong. The condition he described is secondary to the primary infection. This new infection that is added to the original infection, due to paresis of the bowel, is the result of fermentation and putrefaction in the alimentary canal. The general peritonium is in danger here from two sources: the primary disease, and the infectious material from the thin-walled intestines of lowered vitality. The diagnosis in these cases is of the utmost importance, because it frequently enables the surgeon to remove the primary cause of the peritonitis. By early operation, the infection can be removed before the condition described by Dr. Ochsner obtains. That is the way it impresses me. I have recently collected statistics of 601 cases of septic peritonitis, subjected to surgical intervention, with a mortality of 52.4 per cent. I believe these results are better than can be obtained by medical treatment. Dr. Van Arsdale recently reported ten cases of general septic peritonitis with six recoveries and four deaths. Surgeons operating early in this condition are the ones getting good results. In the late cases, where there is enormous distension, surgery does little good; but in these extreme conditions, I think the treatment which Dr. Ochsner recommends is the proper treatment. I have seen three cases of beginning general peritonitis get well under operative interference. By general peritonitis, we now understand that condition where the infection is not limited by adhesions, where there is nothing to prevent an extension—we rarely see a case where the entire peritoneum is inflamed. I have seen three cases get well where there was that dirty-dish-water fluid loose in the peritoneal cavity, and the whole membrane seemingly involved, due to gangrenous appendices. I do not believe they would have gotten well under Dr. Ochsner's plan of treatment.

DR. M. F. PORTER, Fort Wayne, Ind.—I wish first to emphasize what Dr. Murphy says regarding the importance of realizing the nature of the infection that is at the bottom of peritonitis. I believe that if you have a streptococcus invasion of the peritoneum, you do not have to have infection extending over a great surface of the peritoneum in order for that patient to die, no matter what you do. On the other hand, I wish to say that I have looked over as much of the peritoneal surface as it is possible to look over from opening six inches in the middle line and have seen a perfect, if you please, complete bath of all the surface in pus, and I have seen these persons get well. I do not know of any means of telling whether you have to deal with streptococcus or infection of some other sort prior to the operation. When the opening is made I believe you can. I have seen the intestines look as if they had been dipped in boiling water; I believe these patients will die. Dr. McRae has just spoken of a condition in which he says all patients die—a great distension of the bowel, and this seems to me an important point. I believe in these cases of great distension of the bowel, that the opening of the gut is of almost as much importance as is the opening of the peritoneal cavity itself for the purpose of drainage. It is true that most of these people die, but I have seen them so far distended that they could scarcely breathe—cyanotic—and yet I have seen such patients get well with opening the gut, doing just as little as you can do to get rid of your septic material for the time being and finishing the operation by and by. It is good theory and good practice; it is a nice idea to get rid of the cause of the trouble, but you can not always do this at the first operation; some of these patients are dying, not from appendicitis or peritonitis, but from the results—tympany has a great deal to do with it. Patients will be relieved if you open the gut. So I believe that the first thing to do is to stop the absorption, relieve the tympany, etc., by a quickly performed operation, simply a laparotomy, cutting a hole in the intestines, leaving it lie on the outside, letting the gas escape, and finishing the operation when the patient is stronger. Most of them will die, but you will not kill any one of them. I admire Dr. Ochsner's bravery in saying: "I have killed them." He did not save them. That is so, and most of us are in the same boat; but now and then you have one that does get well and then you know that you have saved a life.

DR. BROWN, Illinois—As a representative of the country doctor who is a listener probably more than anything else, I want to say that this discussion puts me in mind, like every other surgical treatment in treating a disease, of a story. Our magnificent surgical friends, Dr. Ochsner and Dr. Murphy, are, apparently, getting on two sides of the question, when, in reality, they are not. The story of which I am reminded is of the student who was questioned by the professor

as to what he would do in the treatment of a certain difficulty—he would do this and that, and the other thing. "If you didn't succeed, then, what would you do?" He said to the professor, "I would send for you!" The country doctor can not send for Dr. Ochsner and Dr. Murphy. I should be compelled to send for both of them, because they have two kinds of treatment. This treatment of a case of peritonitis is the treatment of an individual case. When Dr. Ochsner goes to the bedside of a patient, he will treat that individual case as he finds it, not as you discuss it here before these gentlemen present. Dr. Murphy will do exactly the same thing, and I am very much afraid that if they were both at the bedside, they would come pretty near getting the same idea when they saw the individual case. I know the treatment of Dr. Ochsner—depriving the patient of all nourishment—is a good one, but whether it will do all that he says I am willing to wait and see.

DR. MOORE, Indianapolis—I came in late, but I trust the author of the paper laid stress on the fact that peritonitis is a secondary affair; it is always secondary. There is no one thing more remarkable in the history of medicine and surgery than the fact that for centuries men of high and low degree have been making post mortems and finding cases of peritonitis without having recognized that fact which we all now recognize—that peritonitis is a secondary affair. It is always secondary to an appendicitis, to a salpingitis, to a cholecystitis, to a perforation, or to some surgical lesion. Therefore, if we get our patient early and have the evidence of general peritonitis, the mere fact that there is a general peritonitis should not direct us away from our surgery. We should treat those cases surgically. When a patient comes in with a last gasp, our medical friends very kindly turn him over to us. Then I am inclined to think that our friend, Dr. Ochsner, has a very level head. I think it behooves us to do nothing in those extreme circumstances. If I may judge from my own personal experience we will accomplish nothing but to bring surgery into disrepute; I mean in these cases coming in at the last minute. I have never seen surgery do good there, but at an early date why should we treat a patient with inflammation of the abdomen differently from a patient with inflammation in any other part of his anatomy?

DR. A. F. HOUSE, Cleveland—I want to say that while, of course, I had to cut my paper somewhat short, it is not likely that you would treat peritonitis surgically without some medical preparation. In my paper will be found what I believe to be proper preparatory treatment, as well as before, during and after an operation. I believe that the alimentary tract should be emptied, if it is possible. If you cannot do so by salines by the mouth or by fluids injected, or salines into the rectum, then we should empty the alimentary tract, not opening the abdominal cavity. I think I made mention of the fact that while no bowel movement had occurred for some time, I did not fool with a patient, and that, while there were evidences of paresis, I used a large needle-aspirating needle—for the purpose of emptying the bowel of liquid feces and gas and then injected from one to two pints of normal saline solution. I have done that with the very best results. As to peritonitis being a secondary condition to something else, I think I made mention of that. Another thing is in what class of cases to operate or when to operate, and when not to operate. I think I laid as much stress on the different symptoms as it was possible. I think, as many others do, that each and every individual case must be governed by its condition when seen. I simply wanted to lay stress on the fact that I believe that all cases of peritonitis beginning with local tenderness becoming general, with rise of temperature and rapidity of pulse, should be operated on at once, and I think I can show that by statistics. I know that had I operated early I would have saved my patients. It is not four weeks since I showed a case, five days after being diagnosed as appendicitis. It was seen by a prominent surgeon of the city forty-eight hours before I saw it. He said wait for developments and let it localize itself. He did. The next day I saw the case. He said let it localize itself and develop. He did. I saw the case within twelve or twenty-four hours afterward. I then believed that the belly was filled with pus. It was a retrocecal abscess. I recollect another case of six weeks ago, where the gentleman was taken sick on Tuesday morning going to his place of business. He immediately returned home, and called in his family physician, who diagnosed appendicitis. A surgeon was called in shortly afterward and he rather dilly-dallied and said, "Wait for developments." I saw the case on the same evening, or the evening of the same day. The tenderness was local in the morning; when I saw the case, tenderness was beginning to be general, pulse 120, temperature 103, tympanitis beginning to be marked and there was rigidity of the entire abdominal

muscles. My advice was immediate operation, not to wait until morning. My advice was not taken, because I could not promise to cure the patient. The patient was not operated upon. At the post-mortem what did we find? A belly full of pus. The man had a postcecal abscess ruptured. And what was the consequence? Death.

EPITHELIAL STRUCTURES IN THE PERIDENTAL MEMBRANE.*

BY FREDERICK B. NOYES, D.D.S.
CHICAGO.

For four or five years I have been interested in the histologic study of the peridental membrane, and during that time have devoted what time I could to the special study of certain structures found in that membrane, and called by Dr. Black, who first described them, the glands of the peridental membrane.

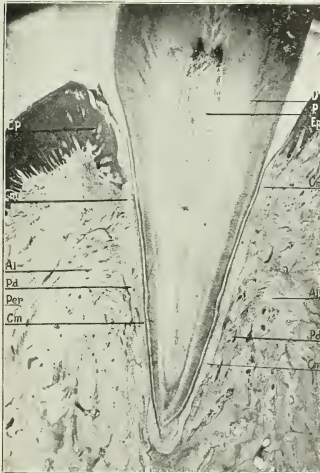
The work which I have tried to do on this subject is really not in shape to report, as it has not been worked out to the point where positive statements can be made

ing. I need not dwell on these technical difficulties. All who are familiar with such work will understand them. I mention them only as an apology for defects which may be noticed in the illustrations.

One man has said to me that he had never seen a specimen of tooth that would be considered technically acceptable in the study of the liver, for instance.

It is true that the technic of this study must be improved. It is almost impossible to get sections of the peridental membrane as thin as would be desirable for high power work; but, though they are harder to study, many things can be learned from thick sections; some things better than from thin ones, especially by comparison with low powers, and the use of the binocular. The difficulty of showing in photographic illustrations the things that are learned in this way is very great, however.

The diseases of the peridental membrane have attracted marked attention, and provoked an immense



Longitudinal section of the tooth, and alveolar process showing the fibers of the peridental membrane, magnified 40 diameters—35 mm. Zeiss obj. Ep, epithelium lining the gingival space and continuous with the epithelium covering the gum. D, dentine. P, pulp. Cm, cementum. Al, bone of the alveolar process. Pd, peridental membrane. Per, periosteum covering the outside of the alveolar process.

in regard to the nature of these structures. But I have reached a point where to carry through the work would require from three to six months of time, without interruption. This it has been impossible for me to do, and I see no probability that I will be able to do it in the near future. I have, therefore, decided to make this simply a report of my work, and a statement of the problem as it stands. The histologic study of this tissue is beset with the greatest technical difficulties. Situated between calcified tissues, all specimens must go through the calcifying methods, and, moreover, the character of the tissue is such that it is difficult to avoid overharden-



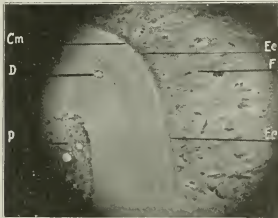
Transverse section of the tooth, peridental membrane and alveolar process. Magnified about 40 diameters—35 mm. Zeiss obj. M, muscle. Per, periosteum on the labial side of the process. Al, bone of the alveolar process. Pd, peridental membrane. P, pulp. D, dentine. Cm, cementum.

amount of writing and discussion. It has been a continual surprise to me to find so many of those who write most freely on this subject show so little interest in the histologic character of the tissue with which they have to deal. They usually dismiss it with a word. Last winter one man who has written much on this subject, told me that he had never had time to take up the study, and showed absolutely no interest in it; still, in a paper which I heard him read a few days before, he had indulged in arguments based on his ideas of histology of the tissue.

I am unable to understand how men can hope to arrive at a knowledge of the diseased conditions of a tissue, the normal conditions of which they do not know, and which contains structures which they do not recognize, and concerning the origin, function, or destiny of which

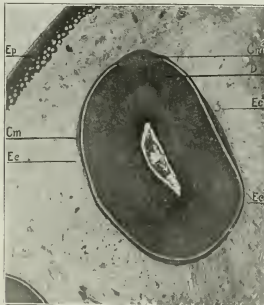
*Presented to the Section on Stomatology, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

they have no idea. It is impossible that anything satisfactory can be worked out in regard to these conditions, which are of so great interest to the dentist, until the problems are attacked in a more scientific and rational manner. Until then we are fighting we know not what, we know not how.



Transverse section through two teeth and the peridental membrane in the gingival portion. Magnified about 40 diameters—35 mm. Zeiss obj. Ep, epithelium covering the gum. D, dentine. Cm, cementum. Cm 2, cementum filling an absorption cavity in the dentine. Ec, epithelial structures. Ec, 2, portion shown in Fig. 1b.

The peridental membrane (Figs. 1 and 3) may be defined as the tissue which fills the space between the root of the tooth and the bony wall of the alveolus, being attached to the cementum on the one side and the bone on the other; it surrounds and is attached to the root from the border of the alveolus, to the gingival line, and supports the epithelium of the gingivus. It has been called by a number of names, of which I prefer pericementum, or peridental membrane, the two being used synonymously. This membrane belongs to the class of fibrous membranes, being composed chiefly of white, fibrous con-

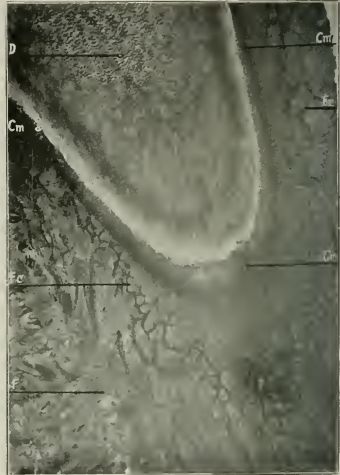


Cross section of a root of an incisor showing the epithelial structures. Magnified about 75 diameters. A. A. Zeiss obj. Cm, cementum. D, dentine. P, pulp. F, fibers of the membrane. Ec, epithelial structures.

nective tissue. It is not in any sense a double membrane, and, while it has qualities in common with the periosteum with which it blends at the rim of the alveolus, it differs markedly from the periosteum in any position.

For convenience of description I have followed Dr. Black's division of the membrane into three portions. The gingival portion surrounds the neck of the tooth from the border of the alveolar process to the gingival line, and supports the gingivus. The alveolar portion surrounds the root from the border of the process to the apex. The apical portions surround the apex of the root and fill the apical space.

In transverse sections of the membrane, which have been well stained with hematoxylin, and eosin, even with as low a power as a thirty-five (Figure 4) m.m. lens,



Tangential section of the peridental membrane. x75 A. A. Zeiss obj. D, dentine. Cm, cementum. F, Fibrous tissue of the peridental membrane. Ec, epithelial structures, showing the net work.

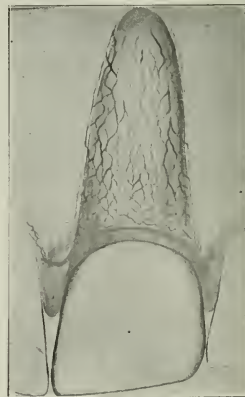
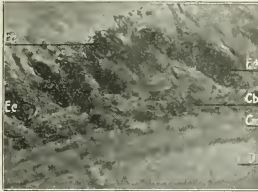


Diagram showing the arrangement of the structures around the root of a superior central incisor. (Dr. G. V. Black.)

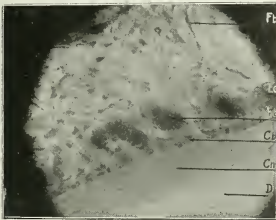
small deeply-stained bodies can be seen lying close to the cementum, and winding between the fibers as they spring from it. With a one-half or three-fourths inch (Fig. 5)

objective and a binocular instrument, the winding of these cords of deeply-stained cells among the fibers is beautifully shown. In such observations these bodies very strongly suggest such structures as the sweat-glands. As many as 200 bits of these cords have been counted in a transverse section of the gingival portion of the membrane around an incisor of a young lamb.



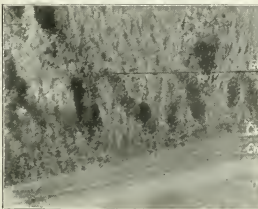
Epithelial structures magnified about 550 diameters; 1 1/2 oil Zeiss obj. Ec, epithelial cords showing the cell forms and nuclei. Cb, cementoblasts. Cm, cementum. D, dentine.

In studying the arrangement of these cords they are found to form a network about the root of the tooth, extending from near the attachment of the epithelium at



Epithelial structures magnified about 550 diameters; 1 1/2 oil Zeiss obj. Fb, fibroblast. Ec, epithelial cords cut through, showing the arrangement of the cells. Cb, cementoblasts. Cm, cementum. D, dentine.

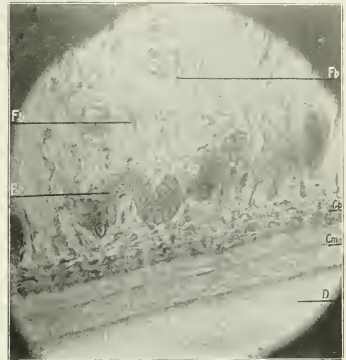
the gingival line almost to the apex. In the gingival portion they form a close-mesh net, which grows more open as they pass apically. In sections cut tangentially



Epithelial structure magnified about 550 diameters; 1 1/2 oil Zeiss obj. Fb, Fibroblasts. Ec, epithelial cord showing cell forms. Cb, cementoblasts. Cm, cementum. D, dentine.

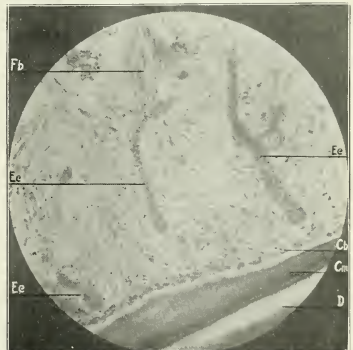
to the root (Fig. 6), this branching and net formation is shown, but the entire arrangement cannot be shown in photograph. This diagram (Fig. 7), made by Dr. Black some time ago, shows the plan as it is made out from the study of many sections.

When Dr. Black first described these structures, thirteen or fourteen years ago, in his "Studies of the Periosteum and Peridental Membrane," he considered them to be of lymphatic character, and there are things about them that support this idea, but from a study of the character of the cells they seem to be of epithelial order showing various forms, sometimes appearing ovoid, but usual-



Epithelial structures magnified about 500 diameters; 1 1/2 oil Zeiss obj. Ec, epithelial structure appearing to show a lumen and showing the arrangement of the e cells. Cb, Cementoblasts. Cm, cementum. D, dentine.

ly polyhedral, or cuboidal. The nucleus is always large polyhedral, or cuboidal. The nucleus is always large and conspicuous, and often shows nucleoli. (Figs. 8 and 9.)

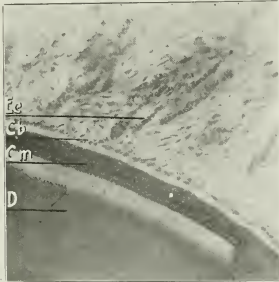


Epithelial structures magnified about 300 diameters; D, D. obj. and No. 2 projection ocular Zeiss. Fb, fibroblasts. Ec, epithelial structures. Cb, cementoblasts. Cm, cementum showing the penetration of the fibers of the membrane. D, dentine.

The cells are not arranged into true tubules in all places (Fig. 15), though what appears to be a lumen, with a circle of cells about it, may be found in a good many positions. The structures are better described as cords of cells than as true, distinct tubules. In some

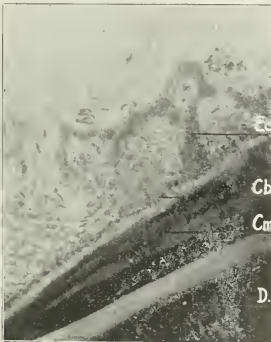
places there is a circle of cells, with one in the center. Sometimes there seems to be a central cluster and a circle around it. These appearances may be caused by a cut, which does not strike the center of the cord, or tubule, but this could hardly be the case in transverse sections. This arrangement of the cells suggests lymphatics, rather than true glands, though some of the ductless glands, as the thyroid, show alveoli solidly filled with cells.

The cords of cells lie very close to the cementum be-



Epithelial structures showing club-shaped ends. Magnified about 200 diameters; 4 10 in. Bausch & Lomb obj., No. 2 occ. Ee, epithelial cords. Cp, cementoblasts. Cm, cementum. D, dentine.

tween the fibers as they spring from it (Fig. 16), swinging out from the root and back again in hoops. In many places the end next to the cementum is club-shaped (Figs. 17, 18 and 19), and comes very close to the root between the cementoblasts. A delicate basement mem-

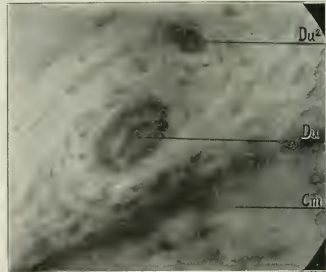


Epithelial structure with club-shaped end close to the cementum. Magnified about 300 diameters; 4 10 obj., Bausch & Lomb, No. 2 occ. Ee, epithelial structure with club-shaped end. Cp, cementoblasts. Cm, cementum showing the penetration of fibers of the membrane. D, dentine brane surrounds these cords (Figs. 9 and 17), and in a few places a circular arrangement of fiber may be seen about the large ones. (Fig. 20.)

I have searched for something in the form of a duct for these structures, or some connection between the epithelium lining the gingival space, and the cords. Some appearances which suggest ducts are uniformly found, but it has been impossible to follow them because of the failure to obtain complete series of sections.

In the gingival portion of the membrane in transverse sections I have found a number of very perfect tubules in section, of which Fig. 20 is the best illustration I have been able to get, but that is not as good a representation of the object as I could wish. With the microscope it shows a very perfect circle of cuboidal cells with large nuclei. In the lumen are several loose cells. There is a distinct basement membrane, and a few circular fibers. Just on one side of this is a small duct made up of four cells. When these tubules have been observed, they show a tendency to swing out from the surface of the root. Figure 21 shows these duct-like structures in longitudinal section. As they pass away from the cords of cells, they swing away from the cementum, and, passing gingivally, curve farther away from the root as the gingivus is approached. The epithelium of the gingivus presents long slender projections, often of complicated form. The connective tissue between these contains small round cells. This collection of round cells is especially conspicuous on the proximal sides, and constitutes what has been called the gingival gland.

The ducts have been followed up into these epithelial legs, where they have been lost. But even in this position



Transverse section of a duct-like structure. Magnified about 1000 diameters; 1 12 oil Zeiss obj., No. 2 acc. Du, duct showing ring of cells and loose cells in the lumen and circular arrangement of fibers around it. Du 2, small duct with but four cells showing arrangement of fibers around it. Cm, cementum.

their cell structure is very different from that of the epithelial legs, so that I would say that they do not connect with them. As far as I have been able to follow them they maintain their characteristics.

The structure referred to by Dr. Black¹ as the gingival gland (Fig. 23), and which as he states is not a gland at all, is very characteristic of the gingivus, at least in the sheep, in which I have chiefly seen it. At first I was inclined to regard it as pathologic, but it is so nearly universal in large or small form on the proximal portion of the gingivus, and has been so universally observed by Dr. Black, that it seems to be the normal condition.

The presence of these epithelial structures in the membrane is beyond question. Their nature, origin, and function can not be stated. I have showed photographs and sections of them to very many histologists and pathologists, engaged in general morphologic as well as in medical work, and almost without exception, after looking them over, they say: "On casual inspection I should say that they are probably tubular glands!" I have observed them in sections of the membrane from man, dogs, cats, sheep, pigs, about the temporary and permanent

¹ Dental Cosmos, February.

teeth in the young and the old membrane. Like all cellular elements of the membrane, they grow less numerous with age, but they have been seen in the membrane from a man 70 years old.

The size, number, persistence, and conspicuousness of



Longitudinal section of duct-like structure. Rephotographed from two photomicrographs with an A. A. Zeiss obj. Ep, epithelium covering the gum. Ep 2, epithelium lining the gingivus in the region of the gingival gland. Cm, cementum which has separated from the dentine in decalcification. Du, duct. Ec, epithelial cords. B, blood-vessels. F, fibrous tissue of the membrane.



Longitudinal section showing the gingival gland. Rephotographed from two photomicrographs made with an A. A. Zeiss obj. Ep, epithelium covering the gum. Ep 2, epithelium lining the gingivus. Gg, gingival gland showing the round cells between the epithelial layers. N, Nasmyth's membrane. Cm, cementum separated from the dentine by decalcification. Du, bit of a duct. Ec, epithelial cords.

these structures make it seem extremely improbable that they are simply embryonal remains from the epithelial cord, or external or internal tunics of the enamel organ, as suggested by the work of Von Brom, quoted by Charles Thomas², and as was suggested to me by Dr.

Huber of Ann Arbor. I have not attempted to trace the origin of them, but in the last few weeks, by the kindness of Dr. John Palmer of Chicago, I obtained some rabbits' jaws, soon after birth. I have studied them over, and have been unable to find any trace of such structure in membranes of unerupted teeth. It seems to me that these structures must be present for a purpose. What that may be I cannot suggest, and I know nothing that throws any light on the question.

In order to work out the problem to meet the requirements of the histologist, four things must be done.

1. The origin of the structures must be traced, so as to determine from what tissue they are derived.

2. Their relation to the blood-supply must be determined.

3. Their morphology must be determined, by making a complete series of sections, both longitudinal and transverse, to determine whether they have ducts or not, or other connection with the gingival epithelium; and the complete reconstruction of them from serial section. The last task is perhaps impossible, but it could be done for small areas so as to satisfy the demand.

4. Their condition in diseased conditions of the membrane must be carefully studied.

Until such a program is followed out we can but speculate as to what the origin and function may be, and speculation of this kind does not often aid in the advancement of scientific knowledge.

SYPHILIS IN SURGICAL PRACTICE.

BY ARTHUR DEAN BEVAN, M.D.

Surgeon to Presbyterian Hospital; Associate Professor of Surgery, Rush Medical College.
CHICAGO.

My father was a physician. One day, when a boy of 16, I was in my father's office when a tall, fine-looking man of 35 or 40 came in to consult him. This man was a German-American of considerable prominence. I had often met him before, and had always admired him. He was a great thick fellow, more than six feet tall, with large brown shaggy head and beard, deep-voiced, bright-eyed, the picture of physical and mental health; a fine type of the Teutonic massiveness and vitality that has relegated the Latin races to the dying nations of the world. I remember that when I read "Caesar's Commentaries," with the description of the giant Germans, who disputed Caesar's advance across the Rhine, and who died so bravely, crushed by the better arms and better discipline of the Roman legions, I thought of this man; they were his ancestors. He was a picture of what they had been. After he had left the office I drove with my father on his afternoon round of visits. We had been in the buggy, driving possibly ten minutes, when my father suddenly turned around to me and, for the first time in my life, gave me some advice on the subject of sexual intercourse. He told me of the penalties of promiscuous intercourse, the virulence of gonorrhoea, the ravages of syphilis. He drew a picture of an invalid wife, a blind child, the man with the blurred brain and the incoherent speech of syphilitic aphasia, and the staggering gait of ataxia. He was a graphic word-painter, and I remember as a boy it made a profound impression on me. And in some way I always associated this, my first knowledge of venereal disease, with the German who had left the office but a short time before. That was twenty-two years ago. Two weeks ago an old man, of great massive frame, dragging his

²Read before the Alumni Association of Rush Medical College, May 24, 1899.

right leg, shuffled unsteadily into my office; his pocket handkerchief and gloves were almost falling out of his right overcoat pocket; he could not articulate above a whisper, and even then could command but a few words. The left eye was dulled with an old iritis; the right eye was reddened by an acute attack; the pupil dilated unevenly with atropin; the hands presented syphilitic skin and nail lesions; and this wreck was my German, the German whom I had idealized; plus syphilis. With some difficulty I obtained his history, and, most interesting of all, the fact that he had always denied to the many physicians who had treated him for twenty years for various lesions, principally if not entirely syphilitic, syphilis. My father and myself, he said, were the only ones who knew that he had syphilis, because, as he stated, my father had told him at the end of two years' treatment that he regarded him as cured. My father died about that time, and he said no one then living knew that he had had syphilis, and he had a family and he could not have anyone know, and would I swear to him that I would not tell any one? You are all familiar with the picture I have so crudely drawn, the common picture of syphilis and its concealment, interesting only because of the frame of circumstances which surrounds it.

When I received my degree in medicine I accepted a contract position as acting assistant-surgeon in the U. S. Marine-Hospital service. I was stationed at the marine hospital in Chicago. My duties were to look after the out-patient department of the work. In this department we treated nearly 3000 patients annually, about one-third of these being venereal diseases, and of these 1000 venereal cases, many were cases of syphilis, representing all stages of the disease. Syphilis became the first great problem in disease with which I wrestled, and the diagnosis, the vagaries, the treatment, and the tenacity of the lesion became an interesting study, for which later five years of regular service in marine hospitals afforded an abundance of material. The sailor man is as a class easily the point of least resistance in the community to syphilis. His long voyages and enforced continence, and his drunken embrace of blear-eyed Venus during his short spree in port, make him an almost certain victim of infection, and the fact that he seldom early receives the benefit of proper and continued medication enables the marine surgeon, into whose hands the derelict finally drifts, to study often the natural history of syphilis unmodified by treatment. Many of our cases are honestly ignorant of having syphilis; some would deny and later confess to a syphilitic history, when confronted with positive evidence. I early learned to place little or no reliance on the previous history in making a diagnosis.

Since leaving the marine-hospital service, ten years ago, I have devoted my time exclusively to general surgery, and in this work I have found that my early syphilitic training has been of great service. I do not mean to pose as a syphilographer, but I am sure that I have been saved many mistakes by this training. I am sure that I have seen many cases which this training clearly branded syphilis to me, overlooked by the specialist, the surgeon and the general practitioner. On the other hand, I must confess that in a number of cases I have believed lesions syphilitic which were later proved to be of other origin. I have learned to know that syphilis is not a respecter of class or person—rich and poor, youth and age, priest and libertine, prostitute and virgin, guilty and innocent, all can and do acquire this disease. We must not be astonished in finding it

anywhere. We must never accept a negative history as definite evidence of its absence. Syphilis is more widespread than is generally supposed. It causes many an illness when it is not recognized or even suspected. Without carrying our suspicion to extreme, we should constantly be on the watch for syphilis in our everyday work.

It is not my intention to present a discussion of typical syphilis, as is done by the syphilographers, in textbooks, but believing that a broad discussion of the unusual and often unrecognized lesions of syphilis as they present themselves to the general practitioner and specialist might interest all, I will open the discussion by reviewing some of my experiences with syphilis in surgical work. I might entitle this brief paper, then, "Unusual Syphilis in Surgical Practice."

The subject of extragenital chancre will furnish the unusual form in the primary stage. I have handled about fifteen of these lesions which I can now call to mind; most interesting to us possibly are the extragenital chancres which physicians acquire in their professional work. I have seen a number of these cases; the majority of them presented none of the characteristics of chancre and were mistaken for pus infections, or tuberculous infections, and later, when the axillary lymphatics were involved and a low form of syphilitic fever was present, the axillary lymphatics were removed; the subsequent development of the secondary symptoms cleared up the diagnosis. Several of my cases have been seen by expert syphilographers, and the primary lesion positively pronounced not the initial lesion of syphilis. In one case an expert said that if it was a chancre it certainly had none of the characteristic signs, and that he had never seen one like it. In another case, seen by me with a colleague, the syphilographer staked his professional reputation that the lesion was not specific, and yet in both, the later secondary symptoms disproved their statements. In both these cases the axillary lymphatics were removed with the idea that we had a low form of pus infection or mixed infection to deal with. The lesson to be learned from such cases is that extragenital chancres of the fingers are seldom typical. An infection on a physician's hand, which is not acute, which produces enlargement of the axillary lymphatics, which persists for more than ten days, which is locally limited, which is accompanied by a slight continued elevation of temperature, is suspicious of syphilis, no matter what the size, shape, or consistency of the sore may be.

In looking into this question I find that trained nurses very rarely acquire syphilis of the fingers. Among 500 nurses observed from 1883-1898, no cases; among physicians it is much more common than is generally believed. Among the several hundred physicians, certainly less than five hundred of my acquaintance, I know of six cases of extragenital chancre. This is almost entirely preventable and shows the necessity of the observance of the simple prophylactic rules required, and evidently followed out more carefully by nurses than physicians. The primary sore of the finger may be so small and so transient that it is not recognized; the secondary symptoms following may be slight and not interpreted and the case goes on to tertiary syphilis untreated. I have seen this in the case of a physician of unusual intelligence, who, in the light of tertiary symptoms, was able to review in this new light his previous four years and could plainly recall the primary sore and the mild secondary symptoms. In the light of this case, I have no doubt that many cases of syphilis exist in the com-

munity unrecognized by the physician and unknown to the patient. Extragenital chancres of the lips are fairly common; usually the infection is carried from a mucous patch on the lip of the infector; sometimes, of course, due to sexual perversion, and sometimes due to an indirect infection from instruments in the hands of dentists or physicians.

I have had one chancre of the tonsil occurring in the case of a physician who had his throat treated by a throat specialist, the infection being carried by the instruments used. A great mass of glands on the side of the neck followed the small unrecognized chancre. Two prominent surgeons diagnosed tuberculosis of the cervical glands and advised removal. Prof. James Nevins Hyde and myself suggested the possibility of syphilis. The doctor patient ridiculed the idea, but decided to await developments. Within a few weeks secondary symptoms occurred; treatment, rapid disappearance of glands, but later, unfortunately, brain syphilis.

An unusual type of extragenital syphilis occurred in a doctor who presented himself with the history: He tripped and fell on an iron rail, cut the skin over the patella; wound slow in healing; examined and probed by a number of doctors; wound almost healed, and then after twenty days a circular hard ulcer developed at the site of traumatism; hard chancre from infected instruments or fingers.

A physician brought me to see his son-in-law, his grandchild and his wife, who he said had been poisoned by poison ivy. The man had a pustular syphilide, the child inherited syphilis of the skin and skeleton, the grandmother a history of having had a sore on the arm on which she usually carried the child. This healed slowly, was accompanied by weakness and deterioration of general health, and she was, when I saw her, suffering from a macular syphilide. The mother of the child had no symptoms and my doctor friend, the grandfather, has escaped.

When stationed in Portland, Ore., my position as marine surgeon brought me many patients from the salmon fishermen; some seven thousand were at the mouth of the Columbia River. These men, like sailors, frequently acquire syphilis. Two of them go in a boat to tend their nets and live together for many weeks and months. Sodomy is common, and as a result chancre, chancreoid and gonorrhoea of the rectum occur. I have seen several cases of chancre of the rectum among these men, but have never been able to follow out the later history of these cases to determine whether the lesion was the initial lesion of syphilis or chancreoid.

The facts to be kept in mind in extragenital chancre are: 1, its atypical character; 2, that it is common, at least that it is not a rare lesion; 3, that it is possible in any individual; 4, that we should wait for secondary symptoms before placing the patient on constitutional treatment.

The second unusual form of syphilis I desire to mention is the unusually severe constitutional symptoms called syphilitic fever. I have seen one case in which I believe that it is possible that death resulted from the profound primary syphilitic intoxication before secondary symptoms developed; history of healing, hard chancre, bubo, severe pains in limbs, high continued fever, and death at the end of ten days; no post-mortem made. I have diagnosed typhoid several times and later found that I had syphilitic fever to deal with.

I shall pass over the unusual skin lesions of secondary syphilis because I am not qualified to discuss them. I shall simply remark, in passing, that I am impressed

with the fact that they may simulate almost any skin lesion, and that I lose confidence in the dermatologist who with great emphasis affirms positively that a certain lesion cannot be syphilis because it lacks this or that characteristic of form, color, consistence, symmetry, etc., because I have seen a number of cases in which these positive statements were made turn out to be syphilis after all.

Syphilitic ulcerations of the skin and mucous membrane are common. As a rule, in the light of the previous history they are readily recognized. There is a large number of cases, however, in which the patient conceals the history, or is ignorant of the history, and in which there is no other sign to guide the physician. These cases form a large group, and they are frequently mistaken for other lesions. As types, I will cite the following cases:

Mrs. P. was sent to me by a dermatologist, to remove a small epithelioma from the nose. I found a small ulcer with hard base, about the size of a bean, which had existed for several years; it would sometimes scab over, but never heal. She was a woman of refinement, fine social position, and with no specific history. I put her on iodid in large doses, and in two weeks the ulcer healed. I have had two other cases on the nose with the same history and result.

Mrs. R. was sent with diagnosis of epithelioma of scalp or possibly lupus; mother of eight children, youngest 12 years; good social position; no specific history. The lesion was of that character in which it was impossible to state the pathology positively. Under iodid of potash the lesion healed in three weeks.

I have seen several cases diagnosed as carcinoma of the tongue heal under iodid. In fact, I believe we should make it a rule, before operating on these small ulcerations of skin and mucous membrane, to give the patient the benefit of the doubt and put him or her on a thorough course of iodids.

We will sometimes make the mistake of confounding some other lesion with syphilis. As an example, I recall a case of a man of 50, with palmar syphilide, history of syphilis, and an ulceration of the finger, the size of a copper cent, of one year's standing. The diagnosis was positively syphilis. A long course of iodids gave no benefit. I removed a section and Prof. L. Hektoen found carcinoma, which we believed began on a syphilitic base.

Syphilitic lesions of the nose and palate are common. I refer to them here because I have met with several unusual cases. One was sent by a rhinologist, with destruction of cartilage and bone; no syphilitic history, course of iodids 8-grain doses producing no benefit. On increasing to 70-grain doses, the lesion healed. A second case, positively pronounced by rhinologists as non-specific; no specific history; mercury produced no effect; lesion healed under 300 grains a day. A third case: I removed the greater part of the superior maxilla for a dentist; no specific history; wound became indurated and disease began to invade other jaw. Iodid in 40-grain doses produced a cure.

Cases of suppuration of lymphatic glands, where a specific history is denied, are often due to syphilis. As an example, a business man of 40, with bubo in groin, positively denied venereal disease. The pus was evacuated; sterile; wound healed slowly. I discovered a small ulceration on the nasal septum; put him on iodid; bubo and ulceration of nose healed rapidly. He then confessed to having had syphilis twelve years before.

The subject of large gummata which are mistaken

for malignant tumors forms a most interesting chapter of unusual syphilis. Esmarch has written extensively on this point, but the value of his work is not widely known. As types:

CASE 1.—A tumor of the breast was diagnosed carcinoma. Amputation of breast was done. A years later a similar tumor appeared on opposite breast; glands in the axilla enlarged; noticed, by accident, a palmar syphilitic. Under large doses of iodid the tumor in the breast disappeared. Evidently the first tumor was also specific.

CASE 2.—A man of 40 was sent by Dr. Frankenthal with a tumor in the thigh the size of a fist; malignant in appearance; diagnosis probable sarcoma, no specific history; removed section and found granuloma. Under iodid the tumor disappeared. The patient later acknowledged a specific history.

CASE 3.—A man of 43 presented a tumor in the breast; no specific history; diagnosed sarcoma, which was removed; wound healed, but became indurated. Iodid in large doses; induration melted away, and the patient then acknowledged a specific history.

Gummata mistaken for a variety of lesions form a mixed class. As examples:

CASE 1.—A patient of 30, male, married three years, and two healthy children; no specific history; enlarged testicle; suppurative; ulceration of scrotum; removal of the testicle and infected skin; diagnosis, tuberculosis. The wound healed. Later there were two hard masses in the penis the size of walnuts; surgeon desired to amputate penis. I removed a section of granulation tissue, put the patient on iodid and the lesion melted away; patient cured, but still denies syphilis.

CASE 2.—Medicolegal case. A brakeman, in a railroad accident, received an injury to the shoulder; paralysis of sternocleidomastoid and trapezius; threatens to sue company; sent to me for examination and report. I found a gumma in the sternocleidomastoid along the course of the spinal accessory nerve. The patient at first denied syphilis. Under iodid the gumma melted away, and with it the lawsuit and paralysis disappeared.

CASE 3.—A man of 50; pain over gall-bladder; small mass palpable; diagnosis, gall-bladder lesion or carcinoma of liver. On making an exploratory laparotomy I found what I believed to be a gumma of the liver. The patient is still under treatment.

CASE 4.—A patient under mercurial treatment for syphilis developed pain over liver; jaundice. The jaundice disappeared under large doses of iodid; probably obstructive jaundice due to gumma.

I will pass over unusual forms of syphilis of the stomach, small intestines, and colon, of which I believe I have seen examples, because of lack of positive evidence.

The so-called syphilitic stricture of the rectum is unusual only to the men who are not familiar with its frequency. Although these so-called syphilitic strictures are usually due to gonorrhoea, true syphilitic strictures occur; I have one case of syphilis of the kidney to report:

A man at St. Elizabeth's Hospital, seen for Dr. Futterer, presented a large kidney mass; explored; greatly thickened edematous capsule, both fibrous and fatty; nothing in the pelvis; two masses in the capsule which Dr. Futterer, from gross appearance, regarded as tubercular. The patient recovered from operation shortly after; admitted syphilitic history. He was put on iodid, and the kidney mass melted away; patient now well. I believe it was a syphilitic lesion of the kidney.

In order to be brief, I shall omit in my discussion any

cases of unusual syphilis of the heart and blood-vessels, but shall hope that cases of this class will be presented by our internists.

The last class of cases which I desire to present comprises cases of unusual syphilis of bone and joints. The relation of syphilis to fractures can be well shown by three cases.

CASE 1.—A man of 24, under treatment for syphilis, has a gumma on the right humerus. On boarding a street-car he feels something give way in the arm and the arm falls helpless to his side. Examination reveals no new point of motion; some swelling; no deformity; no crepitus. The X-ray shows complete fracture of the humerus without displacement. Spontaneous fracture or fracture from muscular contraction is one of the results of syphilis.

CASE 2.—A man of 25 had fracture of both bones of the leg; delayed union; at the end of three months he confided to his surgeon that shortly before being injured he had secondary syphilis. At once placed on constitutional mixed treatment, union rapidly followed.

CASE 3.—Inherited syphilis of both bones of leg; bent at right angle. I believe the case to be one of late rickets; operated; straightened limb; no union. The patient returned after several months, I operated again, and placed him on iodid and mercury. Rapid bony union followed.

CASE 4.—An unusual case of double mastoid disease, operated on at interval of six weeks between; was slow in healing; patient admitted syphilis; iodids given; rapid recovery.

I have seen cases of joint syphilis mistaken for tuberculosis and gonorrhoeal rheumatism. I shall cite but one instructive case.

A man of 23, a large, strong, robust fellow, with carious disease of the left wrist-joint was treated by iodoform injections and resection; not cured. I believed the case to be tubercular and amputated. Later a large gumma of the arm on same side, and a deep ulceration on the skin of the face appeared. He previously denied syphilis, but now admitted it. Under iodid treatment the lesions disappeared. I have no doubt but that the wrist lesion was syphilitic.

Before closing this rapid and incomplete sketch, which is meant simply as an introduction to a general discussion by the members of the Association, let me call the attention of the Association to the fact which has impressed me more and more as I accumulate experience in the use of iodid of potash in syphilis, and it is this: The fact that a granulation melts away under iodid does not prove absolutely that it is syphilitic. Why? Because we now know that at least one other form of granulation tissue is often similarly absorbed—i. e., actinomycosis, and I had a few months ago under observation a case of blastomycetic dermatitis which undoubtedly disappeared in part under iodid.

RECENTLY the Duke of Westminster's horse, Flying Fox, won the Eclipse stakes at Sandown Park, England, the purse being £10,000—\$50,000. Thus far this item is not in the least medical or of interest to our readers, but when we state that the Duke turned over the whole amount to the Royal Alexandra Hospital, Rhyl, Wales, it becomes most interesting from a medical standpoint. The *Lancet*, from which we get our information, commends this excellent example to other owners of fast horses who race for love of the sport and not for "filthy lucre."

Correspondence.

Muscae Volitantes.

LAFAYETTE, Ind., July 24, 1899.

To the Editor.—I have been very much interested in the recent articles in the JOURNAL on the seeing of the blood-corpuses in one's own retina. So far as I am concerned it has not only never been a difficult matter for me to see them, but has been a very difficult matter in microscopic work to keep the field free from them. To see them best, it is well to prepare a slide with blood for comparison. Any good microscope stand with "B" eye-piece and $\frac{1}{4}$ -inch objective may be used. Focus the instrument on the slide, to get the idea of the size and appearance of the corpuscles, then draw the tube back by the coarse adjustment until the focus is lost, when the blood-corpuses will be seen traveling across the field exactly like the corpuscles in the capillaries of the frog's foot in that well-known experiment. A bright artificial light is best, and a blue glass placed over the eye-piece as an advantage, but by no means necessary. If the tube be drawn back till the objective is at a distance of one or two inches above the table of the instrument, and the eye held very close to the eye-piece, a very much enlarged image of a small portion of the retina will be seen; the corpuscles can be seen moving, but not so distinctly as in the first method.

Any reader of the JOURNAL who has a microscope can study this new field with great profit. The blue glass used, as recommended by Dr. Norton, is an advantage, but I find no difficulty in seeing the corpuscles with the naked eye in looking at a clear blue sky.

W. H. PETERS, M.D.

Plea for Both the Tuberculous and the General Public.

FORT HUACHUCA, N. M., July 15, 1899.

To the Editor.—At last, after years of neglect, the great army of sufferers from the deadly "white plague" have had something in the way of legislation done in their behalf. All praise to the New York Legislature for taking the initial step in appropriating the money for the erection of a sanatorium in the Adirondack Mountains, for the treatment of pulmonary tuberculosis. Equally as praiseworthy was the act of the Government in turning over to the marine-hospital service, Fort Stanton, N. M., for a similar purpose. The work of turning it into a modern sanatorium is now being done, and when completed it will be used for the treatment of tuberculous sailors and marines. And if reports are true, Surgeon-General Sternberg has recently selected Fort Bayard, N. M., as a site for a similar institution where the tuberculous soldiers will be treated.

Why the tuberculous have been so long neglected and left not only to face certain death, but also to menace the health of all those around them, when a large percentage can be cured by the sanatoria method of treatment, which at the same time removes all danger to the public, is beyond all comprehension. That the example set by the New York Legislature should be followed by every state in the Union there can be no doubt.

The blind, the feeble-minded, the epileptic and the insane are being cared for by the states, and why not the tuberculous, when a large percentage, who otherwise must die, can be saved, and at the same time the general public protected from its most dangerous foe?

Tuberculosis can be cured in any climate by the sanatoria method of treatment, but the more suitable the climate the greater will be the percentage of cures. A great number have been cured in the Adirondack Mountains, and the same can be said of the mountains of North Carolina, but hardly any other part of the United States, except the Southwest, offers the suitable climatic conditions for the successful treatment of pulmonary tuberculosis. In the Southwest, namely, Arizona,

New Mexico, northwestern Texas, and Colorado, are to be found all the climatic conditions having a curative influence on tuberculosis, viz., a maximum amount of sunshine, a pure dry atmosphere, altitude and a porous soil. Land is cheap and favorable sites for sanatoria are to be found in abundance in this section. Now, why wouldn't it be feasible for states having unfavorable climates for the successful treatment of tuberculosis to secure land in the above-mentioned section and erect thereon sanatoria for their tuberculous, instead of within their own borders? Would not the greater number of lives saved, the greater number of otherwise hopeless invalids returned to the producing class, the greater security from infection by this plan more than pay the additional expense it would incur?

The tuberculosis craze is abroad, not only throughout the land, but throughout the world, and now seems an auspicious time for the profession to urge proper legislation. When the general public becomes educated to the fact that tuberculosis is a contagious and a preventable disease; when the different states provide sanatoria for their tuberculous; when the general practitioner learns to diagnose incipient tuberculosis, and becomes honest enough to tell his patients their true condition and advises them to go where they will have the best chance of recovering, then and then only will we be able to successfully contend with the greatest destroyer of mankind.

ARCH. DIXON, JR., M.D.

Exstrophy of Bladder. Correction.

INDIANAPOLIS, Ind., July 29, 1899.

To the Editor.—My discussion of Dr. Allen's paper on "Exstrophy of the Bladder," as printed in the JOURNAL of July 19, is somewhat garbled. I did not make bold to say: "It is not rational to make the operation of intestinal implantation," but did say that under certain conditions Maydl's brilliant operation, as successfully executed for the first time in America by Dr. Allen of Cleveland, might be contra-indicated. All agree that the operation of intestinal implantation of ureters should not be practiced if the kidneys are unsound.

In the case which came under the writer's observation there was on the left side a pyonephrosis, and on the right a chronic nephritis. The patient was exsanguinated and could hardly have borne such an heroic operation as that of Maydl. Therefore a method much less dangerous and requiring less exquisite skill for its performance, namely, the method of Sonnenberg, was selected.

I prefer not to go on record as one who, having realized the beggarly results of Sonnenberg's operation, would criticize the great work of Dr. Allen, to whom we all should unstintingly give honor.

Very sincerely yours,

J. RILUS EASTMAN, M.D.

A National Board of Health.

MINNEAPOLIS, Minn., July 28, 1899.

To the Editor.—An editorial in the JOURNAL (July 22, p. 234), speaking of a national department of health, refers to the endorsement of such by several medical bodies—the American Public Health Association, the AMERICAN MEDICAL ASSOCIATION, and the Conference of State Boards of Health. In connection with the latter association, it said "recommended with practical unanimity—three delegates not voting." This is a misrepresentation. The question brought to a vote at the Conference at Richmond was not, "Shall we have a national board of health?" but "Shall we endorse the Spooner bill?" Quite a different proposition. I was one of those who put myself on record as not voting, for the motion was so worded that one voting in the negative was made to appear to be voting against a national board of health. I was not willing to vote to endorse the Spooner bill. At the same time, I was not willing to appear to be voting against a national board of health;

hence the request to be recorded as *not voting*. Two others did the same, and I presume for the same reason.

From the editorial it would also seem that the National Conference vote was strongly affirmative, for the term is used, "with practical unanimity." As a matter of fact, there were probably not more than twenty voters in the room when an endorsement of the Spooner bill was called for. With a *viva voce* vote, it is hard to judge how many votes were cast in the affirmative. The few keeping silent or voting in the negative added to the three "not voting" does not leave "practical unanimity."

The Spooner bill is meant to please those who insist on state rights in quarantine, as against national rights.

We should have a national board of health established on as firm a foundation as is the army, the navy and marine-hospital service. The Spooner bill will never give such an organization.

Respectfully,

H. M. BRACKEN, M.D.

Breech Presentations.

ELGIN, Ill., July 30, 1899.

To the Editor—I have just attended a German woman in her fifth confinement. The presentation was a breech, as was the case in her former confinements. Having never heard of another case of five successive breech presentations in one woman, I take the liberty of reporting this to you for publication. The children were all boys, and three are living. Two died during delivery.

EDWARD H. ABBOTT, M.D.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Journal of Obstetrics, July.

- 1.—Conservative Gynecology. Jos. Taber Johnson.
- 2.—"F" Sloughing Process at the Child's Navel Consistent with Asepsis in Childbed? Robert L. Dickinson.
- 3.—Some Observations on the Early Use of Purgatives after Abdominal Section. Otto G. Ramsay.
- 4.—Role of Wound Infection as a Factor in Causation of Insanity. A. T. Hobbs.
- 5.—Remote Result of Shortening Round Ligaments and Hysteropexy by Vaginal Section. Henry T. Byford.
- 6.—Maternal Impressions. Henry F. Lewis.
- 7.—Vaginal Celiotomy, with Report of Eleven Cases. A. Laphora Smith.

Annals of Gynecology and Pediatrics (Boston), July.

- 8.—Disorders of the Menopause. E. W. Cushing.
- 9.—Remarkable Result from Use of Antistreptococcal Serum. A. G. Beardorf.
- 10.—Diphtheria—with Some Notes on the Modern Serumtherapy. W. F. Matson.
- 11.—Therapeutics of Whooping Cough. F. J. Taylor.

Bulletin of Johns Hopkins Hospital, June.

- 12.—Duties and Dangers of Organization in the Nursing Profession. Geo. M. Gould.
- 13.—Pin in Vermiform Appendix. James F. Mitchell.
- 14.—Presence of Typhoid Bacilli in Urines of Typhoid Fever Patients. Norman B. Gwyn.
- 15.—Case of General Infection by Diplococcus Intracellularis of Weichselbaum. N. B. Gwyn.

Western Medical Review (Lincoln, Neb.), July 15.

- 16.—Criminal Abortion. Henry T. Byford.
- 17.—Reflexes as an Aid in Diagnosis. J. M. Aikin.
- 18.—Report of Some Suppurative Cases. J. T. Miller.
- 19.—Relations of Certain Neuroses to Pelvic and Genital Diseases of Women. H. G. Wetherill.
- 20.—Plea for Tenotomy as a Preliminary to Amputation. Byron B. Davis.
- 21.—Hydrophobia. S. E. Cook.
- 22.—Some Surgical Cases. J. W. Bullard.
- 23.—Retrospect of Forty Years in Practice of Medicine and Surgery. Geo. W. Wilson.
- 24.—Organotherapy. P. E. Koerber.

Annals of Otol., Rhin. and Laryngology (St. Louis), May.

- 25.—Presidential Address before American Laryngological, Rhinological and Otolological Society, 1899. S. E. Solly.
- 26.—Facial Nerve in its Relations to the Aurist. Geo. L. Richards.
- 27.—Use of Rubber Splints in Treatment following Intranasal Operations. J. Price Brown.
- 28.—Removal of Tonsil and Adenoid Followed by Fatal Result. J. A. Stucky.

- 29.—Question of Posticus Paralysis, Part II, and the Innervation of the Larynx During Breathing. A. Kuttner and J. Katzenstein.

Archives of Ophthalmology (N. Y.), May.

- 30.—Case of Paralysis of Divergence; its Bearing on the Theory of Squint and Heterophoria. Alexander Duane.
- 31.—Further Contribution to Extraction of Particles of Steel or Iron with Haab's Large Electromagnet. A. Barkan.
- 32.—Buliet Wound through Head with Loss of Right Eye and Vision Much Impaired in Left. J. H. Delany.
- 33.—Use of Extract of Suprarenal Capsule in Diseases of the Eye. W. H. Bates.
- 34.—Concerning Bacteriology of Acute Catarrhal Conjunctivitis. C. A. Veasey.
- 35.—Injection of Weak Sterile Salt Solution into Collapsed Eyes. Herman Knapp.
- 36.—Note on Use of Euphthalmia. Herman Knapp.
- 37.—Nerves of the Human Lid. Ludwig Bach.
- 38.—Corneal and Scleral Nerves as Shown by Golgi-Cajal's Osmium Bichromate Silver Method. Ludwig Bach.
- 39.—Description of Portable Electromagnet, an Original Device to be Used in Connection with any Incandescent Electric-Light Current for Removal of Pieces of Steel from Interior of Eyeball. W. B. Johnson.

International Medical Flagazine (N. Y.), July.

- 41.—Recent Inquiries Concerning Blood Changes Induced by Altitude. S. E. Solly.
- 42.—Laboratory as an aid in Diagnosis and Treatment of Diseases of the Stomach. A. Robin.
- 43.—Late Consecutive Oropharyngeal Syphilis. Lewis S. Somers.
- 44.—Most Important Requisites to Correct Diagnosis in Chronic Disease. Boardman Reed.
- 45.—Present Day Requirements in Management of Pregnant Women. E. A. Ayers.
- 46.—Syphilis—The Chancre. J. D. Thomas.
- 47.—Functional Disturbances of Ocular Muscles. Part III. Treatment. W. L. Fyfe.
- 48.—Summer Complaint. J. Madison Taylor.

Pacific Medical Journal (San Francisco), July.

- 49.—Address to Students of College of P. & S. A. C. Girard.
- 50.—Lecture. M. H. Simons.
- 51.—Patholosis, with some Cases. C. F. Buckley.
- 52.—Division of Abdominal Incision a Week after Suprapubic Hysterectomy for Fibroid of the Uterus. Henry Krentzmann.
- 53.—Experimental Researches with Vita Auranti (Haber). Louis Gross.

Denver Medical Times, July.

- 54.—Medical Efficacy of Nosophen and Antinoin in Eye, Ear, Nose and Throat Affections. James A. Lyndon.
- 55.—Plea for Psychic Realism. James Weir, Jr.
- 56.—Treatment of Puerperal Phlegmasia Alba Dolens. T. Mitchell Beards.

- 57.—Is an Absolute Condemnation of Alcohol Just? Albert Berneheim.

Kansas City Medical Record, July.

- 58.—Some Remarks on Cerebrospinal Meningitis. J. Block.
- 59.—Importance of a Diagnosis of Melancholia in its Incipency, with a Study of Two Cases of Convulsive Form. S. Grover Burnett.
- 60.—Chronic Lacunar Tonsillitis. Chas. E. Clark.

Am. Journal of Surgery and Gynecology (St. Louis), June.

- 61.—Ophthalmologic Surgery in the Country, with Special Reference to Acute Ulcer of Cornea. John Fes.
- 62.—Successful Removal of Piece of Wood Imbedded in Brain Thirty-two Years, without Impairment of Cerebral Function—Knife-Blade in Brain, Removal, Death. Z. H. Evans.
- 63.—Electricity in Gynecologic Practice. J. A. Gracey.
- 64.—"That First Hysterectomy." R. E. Haughton.
- 65.—Division of Fee from Standpoint of Country Doctor. Finis Purdue.
- 66.—Trouble with Vulva Papillomatosa—a Freak. H. D. Fair.
- 67.—Case of Infantile Menstruation. G. A. McBride.
- 68.—Criminal Abortion. Elizabeth McIntyre.
- 69.—Treatment of Carbuncles. M. P. Creel.
- 70.—Uses and Effects of Gude's Manganiferous Iron Peptone in Gynecology. Julius Heitzmann.

Medical and Surgical Bulletin (Nashville, Tenn.), July.

- 71.—Injuries to the Floor and their Consequences. M. C. McGannon.
- 72.—Women's Medical Journal (Toledo, Ohio), July.
- 73.—Woman Physician in Official Positions. Elizabeth F. Kearney.
- 74.—Women and the Professions. John W. Millon.
- 75.—Operation for Webbed Fingers. Anna M. Braunwarth.
- 76.—A Missed (?) Abortion. Report of Case. Eliza J. Hyndman.

Cleveland Medical Gazette, June.

- 76.—Something About Phagocytes. D. N. Kinsman.
- 77.—Disinfection of Railway Coaches and Street Cars Operating in Ohio. Frank Warner.
- 78.—Observations on Use of Antioxin in Treatment of Diphtheria, based on Experience with Sixty-nine Cases. M. A. Albl.
- 79.—Device for Washing out Pelvis of Kidney Through Ureter. L. B. Tuckerman.
- 80.—Instrument for Direct Cystoscopy in the Male, and for Posterior Uthreoscopy. L. B. Tuckerman.

Medical Fortnightly (St. Louis), July 15.

- 81.—Physiology. A. L. Benedict.
- 82.—Vesicular Degeneration of the Chorion. Carl E. Black.
- 83.—Medical Age (Detroit, Mich.), July 10.
- 83.—Acute Catarrh of Middle Ear as a Sequel of la Grippe. S. W. Smith.

- 84.—*Deformities Illustrated.* Daniel La Ferté.
- Columbus Medical Journal, July 5.**
- 85.—*Treatment of Fractures of Patella.* W. J. Means.
- 86.—*Pneumonia in Children.* W. J. Mackey.
- 87.—*Northwestern Lancet (St. Paul), July 1.*
- 88.—President's Address, N. D. Medical Society. F. R. Smyth.
- 89.—Medical Federation. F. A. Dunsmoor.
- 90.—Abdominal Hysterectomy in Treatment of Malignant Diseases of Uterus. J. L. Rothrock.
- 91.—*Plea for better Disinfection in Typhoid Fever.* F. B. Miner.
- 92.—*Probing the Nasal Duct.* J. H. Rindlaub.
- Medical Record (N. Y.), July 29.**
- 93.—*Report of Two Cases of Prostatic Hypertrophy Benefited by the Bottini Operation, with a Few Comments and Suggestions.* Ramon Gutiérrez.
- 94.—*Nephro-Ureterectomy for Traumatic Hemato-Hydro-Nephro-Ureterosis.* John E. Summers, Jr.
- 95.—*Fracture of Inferior Maxilla.* Henry L. O'Brien.
- 96.—*Method of Maintaining Approximation after Colles' Fracture, by Short Lateral Splints without Pressure on Tendons or Interference with the Circulation.* A. E. Rockey.
- 97.—*Comparative Chest Measurements.* H. M. Lee.
- 98.—*Case of Complete External Dislocation of the Patella.* J. E. Courtney.
- 99.—*Case of Tetanus Treated with Antitoxin.* A. de Yoanna.
- New York Medical Journal, July 29.**
- 100.—*Cerebral Abscess in Child Three Months Old, complicated with Erysipelas of Head and Face. Operation. Recovery. Cursory Consideration of Diagnostic Value of Symptoms.* William J. Doyle.
- 101.—*Modern Therapy of Tympanic Cavity.* M. A. Goldstein.
- 102.—*Anesthesia: Nitrous Oxid; Ether; Chloroform.* S. Ormond Goldman.
- 103.—*Old Types of Diseases.* F. Savary Peckey.
- 104.—*Report of Two Cases of Typhoid Infection without any Intestinal Lesions.* August Jerome Lartigau.
- 105.—*Early Recognition and Management of Malignant Disease of Digestive System.* Max Einhorn.
- Cincinnati Lancet-Clinic, July 29.**
- 106.—*Random Observations.* F. O. Marsh.
- 107.—*Vagaries in Tuberculosis.* H. H. Spiers.
- Medical Review (St. Louis, Mo.), July 29.**
- 108.—*Further Contribution in regard to Temporary Glycosuria in Connection with Cerebral Hemorrhage.* R. B. H. Gradwohl.
- Medical News (N. Y.), July 29.**
- 109.—*Constipation Considered from Standpoint of Proctologist.* A. B. Cooke.
- 110.—*Asthenopic Symptoms and Headache Caused by More Common Forms of Intra-ocular Disease.* Carolus M. Cobb.
- 111.—*Intra-ocular Route in Surgery of Uterus and its Adnexa.* William D. W. Prentiss.
- 112.—*Serum-Treatment and its Results.* Hermann M. Biggs.
- Boston Medical and Surgical Journal, July 27.**
- 113.—*Not the Disease Only but Also the Man.* The Shattuck Lecture. James J. Putnam.
- 114.—*Case of Septicæmia Treated with Normal Salt Solution.* Carroll E. Edson.
- Philadelphia Medical Journal, July 22 and 29.**
- 115.—*Acromegaly.* William Nicholas Lackey.
- 116.—*First-Aid Package in Military Surgery.* N. Senn.
- 117.—*Concerning Corporcular Phosés and Aphosés.* George M. Gould.
- 118.—*Report of Case of Abscess Posterior to Appendix, Discharging Through Umbilicus, Refilling and Causing Perityphilitis and General Peritonitis.* Samuel H. Friend.
- 119.—*Horseshoe-Kidney.* J. E. Hills.
- 120.—*Mechanic Laxative Taken by Mouth.* Henry S. Upson.
- 121.—*Pictorial Demonstration of New Method for Ballooning the Rectum and for Removal of Foreign Bodies from Anus and Rectum without Anesthesia.* Thos. Chas. Martin.
- 122.—*Irritation-Exostoses of Human Foot.* E. H. Bradford.
- 123.—*Case of Syphilitic Fever, with a Discussion of Diagnosis of Fevers.* D. W. Prentiss.
- 124.—*Treatment of Puerperal Septicæmia by Antistreptococic Serum.* Edwin Rosenthal.
- 125.—*Some Points in Diagnosis of More Common Forms of Nasal Obstructions.* Charles N. Cox.
- 126.—*Angioneurotic Edema.* E. F. Slinger.
- Baltimore Medical Journal (Baltimore), July 29.**
- 127.—*Treatment of Epidemic cerebrospinal Meningitis with Arsenite of Copper.* Louis Kolipinski.

AMERICAN.

- Conservative Gynecology.**—The president's address at the American Gynecological Association, at its late meeting, dwells chiefly on two points: 1, the danger of overlooking early cancer of the uterus and neglecting the essential measures to save the patient, and, 2, the controversy between active and conservative gynecology.
- Best Management of Umbilical Cord.**—Dickinson's article is a very complete review of the literature on the management of the cord, and a plea for the methods which he thinks are best. He believes that infection from the cord is a much more common cause of infant mortality than is gen-

erally appreciated, and that the common practices are not in accord with the best surgical principles. He advocates complete removal of the cord, amputation at the skin margin, and describes the methods of securing the vessels by ligature, suture and pressure. In the first case he exposes the vessels by drawing the sheath and gelatin away from the points of amputation, ligating and cutting them off short. This method is, he claims, much more sure to control bleeding than the common mass ligature usually used. In suturing the vessels the cord is drawn upward and severed through the capillary ring and the vessel seized in an artery clamp. The needle is taken in the right hand and a simple continuous stitch is run across and its ends tied together, or a subcuticular stitch (Kendall Frank) put in place. If it is desired to ligate as well as sew with the same silk, one loop of the stitch sweeps around the artery and the other around the vein. Simple pressure needs hardly to be described, but will require further testing in a long series of cases to see whether it gives rise to any more secondary hemorrhages than the older methods. He reviews the objections to complete primary amputation and thinks that with proper surgical antisepsis they hardly require argument. A rather full bibliography is appended.

- Purgatives after Abdominal Operations.**—In this article Ramsay reports the results of a series of experiments on patients, with the careful use of purgatives after operation, contrasted with a similar series where they were not used. He thinks that the results are sufficiently conclusive to make further argument on the subject of increased danger to the patient following early interference with the bowels unnecessary. His conclusions are: That it is important both for the welfare of the patient and for the comfort of the operator to attend carefully to the diet and to the thorough emptying of the bowels before any abdominal operation; that the bowels should be moved and the distension relieved soon after operation, for the comfort of the patient as well as to avoid possible dangerous complications; that in the simpler groups of operations, such as suspension of the uterus, myomectomies, the removal of uncomplicated ovarian tumors, and in uncomplicated hysterectomies, the administration of the calomel and the use of enemata on the second day is followed by a perfectly satisfactory convalescence; that in cases of beginning peritonitis, in cases where numerous adhesions have been broken up or large raw areas left, in cases where the intestines have been freely handled or long exposed, and finally in emergency operations where no previous preparations can be made, Dr. Byford's method of immediate purgation is indicated.

- Wound Infection in Insanity.**—Hobbs writes on the effects of puerperal injuries on the nervous system and in producing insanity by exciting erysipelatos inflammations and septic poisoning. He claims that in the London (Canada) Asylum they have had in their surgical treatment of such cases 30 to 45 per cent. of recoveries, and improvement in 20 to 25 per cent. He says that the fact that it is evident that septic infection is mainly responsible for these inflammatory conditions, which in turn are responsible for insanity, and the large percentage of these cases that resulted in mental recovery or improvement after removal of the lesions shows how important a factor the micro-organism is in producing mental alienation.

- Shortening Round Ligaments and Hysteropexy by Vaginal Section.**—Byford does not discuss the technic in detail but merely gives the method he has used in thirty-one cases, and calls attention to the results. He combines hysteropexy, or suture of the uterus over the bladder, with shortening of the round ligaments, which he thinks is better than either operation alone. He has followed up his cases as far as possible, and knows of but one recurrence of the retroversion, and two cases in which the uterus sank lower into the pelvis without complete retroversion. In his later cases he has drawn the ligament tighter and sutured the fundus higher over the bladder than in his early ones and has not observed any failure. He reports three cases in detail in which he later opened the peritoneal cavity and one case in which pregnancy went to term after the operation, with good results.

6. See abstract in JOURNAL, May 27, p. 1173.

7. **Vaginal Celiotomy.**—Smith reports eleven cases of vaginal celiotomy, discusses the technic and concludes that the operation is indicated in retroversion with fixation, in mild diseases of the ovaries and tubes, and small fibroids. In his experience, however, the freeing of the retroverted adherent uterus is more difficult by this method, and vaginal fixation not so reliable, in curing retroversion and relapse, as is ventral fixation. If the uterus is movable and there are no adhesions, one is not justified in opening the peritoneal cavity in any attempt to shorten the round ligaments. In such cases Alexander's operation is easy, safe, quick and more reliable. In removing pus tubes the operation by the vagina is more difficult than the abdominal operation, except where the uterus is also to be removed. When the uterus is split in half and each half removed with its corresponding tube, and when clamps are used the vaginal operation is easier than the abdominal with ligature. The vaginal route is a little safer on account of the drainage it affords, but there is more risk of injuring the ureter. Smith does not favor the removal of the uterus, even if both ovaries and tubes have been removed, on account of the bad moral and physical effects, and he dislikes clamps as compared with ligatures, on account of bruising the nerves and consequent prolonging of convalescence. For the removal of chronically inflamed ovaries and tubes, vaginal celiotomy has decided advantages in that it is less dangerous because the intestines are not exposed to handling; it is less painful; there is no telltale scar, and little danger of hernia. Much good conservative work on the ovaries and tubes can be done by the vaginal route without risk or pain to the patient, and he enumerates a number of conservative operations that can be thus performed with advantage. Tubal pregnancy before rupture, not later than the sixth or eighth week, can be readily removed by vaginal celiotomy. This operation, however, is contraindicated when the pregnancy has advanced twelve weeks or has ruptured into the abdomen. In general terms, all cases in which the trouble is small in size and located low down can and should be operated on by vaginal celiotomy, while everything large and high up should be reserved for abdominal section.

8. **Disorders of the Menopause.**—Cushing's paper discusses the various disorders attending the change of life; the circulatory, consisting in hot flashes and hemorrhage; the nervous troubles, such as palpitation, fainting and hysteroneuroses; the psychic disorders, and also the complications incident to the period of life in which this change occurs. Of the latter cancer is the most serious, and he calls attention to the necessity of care, noting all irregular and profuse hemorrhages occurring at this time and the ease of diagnosis of the condition by competent examiners, the comparative safety of the operation and its success as a rule in preventing recurrence. The next most important complications are tumors, fibroids and adenoma, and the endometritis which is liable to occur at this time.

11. **Whooping Cough.**—Taylor summarizes the therapeutics of this disorder as follows: 1. Isolation and disinfection; 2. pure air and warm clothing; 3. keep the patient up to his most perfect standard of vigor, by frequent feeding; 4. palliate by the use of antipyrin, belladonna, and bromids internally, with inhalation of formaldehyde vapor to relieve paroxysms and nervous irritability; codein, tartar emetic, ipecac, and squills for catarrhal condition, and iron, arsenic and strychnin to tone up and strengthen in convalescence.

14. See editorial, page 358.

15. **General Infection by Weichselbaum's Coccus.**—Gwyn reports what he thinks is the first instance recorded of general infection or septicaemia from the diplococcus intracellulularis. The patient was admitted to the Johns Hopkins Hospital, November 4, supposed to be suffering from typhoid fever, and died on the morning of the 6th. The autopsy revealed Weichselbaum's germ in the blood and in the inflamed joints. This throws some light on the arthritic infections of cerebrospinal fever.

19. See abstract in JOURNAL, March 11, p. 545.

20. **Tenotomy as a Preliminary to Amputation.**—Remarking first on the difficulty in muscular subjects in performing amputations, on account of the tendency of uneven con-

traction of the muscles, thus making an uneven stump, Davis pleads for a preliminary performance of tenotomy. He has not attempted to study the subject historically. Dawbarn's suggestion to cut the ham strings before amputation of the hip-joint is the first with which he is conversant. His experience is not extended to over a dozen cases, but it has been sufficient to make him view the procedure with great favor. He believes, in addition to the great ease of the operation and the improved appearance of the stump, that painful stump and conical stump would be less frequently met with. In cutting the tendons it is important to avoid dividing the large nerve trunks. If this rule is followed the nerves will draw well up above the cut stump of the muscles, and can be disregarded, as they will be out of danger of being imprisoned in cicatricial tissue.

25. **President's Address.**—The points made in Dr. Solly's presidential address are the relation of nasal disorders to tuberculosis, as observed by him in his practice. He disagrees entirely with Dr. Ingals' deductions that disease of the upper air-passages has a deterrent influence on pulmonary tuberculosis, and is inclined to believe with Dr. Freudenthal that in many cases the bacillus finds the readiest point of entrance in the nasopharynx behind the nasal obstruction. The facts and theories appear to him to indicate the importance of treating the respiratory tract as a whole.

26. See abstract in JOURNAL, June 24, p. 1440.

27. *Ibid.*

30. **Paralysis of Divergence.**—After reporting a case, Daune enters on a thorough discussion of the theories of periodic squint, and of divergence and its anomalies, and explains the pathogenesis as follows: Exophoria and divergent squint may be due to: 1. Underaction of an adduction—insufficiency in the true sense of the word—or overaction of the abductor, due to abnormalities in structure, insertion or innervation—muscular squint or exophoria; not very frequent by itself, but frequent as a complication. 2. Overaction of the diverging power—divergence-excess; fairly common. 3. Underaction of convergence—convergence-insufficiency; very frequent; may be either accommodative (in myopes) or non-accommodative. 4. One or more of the above anomalies combined—mixed conditions. Such a combination usually obtains in long-standing and marked cases of concomitant divergent squint. Esophoria and convergent squint may be due to: 1. Underaction of the abductor—true insufficiency—or overaction of the abductor, due to abnormalities in structure, insertion, or innervation—muscular squint or esophoria; not very common by itself but frequent as a complication. 2. Overaction of convergence—convergence-excess; very frequent; may be either accommodative (in hypermetropes) or non-accommodative. 3. Underaction of the diverging power—divergence-insufficiency; rare. 4. One or more of the above causes combined—mixed conditions. Such a combination usually obtains in long-standing and marked cases of concomitant squint. It is by following an etiologic classification like this that we attain the best success in both diagnosis and treatment.

31. **Haab's Electromagnet.**—Burkan reports 7 cases of extraction of particles of iron and steel from the eyeball, with Haab's large electromagnet, and sums up the results in these and in 5 cases previously reported: 3 eyes had to be removed on account of panophthalmitis, which in two cases had certainly set in immediately after the injury. In those cases the magnet did good work but against impossible odds. Eight eyeballs have been saved, 4 with very good and 4 with partial vision. One man died of delirium tremens. He has found it advisable to always enlarge the wound previous to extraction, in order to facilitate the exit of the foreign body. A meridional sclerotic section might be advantageously tried in cases of perforation of foreign bodies into the vitreous. Haab's magnet does all that the hand magnet will do, and more, but must be used guardedly. Compared with the latter it avoids destruction of the vitreous and diminishes danger of infection. It is a good and safe sidescopie.

33. **Suprarenal Extracts in Ophthalmia.**—Bates finds that suprarenal extract is a powerful astringent, having a strong effect on local and general circulation. He describes the methods of preparation of the aqueous solution, its chemical and physiologic properties, so far as known, and gives the

details of a number of cases in which it was used in ophthalmic practice. He thinks it is an astringent of great value, and during the five years he has used it he has seen no disagreeable effects. Within the limits of its sphere of activity, no other substance can take its place.

34. **Bacteriology of Conjunctivitis.**—The conclusions of Veasy's paper are as follows: It would seem that for Philadelphia and the immediate vicinity, by far the most frequent cause of acute catarrhal conjunctivitis is the pneumococcus of Fraenkel; that occasionally it is produced by the Koch-Weeks' bacillus, and that the clinical manifestations of both are so similar in severe cases that it is practically impossible to distinguish between them without a bacteriologic examination; that the experiments of Gifford showing the contagious character and its reproduction with anaerobic cultures have been fully corroborated; that it has also been reproduced by the writer with a pure aerobic culture; that it is a disease met with more frequently in young adults, but apparently may occur at any age.

35. **Sterile Salt Solution Injected into Weak Eyes.**—Knapp reports three cases in which he used physiologic salt solutions to replace the eye fluids, and concludes as follows: According to the foregoing observations and experiences, I believe I am justified in recommending the injection of a sterile physiologic salt solution—or any other sterile and indifferent liquid, for instance, boric acid solution—into the eye with a small syringe under the following conditions: 1. When from lack of vitality in old age or any other cause the cornea sinks in so that the eye collapses in such a way as to prevent the wound from closing exactly, a liquid should be injected until the globe has resumed its shape and the lips of the wound apply correctly. 2. Not only remnants of cataract, but also cholesterol and other heterogeneous substances, including perhaps some movable foreign bodies, may be syringed out of the eye with impunity and success. 3. When during the extraction of a complicated cataract the fluid vitreous escapes in such a quantity that the eyeball collapses either totally or in such a degree as to prevent the closure of the wound, liquid should be injected to refill the globe and make the wound close. 4. When from an operation or an injury the eye collapses, injection of a sterile indifferent liquid may restore the shape of the globe, facilitate the closure of the wound, and ward off infection from the entrance of conjunctival secretion into the eye. The above histories demonstrate that eyes whose chances of recovery are unfavorable may be saved by intraocular injection,—saved, I am inclined to believe, in a greater percentage than if such treatment were omitted.

36. **Euphthalmia.**—According to Knapp, euphthalmia in 10 per cent. solution is without a rival as an aid for ophthalmoscopic examination. As a cycloplegic it does not compare with sulphate of atropia and is even more unobtrusive than homatropin. It does not irritate the conjunctiva or the skin, and he recommends it for routine use to dilate the pupil in ophthalmoscopy.

37. **Holocain.**—After using it for more than a year, Knapp, thus states his experience with holocain: 1. It is as powerful a local anesthetic as cocaine, over which it has several marked advantages, in that it acts (1 per cent. solution) in much shorter time, one-third to 1 minute, and it does not interfere with circulation. It does not dry the cornea as much as cocaine. For the removal of foreign bodies it is an ideal anesthetic. It does not suck in germs that may have contaminated the foreign body. Cocaine is an anesthetic, but not a remedy, while holocain has a good influence in septic ulcers of the cornea, though he has not observed its action in this regard to such an extent as stated by Derby.

41. **Blood Changes Induced by Altitude.**—Solly first reviews the statements and theories in regard to blood changes induced by altitude, and concludes that the theory of regeneration of the blood cells proposed by Miescher, Egger and others is the correct one, being supported by the recent work of Schaumann and Rosenquist, of whose experiments he gives an account, also by those of Herrera and Lope. He briefly states some of his own experiments made in Colorado, which also support this view, and suggests that the members of the Climatological Association could aid materially in this problem by having blood examinations made of their patients or of per-

sons in normal health who will co-operate, before and after leaving sea level to try the climate of our interior plateaus. The effect on the blood, in visiting the sea shore and desert regions of moderate elevation, would also be a good subject of inquiry.

42. **The Laboratory in Stomach Diseases.**—Robin dwells on the value of chemical analysis in the diagnosis of stomach disorders, and believes the biochemical laboratory is of the greatest value in these affections.

49. **Address.**—Girard presents some thoughts concerning the recent war.

50. **Lecture.**—Simons' remarks concern The Naval Medical Corps, its duties and experience in the late war.

51. **Patholesia.**—The title of this article is a new name devised by Buckley to cover the same ground as the popularly used term, "hysteria." He offers it as a needed substitute for the older term, and as indicating etymologically the condition, a disorder of the will.

54. See abstract in JOURNAL, June 24, p. 1448.

57. **Alcohol.**—This article is a plea for the use of alcohol in medicine, and a defense, practically, of its use as a beverage, though this is not professed. The author, however, gives his conclusions as follows: Alcohol, used discriminately, at the right place and at the right time, is beneficial. Alcohol, used habitually and quite particularly in large quantities, is noxious. Alcoholic beverages are the more dangerous the worse they are, the more adulterated they are, consequently only the purest beer, the purest wine, the purest whisky is that which we should use, if we use it at all.

58. **Cerebrospinal Meningitis.**—Block's paper reports some clinical histories which he credits to cerebrospinal meningitis, and which, in his opinion, is due to the same micrococcus as pneumonia.

59. **Melancholia.**—Burnett reports two cases of melancholia attended with convulsive attacks, and refers to Clouston's description of this form of the disease. He believes that an early diagnosis of melancholia with immediate private care will almost insure a recovery.

62. **Piece of Wood in the Brain.**—Evans reports the case of a man who received a wound in the face during the Civil War, in 1862, which healed up; and who finished his term of service in the army without serious inconvenience. A year before his call on the doctor he received a blow in the face by a falling plank, in exactly the spot of the former injury. This produced an abscess, which was opened, but as the discharge continued, he came to the doctor. In probing the wound, dead bone was found, and by the free use of cocaine the ethmoidal cells and the floor of the skull were opened up, exposing the dura, which was swollen and exuded pus through a small opening. A small probe was passed, coming in contact with a hard substance which was removed by a Pean's forceps. It turned out to be a piece of pine wood measuring $1\frac{1}{2}$ inches in length and one-third of an inch in thickness, imbedded in the brain substance. Hemorrhage was severe but was controlled by packing the cavity with gauze, which was removed in twenty-four hours and the wound flushed with warm water. In a few days the cavity contracted and the flow of pus ceased. Thirteen days later the patient was seized with partial paralysis affecting the same side of the body from which the piece of wood was removed, also paraparesis and melancholia. He has since recovered from the paralysis. The duration of time in which the wood was left in the brain was thirty-two years. Evans also reports a case of extraction of a knife blade from the left frontal lobe, which had been imbedded eighteen months. Death followed removal, in eight days.

64. **That "First Hysterectomy."**—Haughton's article is a defense of his claim of having performed the first hysterectomy in the state of Indiana, which had been criticized by Dr. Mary E. Dixon Jones.

69. Published also in N. E. Med. Monthly, July. See JOURNAL, July 15, title No. 50, p. 150.

83. **Catarrh of Middle Ear, From Influenza.**—In this paper Smith treats of otitis media as a complication of influenza, calling attention to its importance, the dangers of its neglect and the method of early and timely treatment. He reports four cases illustrating his views. He believes a large

percentage of these cases might be cut short or aborted by local depletion or a little active purgation, if seen at the onset of the disease.

84. **Deformity.**—LaFerté's paper describes and illustrates a number of cases of deformity relieved by operation.

85. **Fractures of Patella.**—After general remarks on the treatment of patellar fracture, Means briefly reports six cases, some of them treated by non-operative methods and others by opening of the joint and suturing the parts, and concludes as follows: The results of non-operative methods are unsatisfactory, both as to long confinement and functional disability. The methods of maintaining apposition of the fragments by external appliances are unsatisfactory and unscientific. In open arthrotomy the fragments can be carefully approximated and sutured in such a manner as will maintain apposition and, ultimately, bony union. The operative method saves months of confinement, and gives permanent results. The buried suture material should be absorbable, such as catgut or kangaroo tendon. The field of operation should be continuously irrigated with a hot salt solution during the manipulation, and the incision closed without drainage. The massage treatment begun at an early date is an important factor in restoring the functional activity of the joint.

86. **Pneumonia in Children.**—Dickey recommends, in cases of pneumonia in childhood, the following treatment: Good ventilation; special attention to the clothing so as not to impede movement; nutritious and easily digested diet, given at stated intervals, and in concentrated form; plenty of cold water; moving the bowels in the beginning as an initial measure; special attention to the possibility of cardiac failure, strychnin being the best tonic, alone or combined with belladonna; temperature controlled as far as needed by hydrotherapeutic applications of water bags; in case of subnormal temperature, hot baths or hot packs with strychnin and digitalis. In case of delirium and high fever the ice-cap may be beneficial. As regards expectorants, he does not speak very strongly. Opium is to be avoided except when the cough is very harassing and interferes with rest. Pain can be relieved by external mustard applications. The internal remedies should be those that have germicidal or antiseptic properties, and will not depress the heart, and he thinks that salicylate of cinchonidia might, on theoretic grounds, be of advantage, but he has had no personal experience with it or other salicylates. In a few cases he has used creosote with apparent good results. He concludes with a brief mention of serum treatment.

88. See abstract in JOURNAL, July 8, p. 101.

96. **Disinfection in Typhoid Fever.**—Miner, noticing the prevalence of typhoid in North Dakota, describes the defects of sanitation along the course of the streams, especially the Red River of the North, where the same location is often the source of the water-supply and the drainage outlet. He remarks that the inhabitants of long residence along the river seem to have gained a certain immunity, but new-comers and children are very generally attacked.

92. **Bottini's Operation.**—Guitéras' paper is a very lengthy one, giving reports of twelve cases operated on by the Bottini method. In conclusion he discusses the indications of the operation at some length and states his belief that of all operative procedures so far devised for prostatic hypertrophy, this is the least dangerous and attended by the best results.

95. **Colles' Fracture—New Treatment.**—Rockey recommends, instead of the ordinary method of using splints that make pressure on the tendons and interfere with the circulation, lateral splints that prevent pressure of the flexor and extensor tendons, do not interfere with the circulation, and permit movement of the joints during the healing process. In his last case he used strips of pasteboard $1\frac{3}{4}$ inches wide and 25 $\frac{1}{2}$ long, made with four thicknesses on each side, and molded while moist, to the radial and ulnar margins, the palmar and dorsal surfaces of the wrist being entirely relieved from pressure by the thickness of the splint. Perfect reduction of the fracture is of first importance. He has used this method in twenty-five cases with good results.

98. **Tetanus Treated with Antitoxin.**—De Youna reports a case of tetanus coming on eight days after an injury, cured

promptly by tetanus antitoxin injection. In all, 280 c.c. were given in fifteen days of treatment.

100. **Modern Therapy of Tympanic Cavity.**—Goldstein's paper is a plea for rather conservative methods in the treatment of middle ear disease. He thinks that frequent use of the syringe and lavage of the auditory canal is distinctly contraindicated in suppurative cases where large perforation of the drum exists, and where free entrance of the fluid into the cavity is so easy. He says they carry infection into the attic or antrum when none has previously existed. It should be our object also to extract fluid from the sodden, boggy surface of the cavity, and not to add to it. With a viscid, tenacious and copious discharge, a gentle current of a warm antiseptic fluid may be used to clear the canal to the surface of the drum, but beyond this point it should not be used. He is also opposed to the use of middle ear syringing in any tympanum affections other than in mild cholesteatoma. He has found a small tuft of sterilized cotton on the end of a probe, frequently renewed, a much better cleanser of the auditory canal than a large current of antiseptic fluid. If a small perforation exists, not passing the cotton tuft, he employs a nebulizing antiseptic fluid with the Eustachian catheter, thus driving it out and inflating and medicating the middle ear cavity better than could otherwise be done. His fluid consists of iodin, 3 grains; carbolic acid, 4 grains, and benzoinol or abolein, 1 oz. A slight insufflation of an antiseptic powder, preferably nosophen, completes the treatment. When the discharge is profuse, he adds a gauze packing to this treatment, using narrow strips of plain sterilized gauze. He thinks that oil sprays will soon gain the upper hand in the treatment of mucous membrane of the upper respiratory tract in the ear, and he describes his methods of using them. Where the Eustachian tube is impervious, as revealed by the auscultation tube, he employs an intratympanic injection made with puncture of the drum under antiseptic precautions, with the same formula as before, and he describes in detail his methods of doing this. Another departure of his own is the use of picric acid as a desiccator and antiseptic. It can be used with weak alcohol solution, thus avoiding pain, or with glycerin. In concluding his paper he speaks of the use of cimicifuga in the treatment of tinnitus aurium. In his experience, only about 5 per cent. of patients thus treated were benefited.

102. **Odd Types of Disease.**—Pearce's article points out certain peculiar phases of tabes, myelitis, cerebrospinal palsy, chronic anterior poliomyelitis, brain abscess, cerebral edema, and traumatic neurosis. The details can hardly be given here.

103. **Typhoid Without Intestinal Lesions.**—The paper by Lartigau gives full reports of two cases, with autopsy, in which the characteristic lesions of typhoid were not met with. The clinical picture in one was characteristic, and in both bacteriologic examination revealed the typhoid bacilli. In the second case, which was operated on for ectopic pregnancy, there was also streptococcus and pneumococcus infection.

104. **Malignant Disease of Digestive System.**—Noticing the general features of cancer of the digestive tract, Einhorn lays down the following as guides to their recognition:

Esophagus and Cardia.—Gradually developing dysphagia and the presence of a stricture in the esophagus, especially if a partiele of tumor showing the characteristics of cancer has been brought up with the tube, or the above symptoms, with frequent small hemorrhages, make the diagnosis of malignant disease positive.

Stomach and Pylorus.—1. If particles of tumor are found—in the wash water or in the tube—which under the microscope reveal the characteristic picture of a malignant growth.

2. The presence of a more or less large tumor with an uneven surface, belonging to the stomach and associated with dyspeptic symptoms.

3. The presence of a tumor associated with frequent hematemesis.

4. Constant pains, frequent vomiting, isochymia, emaciation—all these symptoms being quite permanent and not extending over too long a period of time (six months to a year.)

5. Tumor and isochymia.

6. Emaciation, isochymia, presence of lactic acid.

7. Constant anorexia and pains, not yielding to treatment,

accompanied by frequent small hemorrhages of coffee-ground color.

Small and Large Intestines.—1. If by abdominal or rectal palpation a tumor can be detected which is situated in the small or large bowel, and accompanied by symptoms of cachexia and disturbances of defecation.

2. The presence of a tumor as just described, and the discovery of small particles of the neoplasm in the evacuation giving microscopically the appearance of a cancerous growth.

3. Gradually increasing disturbances of the bowel for a few months in a heretofore healthy person, accompanied by cachexia and symptoms of a beginning or already developed stricture of the bowels, and the presence of a small particle of growth in the stools giving, as above, microscopically, the picture of cancer.

He also gives the following general rules as to operation: 1. Whenever the tumor is accessible for operation, and there is the slightest hope of curing the patient, the complete extirpation of the growth should be performed. 2. If the tumor is not accessible for operation, or the entire removal of the malignant disease is practically impossible, palliative operations which serve to alleviate suffering and prolong life should be undertaken in cases requiring them. 3. Cases of malignant disease operated on, as well as those without operation, require for their treatment and management a skillful physician, who is able to lessen suffering and nearly always able to lengthen life, even under the most trying conditions. Cancer of the esophagus and cardia does not at present permit any radical operation. When the patient cannot take food, gastrostomy is indicated. Cancer of the stomach and entire intestinal tract should be removed if discovered sufficiently early. Practically the outlook for the cure of malignant disease of the intestinal canal becomes less encouraging the farther away from the anus it is situated. Cancer of the lesser curvature of the stomach and posterior wall is usually recognized too late for radical operation, and if the cardia and pylorus are not involved, only the usual palliative remedies should be resorted to. Cancer of the rectum, when recognized early, has by operation afforded brilliant results. With the tumor higher up in the intestines, its excision and resection of the intestines with end-to-end anastomosis is advised. Where total resection is impossible and enterostomy or enterocolostomy, or, if in the rectum, a colostomy, will be advisable palliatives.

105. See abstract in JOURNAL, June 17, p. 1390.

107. **Glycosuria in Cerebral Hemorrhage.**—Gradwohl reports three cases of temporary glycosuria in connection with cerebral hemorrhage, in two of which it was due to direct pressure on the diabetic center in the fourth ventricle. In the other, where there were no local lesions at these points, the general condition of cerebral pressure will, in his opinion, account for the condition.

108.—See abstract in JOURNAL, July 1, p. 37.

109. **Headache and Asthenopia.**—Cobb reports 3 cases of headache due to nasal disease, and comments on them. He thinks that many patients have headache from chronic rhinitis, with a viscid dry discharge which is due to uricacidemia and high living. Another form is caused by hypertrophy of the posterior third of the nasal turbinate. This form is not at all rare. In conclusion, he says: wish to emphasize the following points: 1. Headache may be and often is caused by intranasal disease. 2. Other diseases, aside from atrophic rhinitis, nasopharyngitis, affections of the accessory sinuses or the obstructive intranasal conditions may be the cause of headache. 3. An examination of a patient suffering from headache is not complete unless the condition of the nasal cavities has been investigated.

111. **Serum Treatment.**—Biggs's paper is concluded in this number. Having already noticed the brilliant results in the treatment of diphtheria by antitoxin, he reviews the facts as regards the serum treatment of pneumonia, in which the experimental results have been very striking, and he thinks it not improbable that the next great achievement in serum therapy will be in the treatment of this disease. He also notices the good results of cholera and plague inoculations and Wright and Semple's prophylactic inoculation for typhoid. As regards the yellow fever serum and serum therapy in streptococcal infection, he does not speak with such positive

encouragement. Leprosy and tuberculosis he throws out altogether, as regards treatment by this method.

113. **Peritonsillar Abscess.**—Cobb's paper concludes as follows: The whole number of cases examined was 44. 1. No causative relation could be proved to exist between rheumatism and peritonsillar abscess. 2. An acute inflammatory condition to the tonsil was found to exist in a sufficient number of cases to suggest that it may be the cause of the infection to the peritonsillar tissue. 3. A study of the pharyngomaxillary space shows: *a*, that its injection with wax on the cadaver may produce an appearance similar to the peritonsillar abscess as seen clinically; *b*, that its distance from the surface of the palate may account for the depth of the puncture often needed in order to obtain pus; *c*, that the cross action of the muscles covering the space seems a sufficient reason for the closure of puncture made into it; *d*, that the supratonsillar fossa and the infratonsillar space offer the space for puncture most free from anatomic obstruction; *e*, that puncture anterior to a plane passing through the posterior pillars can not injure the great vessels if the knife be kept at all times anterior to such plane; *f*, that the space is divided into two cavities by a septum formed by the styloglossus and stylopharyngeus muscles. This in most cases protects the great vessels from purulent infiltration. Failure of this septum to act explains the cases cited by Bosworth where the pus passed along the great vessels into the mediastinum.

114. **Normal Salt Solution in Septicemia.**—Edson reports a case of septicemia apparently starting from tonsillar infection, in which the use of normal salt solution injected into the subcutaneous tissues was resorted to after the patient had gotten into a desperate condition. The use of this solution was immediate in its good results, relieving pain, quieting delirium, and improving the pulse, and his cure may be said to have started from its first employment. Another noticeable feature was the ease with which large amounts of the solution were absorbed.

115. **Acromegaly.**—After reviewing the subject of acromegaly, Lackey reports a case presenting some unique features occurring in a colored male, who enjoyed average strength and health up to the age of 13. About this time he suffered with excruciating pains in the hip-joint and extremities, and was confined to bed for a period of two years, during which time the extremities increased rapidly in size, the stature also. Thirst was a constant symptom. The general nutrition of the patient was poor. Since the confinement locomotion has been impossible excepting by the aid of mechanical support. The patient is now 28 years of age; the extreme height of 8 feet 6 inches is recorded; the patient's face is repulsive, oval in outline, the lower jaw very much increased in size and length, the forehead extremely low with a thickened orbital border; the eyes small; the temporal bones indented; the nose long, large and much flattened; unlike most cases of acromegaly, the lips are thick and very prominent. The case presents special interest, in that it is undoubtedly one of the so-called giant forms of acromegaly, the enormous height being due to the lengthening of the long bones, the smaller bones of the hands and feet were found much enlarged. The heart showed hypertrophy. Spinal curvature was observed. The mentality of the patient is unimpaired.

116.—See abstract in JOURNAL, June 10, p. 1313.

117. **Corpuscular Phosis and Aphosis.**—Describing the phenomenon, Gould suggests that a day not too bright be selected, the sky filled with gray to bluish clouds. Shade the eyes with the hands, and, narrowing the palpebral borders until the aperture is about the width of the pupil, gaze steadily toward the clouds, but vacantly, i. e., without any accommodation whatever. Without winking, hold the eyes perfectly still. Within a number of seconds the field will be filled for 180 degrees, laterally, with innumerable darting points of light—phosis—moving, disappearing and reappearing in all directions without order and with great irregularity. A tinted lens being introduced, the number of bodies is reduced, but the remainder have the same general character and rate of movement. The reduction in number he describes as being due to the accommodation and fixation almost necessitated by the different lighting of the corpuscles, and the fact that but a single eye is used. By using a large piece of cobalt-glass over both eyes, and looking to a brightly sun-lit white

cloud, the aphoses are more numerous and fill a larger expanse of the field than when a single eye is used. In this way the two classes of sensations are recognized as due to the same object or causes of retinal origin, and he considers that the corpuscles are not seen directly, nor by means of the shadows they throw on the retinal end organs, but arouse sensations only when they reflect and focus on an incident beam of light on an unaccustomed and sensitive portion of the retina; and therefore expresses the firm conviction that these bright points—phoses—and the Newton aphoses are all due to reflections from corpuscles of the retinal capillaries, varying in appearance according to the method of observation and the illumination; thus differing from the conclusions of Willetts, who considered that they originated in the cornea.

118. Post-Appendiceal Abscess.—In reporting this case of abscess posterior to the appendix, discharging through the umbilicus, and refilling and causing perityphlitis and general peritonitis, Friend explains the discharge of pus through the umbilicus by presupposing a patulous vestige of the vitello-intestinal duct, and that the infection which came from the intestine first involved this duct. The abscess cavity filled and the pus followed the course of least resistance, viz., through the umbilicus. The general infection was probably due to obliteration of this exit.

119. Horseshoe Kidney.—One weighing 14 ounces is reported as a finding in posting a patient having met with a violent death in her 45th year. The organ lay at its normal height, with convexity downward, close to the spinal column and symmetric as to the two sides—measuring fifteen inches from the highest point of one extremity to a corresponding point on the other. The pelves and ureters were intact. The connecting band was composed of true renal tissue and measured $3\frac{1}{2}$ inches in circumference.

120. A Mechanical Laxative.—Liquid petroleum is recommended as a mechanical laxative, in quantities of from two to three ounces. Upson considers it absolutely non-irritating, that it does not distend the bowel, nor cause flatulence; indeed, diminishes it, and is easily taken, even by children.

122. Irritation-exostosis.—Bradford shows, by a series of skiagraphs, the more common locations in which are found the various exostoses due to irritation about the small joints of the feet. The parts where irritation from bone pressure or shoe external irritation takes place are those positions of the foot where the strain is greatest and the bone is less protected by fat, commonly the first and fifth metatarso-phalangeal articulations, and at times at the dorsal-surface articulations of the cuneiform and first metatarsal, and on the dorsal surface of the head of the first metatarsal bone, and on the prominent portions of the posterior portion of the os calcis.

123. Case of Syphilitic Fever.—In the case recorded, diagnosis was extremely difficult, and a study of the febrile course shows an average evening rise to about 101.6 degrees, with a morning fall to below normal. Attention is called to the value of a study of the pulse in doubtful febrile cases; slight variations of the pulse are at least suggestive of specific fever.

124. Antistreptococcal Serum in Puerperal Fever.—In treating these cases, besides the use of serum, Rosenthal advises a douche of sublimate, 1:8000; lysol, 2 per cent.; or creolin, 5 per cent.; curettage, with iodoform packing, which is removed after twenty-four hours. Purgatives and stimulants are to be selected, while the serum is used in quantities of 10 c.c. in initial doses, repeating the dose on the following day if fever continues, and gradually diminishing the quantity injected. Several cases are reported in which the antistreptococcal serum was used; the writer reports a mortality of 25 per cent.

126. Angioneurotic Edema.—The condition appeared in a female of 35, who had enjoyed average health. She first noticed a swelling of the right side of the face, appearing suddenly; no pain, tenderness, or pitting was present early, nor was itching or heat complained of; disappearing in twenty-four hours to reappear again on the wrist and various other portions of the body for weeks. The condition continued to involve various portions of the body, extending over larger areas, especially selecting the face and loose tissues of the neck; burning, itching at times; redness developed as the condition progressed; twice during the six months did the edema extend

beyond the pharynx, the patient becoming cyanotic and complaining of great distress in the chest; venesection relieved the symptoms at these times. Eventually the patient died of an internal hemorrhage.

127. Arsenite of Copper in Cerebrospinal Meningitis.—Kolpinski reports four cases of epidemic cerebrospinal meningitis which he treated by the following method: 1. Quiet, excluding from the sick-room as much as possible, friends, light and sound. 2. A simple milk diet with drinking water whenever desired. 3. Daily movement of the bowels by enema or castor-oil. 4. The arsenite of copper for the first and second days, every half hour when the patient was awake. With improvement in symptoms the intervals were prolonged to every one or two hours on the third day, and every three or four hours on the fourth day, and the remedy was discontinued when convalescence began to appear. With children he uses about 1/2400 to 1/1200 of a grain a dose, with the adult 1/320.

FOREIGN.

British Medical Journal, July 15.

Case of Freidreich's Hereditary Ataxia with Necropsy. GEORGE E. RENNIE.—The author reports a case of Friedreich's ataxia, with autopsy findings, in a boy aged 13 years. The lesions found were well-marked degeneration of the posterior columns throughout their whole length, in the posterior root zone, and also of a large number of posterior root fibers; much less marked degeneration in the lateral columns in the region of the crossed pyramidal tracts; scattered marginal degeneration at different levels; distinct degeneration of the direct cerebellar tract with atrophy of Clarke's column. The findings, therefore, agree quite well with those usually met with, but it is interesting to note the extent of the lesions, though the duration of the disease was stated to be only about fifteen months. The disease, therefore, is apparently a primary nervous derangement grafted on an imperfectly developed spinal cord, the imperfect development being due to unknown hereditary influence. In conclusion, the author calls attention to certain features in the clinical picture, such as the absence or rarity of sensory disturbances, lack of sphincter troubles and the condition of muscular hypotonia present in the majority of these cases.

Contribution to Study of Posterior Columns of Spinal Cord. HAMILTON WRIGHT.—This article is a discussion of the findings of the autopsy in a case of tabes, with special reference to the nerve tracts of the posterior column. The author discusses the findings with special attention to the course of what are considered the intracordal or endogenous sections. He concludes that the Marie cornu-commissural zone, Flechsig's median triangle and postero-internal root zone are of true intracordal origin, at least as regards the majority of their fibers. The comma tract of Schultz was found in a state of almost complete fibrosis, which he explains as probably due to an anatomic connection with Clarke's cells, and generally close association with the vesicular cylinders.

Some Points Connected with Sleep, Sleeplessness and Hypnotics. JOHN BUCKLEY BRADBURY.—Bradbury discusses the chemistry and physiologic action of some of the derivatives of morphin, cannabis indica, hyoscin and anhalonium, and concludes with remarks on the treatment of insomnia. After noticing the causes, toxic, psychic, and those due to changes in the mode of life, he mentions the special and general measures for its relief. In ordinary cases of insomnia, uncomplicated, he would first try the bromids as least harmful. He notices the requirements as to sleep places, diet, etc., and then specifies special drugs for particular cases. [In the main his suggestions are much the same as those found elsewhere.—Ed.]

Treatment of Malarial Fevers by Inunction of Creosote. A. O. FITZGERALD.—This article contains the report of classified cases of malaria treated by inunctions of pure beechwood creosote over the chest, abdomen, axillæ and sides, 15 to 20 minims for a child of one year, and 30 to 60 minims for an adult, mixed with an equal quantity of olive-oil, the latter being employed to counteract the tingling and burning occasionally produced by the creosote. The results as reported in his tables are certainly remarkable, and he mentions some of the cases in detail. He thinks it is an ideal treatment in malarial fevers in children and he has never seen any bad effects in any case. It seems to be also equally effective in adults.

Lancet, July 15.

Observations on Tuberculosis and Syphilitic Diseases of the Eye. LACHLAN GRANT.—The author calls attention to the comparative rarity of tuberculous disease of the eye, and offers the following as probable reasons for the facts: 1. The eye is exposed to much bright sunlight, which is fatal to the bacillus of tubercle. The movements of the eyes and eyelids tend to dislodge the bacilli, and the secretions also favor this action. He thinks there is also something in the construction of the surface tissues of the conjunctiva and cornea, which is hostile to bacilli infection. Another means of defense is the phagocytic destruction of the bacilli and he concludes that the organ may be considered naturally immune to tubercle, thus resembling the pharynx, thyroid body, pancreas and ovary. In striking contrast with this immunity is the relative liability of the eye to be attacked by syphilis, the virus of which seems to circulate throughout the entire system, probably finding in all non-syphilitic individuals a suitable nidus for its development.

Muscular Hypotonia in Epileptics. GEORGE E. RENNIE.—Three cases of epileptics are reported in whom there was a noticeable flaccidity of the muscles as one of the symptoms. The subjects were those in whom the disease had existed a long time, with very frequent fits and no long intervals of freedom. There were also in all three marked mental deterioration, and they were all young. He concludes that in this class of epileptics there may be a more or less permanent interapoxysmal muscular hypotonia due to a state of exhaustion of the cortical motor cells.

Anthropological Work in Asylums with a Practical Scheme for Conducting the Same in Adults. EDWIN GOODALL.—The degenerative stigmata in the insane have lately been noticed by various writers, especially Schmidt, Meyer, and Peterson, and Goodall here offers a scheme of anthropologic work in asylums. The chief objects of such a research in his opinion are: 1. To show whether these stigmata are more common; and more numerous in the insane—apart from cases of obvious congenital defect—than in the sane. 2. To make a division into grave and slight stigmata by ascertaining which are commoner in the more depraved types of insanity, and which in the more hopeful. 3. To ascertain whether there is such a frequent recurrence of particular stigmata in particular forms of mental disorder as to justify a correlation. 4. To ascertain the relationships between the number and nature of the signs and the degree of inheritance of neurotic disorder; where such inheritance is denied, or where the history is difficult to ascertain, a study of the physical condition may be expected to give useful information as to inheritance. 5. To obtain a guide in prognosis in persons where history raises the apprehension of mental disorder and in those who have become insane; where the insanity has supervened in an individual said by his relatives to have been previously normal, and some accidental cause for the disorder is assigned, the discovery of physical stigmata may materially alter the prognosis. The normal measurements should be made from the sane population of the district supplying the patients to the asylum, which, though difficult in places where there is a large and changing population, would be comparatively easy in others.

Journal of Laryngology, Rhinology and Otolaryngology (London), July.

Hysterical Aphonia and Ventricular-band Speech. MIDDLEMASS HUNT.—The case here reported is that of a Jewess, aged 27, who, from a nervous shock experienced in attending an Irish wake, completely lost her voice and did not regain it up to the date of being seen, excepting on one occasion when under the influence of ether, and then it was only retained for two hours. Laryngoscopic examination showed the ventricular bands brought close together on attempted phonation, hiding the ligamentous glottis almost entirely, but it could be observed that the vocal cords were wide apart. All efforts to restore her voice failed, but a gradual improvement took place within the last two or three years until she came to talk in a deep, rough but fairly powerful voice. The laryngoscopic picture remained unchanged. On phonation the ventricular bands were seen to come tightly together and vibrate, while the glottis, so far as it could be seen, remained open. The voice was evidently due to ventricular band vibration. No change occurred, and hope of restoration was abandoned

until one day last September she returned with perfect voice, it having been restored to her by a nervous shock on seeing a man thrown down stairs into the street and so severely injured that he died shortly afterward. Laryngoscopic examination showed the vocal cords closing normally, but still considerable hypertrophy of the ventricular bands. Hunt asks in what proportion of cases do we find closure of the ventricular bands on attempted phonation in hysterical loss of voice? He can recall only one other case, and did not find it described in the text-books, though Trauelp says it is not uncommon, and regards it as a transition form of neurosis between spastic and paralytic aphonia. Hunt asks, is this view correct, and is not the approximation of the ventricular bands in hysterical aphonia rather an effort of nature to make them take the place of the paralyzed cords, as we see in cases where these latter have been destroyed by disease?

Bulletin de l'Académie de Médecine (Paris), July 4.

Malarial Aortitis. LANCEBEAUX.—In this communication 21 cases of a special variety of aortitis, occurring in patches, are added to 16 previously reported. Some were accompanied by an aneurysm, angina pectoris, dyspnea or dysphagia, and terminated by rupture of the vessel or suffocation, or more slowly from cardiac insufficiency, unless the lesion was arrested and cured. Lancebeaux ascribes the aortitis to malarial infection, and insists on the importance of watching over a malarial subject, as the first acute stage, more or less intermittent and transient, is followed by a phase of sclerous and persistent lesions, frequently mistaken for syphilitic. Hydro-therapeutics is beneficial, also potassium iodid if the lesions are not too far advanced. He reiterates that he has found gelatinized artificial serum extremely successful in obliterating the aneurysmal sac, injecting 250 c. c. of a 2 per cent. solution into the buttocks every fifth to eighth day, confirmed by the experience of the Bucharest professors among others. [A. Fraenkel has also recently reported another severe case cured.—Ed.] The ascending portion of the aorta is usually the site of the lesion, which in some respects anatomically resembles the invasion of the frontal nerves in syphilitic periostitis of the skull.

Report of Delegates to Tuberculosis Congress.—The fact was especially emphasized that a condition indispensable to the success of sanatoria for the poor is the support of the family while the breadwinner is in the sanatorium; also that no patients should be admitted to the suburban sanatoria except those in the pretuberculous stage, before the appearance of bacilli in the sputa. Those with "open lesions" should be received and relieved as far as possible in the hospitals. "As many sanatoria for the people as are opened, just so many hospitals will be closed in the near future." "The rich, by founding and endowing sanatoria will protect themselves, their children and future generations against the white scourge, as the number of cases progressively diminishes."

Revue de Chirurgie (Paris), July 10.

Creation of Cleido-Humeral Nearthrosis. OLLIER.—The entire scapula and the upper end of the humerus had been removed, on account of a gunshot wound received at the siege of Metz, leaving the arm hanging loose with a deep depression instead of a shoulder. Ollier attached the humerus to the clavicle by a couple of silver wires, raising and shortening the arm 6 cm., but restoring almost complete function. A supple but very resistant fibrous tissue has developed, forming a peripheral capsule and ensuring the solidity of the nearthrosis. Radiographs show that the support does not now depend on the wires, which might possibly be removed. The subject can lift a weight of 57 kilograms with this arm, and the outline of the shoulder is normal. This case has been reported before (JOURNAL, XXXI, p. 429), but the extremely favorable functional results secured induced Ollier to describe it in detail, and insist on the principles of the disinsertion of the muscles accidentally displaced or abnormally attached, and their reinsertion on the bone which they can then move normally. "As long as the muscles are not entirely atrophied, as long as normal conditions of the nerve persist, it is possible by restoring normal relations to hope for a successful re-establishment of part of their functions. A pseudoarthrosis swinging loosely can thus be replaced by an actual articulation, endowed with active movement, and adequate resistance, if intervention occurs before the muscles

have become degenerated, and it is still possible to find the elements for a new capsule in the peripheral fibrous tissues."

Post-Anesthetic Paralysis. MALLY—"Hysterical and reflex paralysis occurring after an operation do not seem to have any connection with the anesthesia. Central paralysis from cerebral hemorrhage is a rare accident, evidently due to a vascular rupture mechanically produced by the anesthetic, but peripheral paralysis is a comparatively frequent complication, always caused by compression, and the anesthesia is only indirectly responsible, as it favors the involuntary and accidental compression of the nerve trunks of the roots of the brachial plexus. It is impossible to establish any toxic or depressing action of the anesthetic on the nervous system. Treatment of post-anesthetic paralysis should be preventive, avoiding forced elevation of the arms, and watching to see that the edge of the table or a ligature does not cut into the members or tissues. Local faradization, as soon as possible, is indicated in paralysis from compression, and passive movements of the articulation to prevent stiffness. If the electric tests disclose degenerative atrophy or severe reflex paralysis, localized electric treatment is counterindicated. In the latter case the reflex medullary irritability should be soothed with static electricity, and possibly revulsion on the spine with spark friction."

Wounds of Pericardium and Heart. E. LOISON—This tabulated description of fifty-four cases, concluded from the numbers for January, February and June, aims to establish that the prognosis is not necessarily unfavorable, that many cases have been successfully operated on, and that intervention might have been far more active than it was, as in many instances the results or autopsy findings demonstrated that surgical treatment would have been possible and would have had every chance of success. The symptomatology is no more uncertain than in cases of wounds of the peritoneum or of certain abdominal viscera, and the diagnosis is no more difficult or delicate.

New Method for Resection of Gasserian Ganglion. O. JACOB—Experiments on the cadaver have convinced Jacob that the simplest and easiest route to reach the Gasserian ganglion is by following up the superior maxillary nerve to the foramen rotundum. The external surface of the base of the pterygoid apophysis serves to locate the foramen, as it separates the round from the oval opening. This method includes resection of a part of the external wall of the orbit to expose the superior maxillary, which opens a large field for the operator, and much shortens the route. The steps of the operation are first to find the superior maxillary and to follow it to the base of the skull; then trephine the skull and seek the ganglion, isolate and extirpate it, and replace the osteoplastic flap. The incision is circular, commencing a finger in front of and above the tragus, fitting around the orbit, and continuing the circle around to a point in front of the upper portion of the ear.

Semaine Médicale (Paris), July 13.

Biliary Lithiasis, Suppurative Cholecystitis and Persistent Infection of the Biliary Passages. RENDU—A case that had been under observation for a long time, and twice been operated on, still gave evidence of latent, persisting infection, and Rendu sketches the treatment appropriate in such cases: 1. Evacuate the bile with light mineral purgatives, such as sodium sulphate. Calomel is also effective, and glycerin. Follow with mineral waters, Evian, Vittel, rather than Vichy, which does not produce a sufficiently laxative effect in this late stage. The secretion and fluidity of the bile are increased by administering 2 to 3 grains of sodium salicylate a day, or 25 to 30 centigrams of salol. The meals should be far apart, regular and not too abundant, with a little starch, meat, fat or substances rich in cholesterol, such as brains and the yolk of eggs. Green vegetables and fruits are the principal reliance, avoiding effervescent and alcoholic drinks. Plenty of exercise, out-of-door life, and cutaneous stimulants, baths and frictions, are also to be recommended.

Journal d'Hygiène (Paris), July 13.

High Frequency Currents in Therapeutics of Arthritis. G. APOSTOLI—An experience with 913 patients during the last five years, treated with d'Arsonval's application of the high frequency currents, confirms their efficacy as a thera-

peutic measure which acts on the cell itself, and powerfully modifies the general nutrition, promoting and regulating it. The clinical results are almost constantly progressive restoration of the general health, as strength, appetite, sleep, digestion, cheerfulness and capacity for work return. Tests of the urine of 469 patients showed increased activity in the organic combustions, improved diuresis and easier elimination of the excreta, while the proportion of uric acid tends to return to normal. The high frequency current is a powerful weapon against arthritic neuralgia, neurasthenia, dyspepsia, eczema, vascular congestions, and all other manifestations of arthritism, by the preventive and curative effect of general applications, combined with local for hemorrhoids. It is counterindicated in acute rheumatism, but may be beneficial in the subacute stage, and is almost invariably effective in the chronic forms, as also in gout, although it may induce a fresh outbreak in certain cases when first commenced. The static current, on the other hand, is most effective in hysteria.

Centralblatt f. Chirurgie (Leipzig), July 15.

New Operative Treatment of Varicose Ulcerations of Legs. N. BARDESCU—The latest views of the phlebo-neurotrophic origin of varicose ulcerations indicate that besides the alterations of the vessels, the lesions of the nerves require treatment, and Chipault has confirmed the writer's experience that stretching the nerve is an important factor in the cure. Two observations are related, both severe chronic cases that had resisted all treatment for four to eight years, one with gangrenous detritus. Both were completely cured in about a month, by resecting the vena saphena magna with cocaine and eucain anesthesia, and ten days later stretching the nervus peroneus communis behind the head of the fibula, under chloroform, separating its fibers with the point of the bistoury to destroy the varicose vessels of the nerve as much as possible. In future operations he intends to complete the intervention at one sitting.

Triple Bladder. A. STRAUSS—This is an observation of a man of 29, complaining of intolerable desires to urinate, and incessant incontinence, and operated on, with the result of the discovery of two supernumerary bladders in front of the main bladder debouching in the prostatic region, and of the typical bladder shape, about one-fourth normal size, but without connection with the ureters.

Deutsche Medicinische Wochenschrift (Berlin), July 13.

Fatal Acute Nephritis in Consequence of Intoxication with Wood-Sorrel. H. EICHMORST—Notwithstanding the prevalence of the custom of nibbling wood sorrel, and using it for salads, as is done in Germany, intoxication from the oxalic acid has never been noted with absolute certainty, although a veterinarian has reported a horse succumbing to it with inflammation of the stomach and convulsions. In the case described in this communication a boy of 12, after eating a large quantity of sorrel as he played in the fields, became affected with violent colic and diarrhea. The next day the right kidney region was sensitive to pressure, with 12 per thousand albumin in the urine; no fever; the fifth day unconsciousness, clonic contractions of the right arm and eyeballs twitching from right to left, pulse 84 to 92; no previous scarlet fever; received at clinic on seventh day; no oxalate crystals detected in urine; respiration ceased the eighth day, but the heart continued to beat for three-quarters of an hour longer.

Glycosuria in Intoxication from Atropin. F. RAPHAEL—An accidental intoxication with atropin induced spontaneous glycosuria: 1.8 gram dextrose in the urine the first morning and afternoon—patient a merchant 28 years old—and tests with grape-sugar ingested, showed that 13.2 per cent. was eliminated, indicating not merely a glycosuria *e saccharo*, but also an *ex amylo*. Experiments with rabbits also proved that the ingestion of an appropriate amount of atropin produced glycosuria four out of five times.

Mitteilungen a. d. Hamburg. Staatskrankenanstalten, II, 2.

Dementia Paralytica Appearing in Boy of 12 as Sole Manifestation of Hereditary Syphilis. NONNE—The etiology of the case reported is "pure," no alcoholism nor trauma, in which respect it is unique, also in the rapid course of the progressive simple dementia, free from the phases of depression and excitement common in adults.

Infection by Diplococcus Lanceolatus. J. WIETING—Nine cases are studied and the paths of the infection traced to the blood and lymph routes, the focus determined by some pre-existing trauma or thrombus, and the entering point assumed to be some lesion too insignificant to have been noted, in the cases called primary. In one case, a girl of 8, prompt recovery followed the evacuation of an enormous suppurative cavity occupying both small and large pelvis. In two cases of croupous pneumonia in men of 44 and 53, the knee was affected, and a third case, a child, died from pyemia produced by mixed infection with the staphylococcus aureus, which was found pure in an abscess in the hip. A fourth case of croupous pneumonia in a man of 29, three days after a fall down a few steps, was followed by suppurations in three joints, finger, toe and knee, in which the diplococcus was found pure at the autopsy. This case is an exception to the general experience that localized infection with the diplococcus alone is usually a benign affection. When combined with pyogenic microbes the diplococcus is usually soon destroyed, leaving the entire field to its partner. An interesting case is a workman of 60, under treatment for a fractured rib and slight emphysema of the lung, who developed an abscess in the epididymis in which the diplococcus was found pure with evidences of an old thrombus formation in the vessels. Complete recovery followed evacuation.

External Anthrax on Man. JUSTI—Sixteen cases are described, with five deaths, in which the results of conservative and operative treatment are compared, very much to the disadvantage of the latter, emphatically confirming C. Mueller's statement that the only effective treatment of anthrax pustule, especially on the neck, is to leave it entirely alone, and merely protect it from secondary infection. The patient must remain in bed, with exceptionally strengthening diet, and the extremities, raised in certain cases.

Wiener Klinische Wochenschrift, July 6 and 13.

Third Case of Tetanus Traumaticus Cured by Injections of Emulsified Brain Substance. A. KRUKIEWICZ—Forty grams of rabbit's brain substance were injected in all, emulsified in a 0.6 per cent. aqueous salt solution, in the region of the pectoralis major, in the course of three days, the patient, a man of 35 years of age, in violent tetanus. The effect was remarkable from the first, and complete recovery soon followed, as in the two other cases reported. All medication had proved ineffectual, and was suspended after the injections were commenced, the ninth day of the disease.

Noma Faciei. F. PASSINI—An extensive case of noma is described in which the Loeffler bacillus was found and extremely virulent, evidently an important factor in the etiology.

Case of Morbus Addisonii with Preceding Purpura Hemorrhagica. F. VOLLEBRACHT—This careful study of a case at Neusser's clinic, the metabolism also investigated, presents a peculiar clinical picture: patient first appeared with purpura hemorrhagica which had commenced with cramps in the abdomen, then pain in the region of the right kidney, albuminuria and transient hematuria; recovery; no relapses. She returned eleven months later with classic morbus Addisonii, improved with suprarenal extract for six weeks, then nausea, vomiting, lethargy, and in five days fever, convulsions and delirium, with death the seventh day, evidently caused by irritation of the brain from cerebral hyperemia with consecutive edema of the brain. Both suprarenals were almost completely destroyed, and this destructive process must have existed before there were any clinical indications of morbus Addisonii—merely the purpura.

Societies.

French Congress of Urology.—The fourth annual meeting of the French Association of Urology will be held at Paris, October 29 to 31. Secretary, M. E. Desnos, 31 rue de Rome. "Essential Hematuria" is the subject announced for discussion.

Crawford County Medical Society.—At the recent meeting of this society, held in Robinson, Ill., the following officers

were elected: President, C. E. Price; vice-president, H. F. Jones; secretary, John Weir; treasurer, C. Barlow. The next meeting will be September 14.

Wabasha County Medical Association.—At the annual meeting of this Association, held in Wabasha, Minn., July 13, the following officers were elected: President, E. H. Bayley; vice-president, J. A. Sloumb; secretary and treasurer, W. F. Wilson. The next meeting was appointed at Lake City, July 19, 1900.

Proposed Leprosy Congress.—The program of the leprosy congress which Dr. Albert S. Ashmead of New York and Dr. J. Goldschmidt of Paris are organizing, to meet in Paris in 1900, announces the subjects for discussion as follows: 1. How to deal with leprosy. 2. How to protect hitherto non-infected Continental nations in their contact with infected nations. 3. How to avoid importation by sea. 4. Formation of an international committee to carry out the measures of the Congress.

Chicago Academy of Medicine.

Regular Meeting, June 23, 1899.

ANTENATAL ASPECTS OF CHILDHOOD IN THEIR RELATION TO ADULT DISEASE AND DEFECT.

DR. C. S. BACON—The antenatal factors which influence intrauterine life may be divided into two classes: 1, the distinctly hereditary, which may also be called the terminal or conceptional, and 2, the postconceptional, or intrauterine, also often called the placentar. The germinal factors include the ovular or maternal and the spermatie or paternal. The intrauterine factors are the nutritional and the protective, including in the latter mechanical protection and temperature regulation. Both classes of factors may be normal, causing a healthy development of the individual, or they may be pathologic. The normal factors determine the form of the individual, morphogenetic, the structure, histogenetic, and also the character formation. In the pathogenetic factors we especially consider those which cause malformations, due either to defects or excesses of growth, and also infections and intoxications.

The form, structure and character of the individual are dependent on hereditary factors, including both the ovum and sperm cell. I shall not discuss the laws which determine their influence, which are, to say the least, very indefinitely known. However interesting the hypotheses are that have been advanced by Weismann and others, we all admit that heredity is the most important element. In other words, the germs contain the fundaments or *anlagen* for the form, structure and character of the individual. We can not note in detail the variations of structure at this time, but we know that these variations of structure and of character are more dependent on the foundation in the original cells than on any other cause. However, the intrauterine factors should not be entirely neglected. The nutritional factors are important in determining, for example, the size of the child. The absence of food, and particularly a deficiency in the proper elements of food, have considerably to do with the intrauterine development of the child, and very likely have some influence on its character. Then we must consider the imperfect protection of the child. There are many things which aid in determining the production of malformations. We have a very good illustration in those rare cases of extrauterine tubal pregnancy where the child goes on to term and on account of the impossibility of proper development of the child and lack of room and pressure, considerable deformity results. We have an excellent example of the effects of pressure in determining the form of the child in the results of the experiments that have been made by certain investigators. Thus by certain experiments on animals a remarkable variation was shown in form when the egg was subjected to pressure. The insufficiency in the liquor amnii is an important element in certain malformations of the child, and the character may also be influenced through variations in its nutrition. Whether the child can be influenced either in its form or character by means of any mental impressions of the mother is so extremely improbable that it is hardly necessary to call attention to it. The popular belief in the effect of

maternal impressions is simply due to the fact that formerly this belief was held by the profession. Many of the cases cited as illustrations are hardly worthy of consideration because they have not been reported with any degree of scientific accuracy.

Having spoken of the form and character of the individual as determined by both the germinal and intrauterine factors, I will now speak of the pathogenic factors, and chiefly of the infections and intoxications. That there is such a thing as germinal infection, that is, an infection taking place in the ovule or sperm cells, is, I think, quite well established. The experiments that have been made by Baumgarten and others, for example, in infecting hens' eggs with tubercle bacilli, show that not only infection can take place, but the very interesting fact that the germs can remain latent for a long period of time, and explain the seemingly strange fact that an egg can be infected and not lead to abortion. That is to say, the tubercular germs can remain in a latent condition in the growing egg, and perhaps a long time after the fetal stage. These infections have been, so far as I know, brought about experimentally on the ovule alone. The possibility of infection of the sperm cells must rest on clinical evidence, although my knowledge of the literature on this point is not very extensive. Clinical evidence as it pertains to syphilis seems so convincing that we must admit that the sperm cells can carry the syphilitic infection to the egg without causing any infection of the mother.

As to infection during intrauterine pregnancy, our present state of investigation shows that it is not as common as was formerly thought. It was formerly a common idea that infection through the placenta was an extremely frequent occurrence. According to more exact observation in later times, germinal infection plays a much more important part than was formerly believed and placental infection is much less common. That there is such a thing as placental infection, for example, in the case of smallpox or of syphilis, is undoubtedly true. I shall not go over the large amount of work that has been done quite recently on this subject, but it seems to me the conclusions of Duering represent the best knowledge of the present time, viz.: 1. That in case of a healthy placenta infection does not occur. The healthy placenta is a perfect filter to keep the germ from the fetus. 2. Microbes may cause, in the placenta, hemorrhages, emboli, various destructive processes which destroy its filtering power, so that infection may occur later.

One other extremely interesting question is that of immunity or immunization, and the general question of intoxication or immunization of the child *in utero*. I am not speaking here of hereditary immunization or that due to germinal factors. It is necessary to premise that by immunity I allude particularly to what Ehrlich calls passive immunity. Ehrlich distinguishes between active and passive immunity, one being a condition in which the tissues are insusceptible to the germs; it is more or less a permanent condition. On the contrary, passive immunity means a condition in which there is present antitoxin or some substance which enables the system to withstand the action of the germs, but it is more or less temporary. That there may be placental immunization, as well as a placental intoxication, seems fully established. The placenta, as has been known ever since the investigations of Gusserow, and even before him, permits the passage of various substances in solution into the fetus, and these antitoxins or immunizing bodies are probably solid substances which pass through the placenta.

CHILDHOOD IN RELATION TO ADULT DISEASE AND DEFECT, which was considered from various standpoints, was the subject for discussion.

NUTRITIONAL ASPECTS.

DR. FRANK X. WALLS spoke on this topic. He said: In considering the nutritional aspects I shall confine my remarks largely to that part of nutrition which comes under the head of food assimilation. This is a phase of child study which deserves most serious consideration, because not infrequently problems of great importance come up that are very difficult for us to interpret. During the first years of life the child is in a plastic, impressionable state, and so far as we can do, we ought to guard the child against any external im-

pressions which may mar it, as these impressions, when repeated, tend to become more or less permanent and may warp the physical and intellectual growth of the child. Of all factors that make up the environment of the child, food is the most important, and the question of food is one which we as physicians can influence more than any other factor in environment.

During pregnancy it is our duty to see to it in the interests of both mother and child that the mother is properly fed. Dr. Kiernan has reminded me that a few years ago a certain fruit diet was recommended for mothers during pregnancy, which might render their labors easy, that is, decrease the pain. He tells me that the evidence as to ease of labor was conflicting, but the testimony as to the condition of the child was not. The children were nearly always weak, pale, anemic, and soon subjects of arthrepsia. When a child is born it is very fortunate if it can obtain its nourishment from its mother.

We shall not consider the rules or instructions that should be given to the mother during nursing, but pass over them because of lack of time and consider briefly the condition of artificial feeding which presents problems of greater importance. Formerly physicians did not consider the subject of a suitable diet for infants as much as they should, but more recently in this country, through the efforts and scientific study of Jacobi, Holt, Rotch and others, we are becoming more active in this phase of child study. The child, we should remember, must receive an amount of food sufficient in quality and quantity not only to nourish it and to take the place of waste matter, but a surplus must be assimilated, so that it may have something on which to grow. We are all familiar with instances of immature children who perhaps with great care have been fostered and nurtured to the degree of considerable strength; and on the other hand, with children who have been born strong and robust, but who, under adverse conditions, soon became stunted and dwarfed in both mind and body.

Cheadle, in his excellent book on infant feeding, has summarized the conditions that the food for infants should conform to: 1. The food must contain the different elements in the proportions as they are present in human milk. 2. It must contain an antiscorbutic element. 3. The quantity of food in twenty-four hours must equal about one to three pints of human milk. 4. It must not be entirely vegetable; it must be made up in great proportion of animal material. 5. It must, in form, be suited to the physiologic conditions of digestion in infancy, and lastly, it must be free from all taint of decomposition.

Fresh cow's milk adapts itself to these requirements. Cow's milk we are to look on as a food for infants, not as a simple food, but as a complex food, that is made up of proteids, carbohydrates, fats, mineral matter and water in varying proportions. In administering such food to a child we should modify it according to the requirements of Cheadle, so that it will conform to the digestive functions of the child. In order to do this we must familiarize ourselves with the symptoms of excess or deficiency in each and every one of these ingredients of cow's milk. Having mastered this, we then can intelligently prescribe a milk for the child.

The diseases that may result from faulty food may be perhaps classified under three general heads: 1. We may have those diseases brought about by the direct irritation of the gastro-intestinal tract—the dyspepsias, gastro-enteritis, enterocolitis, etc. 2. We may have a group of diseases which are dependent on the absorption of toxic materials either introduced with milk or produced by the fermentation of milk in the gastro-intestinal tract. Lastly, we have the disturbances of nutrition which are brought about sometimes by an insufficient quantity of food, but more often perhaps by a want of some one ingredient of food rather than a lack in the total quantity of the food taken, a deficiency in the fats, proteids, or antiscorbutic elements, or whatever it may be. These diseases are classed under the head of anemias, atrophies, rickets, scurvy, etc.

This subject of food or nutrition in childhood, particularly in infancy, is one of the most important subjects that could be presented to us as physicians, and one that requires considerable study, much observation and experience, as well as

tact in its administration, and I think in proportion as we master this subject and carry the principles out in private practice, in like manner will we find the children improve under our care, and become strong and hearty—*mens sana in corpore sano*.

DR. WILLIAM L. BAUM.—The child, as Havelock Ellis has shown, prophesies a promise of advance rarely realized in maturity by either sex. Arrested development of this promise of the child type will result in masculinism and femininism. In the first, female organs and functions occur, but with greater or less male predominance. In femininism the reverse obtains. Femininism, with which alone I propose to deal, may be evident in gynecomastia, or in cryptorchidism, or sloping shoulders. The nervous system may be so distorted that at puberty the sexual instincts may be female in type. These may be expressed more in extreme modesty in type. These intense liking for female rather than male occupations. Often the sex side is quiescent until awakened at puberty. Sexual education at this time, rather than any inborn tendency, may give the sex direction. Male pseudohermaphrodites—brought up as females—often display unusually womanly qualities, are married, live happily, and die ere their real sex is discovered. While, as just pointed out, the mental state of the pseudohermaphrodite may be that of the sex to which it is assigned, still to this there are more exceptions than adherence. Neugebauer (*Contrablt. f. Gyn.*, May 6, 1899), among 653 cases found 50 marriages between members of the same sex, 46 marriages between two men, and 3 between 2 women. This occurs more frequently among males, because the pseudohermaphrodites are much more frequent than the female. In the statistics collected there were 437 males, 125 females, and 11 individuals whose sex could not be determined. The results of these marriages were invariably unfortunate, leading to divorce, suicides, unhappy family relations, and even murder. Neugebauer is of the opinion that these occurrences are more frequent than statistics show, but are kept quiet for fear of unpleasant publicity. It is not an uncommon occurrence for marriages to be interrupted at the last moment because of the discovery of the hom-sexuality of the engaged couple. He impresses on the physician the necessity of careful study of pseudohermaphroditism, since a single word from him can avert these unhappy events. A careful examination in a majority of cases will reveal a hypospadiasis penisclerotia with a rudimentary vagina.

Neugebauer, however, ignores the sexopsychic training, which is as important as the malformation. Sensual experiments by tribadic relations with females might develop the male mental state in seemingly feminine male pseudohermaphrodites. As these would be likely to occur during puberty (15 to 25), the mind would then be peculiarly plastic to their influence. The sexual appetite has its origin in all probability in a desire for satisfying protoplasmic hunger. Its differentiation is late, hence the production of abnormalities in it result from training as much as in an inborn tendency. The influence of the sex perversions, inclusive of perversions proper, inversions and perversities on sociology, is much greater than would be assumed from the prurient prudery with which the subject is discussed. As has been already shown and is well remarked by Havelock Ellis (*Psychology of Sex*), there are two phases of current thought ancient sexual inversion. One attempts to enlarge the field of the acquired—represented by Binet, who, however, recognizes predisposition; Shrenk, Notzinz and others. The other seeks to enlarge the sphere of the congenital—represented by Krafft-Ebing, Moll and others—and it usually happens that there is truth in both these views, albeit those who represent the acquired frequency deny any congenital element, and ascribe everything to early association or suggestion. The logical way of regarding sexual appetite is as an inborn impulse developing about the time of puberty. At this period suggestion and association, as already stated, may come to play a part in defining the object of the emotion. There is great indefiniteness in the aim of the sexual impulse at this time; frequently signs of sexual emotion directed toward the same sex occur, but the normal passion has usually vague and undifferentiated sexual character at puberty. The channel of sexual emotion is not thereby turned into an utterly abnormal path. The seed of suggestion is sown in various

soils. In the many it dies out, in the few it flourishes. The cause can only be a difference in the soil.

Meynert and Naehle deny congenital or even sexual instinct at all. They deny instinct for food.

Kiernan suggested, in 1884-88, that sexual inversion was puberty—a variation perhaps due to imperfect sexual differentiation or reversion of type. Masturbation may be a cause of this training, the masturbation resulting from purely physical and often unconscious causes. Stone or uric crystals in the bladder often cause an irritation at the head of the penis; pulling at this to relieve pain leads to the habit. Too tight prepuces with resultant retained secretion have the same effect; so as do ascariads and scybala in the rectum. In dealing with masturbation the physical aspects should be first sought for the others later. The type of voluptuous tendency is often directed by the circumstances of the first intense voluptuousness. These often cause anomalies in voluptuous imagery, as regards sex. School strain is a factor in this direction, which should receive more attention than it does. As Talbot (*Degen-cracy: Its Signs, Causes and Effects*) remarks, noticeable effects of the nutritive disturbances produced by school strain are local irritations about the sexual organs. Neurotic persons are liable to nerve storms which express themselves in emotional displays or restlessness, or nagging tendencies. These often coincide with the uric acid tendency to express itself in "storms" like other periodic phenomena of the nervous system. In consequence "sexual storms" result in neuropaths, whether the neuropathy be inherited or acquired. Local genital organ irritation leads to scratching. From this are produced "masturbation" storms, which the subject loathes, but can not control. These occur, as already stated, from the direct effects of constipation, and from the worms and other parasites which constipation fosters in the bowel. Teachers, by compelling children to retain urine through fear of masturbation, often lead to what they intend to prevent. At the outset masturbation and sexual explosions are often a mere physical expression of school strain, destitute of moral significance. They are removable by removing the school strain and its consequences. If strengthened by protracted existence they intensify degeneracy due to school strain.

One important element of possible danger is already pointed out—training in the sexual sphere. To avoid and at the same time to enlighten is the problem presented. In dealing with this position, the great requirement—balance, not repression—must be kept in mind. Masturbation is very frequently an expression not of mental or moral deficiency, but, as already stated, of purely local—first in many cases—physical conditions. It can not be too strongly reiterated that irritation—from the presence of worms in the rectum or vagina, an intensely acid urine or constipation—to male foreskin, or female clitoris produces local itching, the attempt to relieve which leads to masturbation. Granting all that has been said about the deteriorating effects of masturbation, especially in degenerates, the source should first be sought here. Attention to these physical states will often prevent the development of this practice, and its resultant moral deterioration.

In dealing with the sexual appetite, it should be remembered that encouragement of healthy modesty is a duty in both sexes, and pre-eminently so in the male. Much of what is called "sexual purity" is but too often an expression of sexual perversity. While great stress has been laid on the evil effects of association between boys, too little stress has been laid on the danger of training of boys by women. The sexual history of boys demonstrates that their initiation into sexual life was often first at the instance of women older than themselves, frequently servants, but not rarely sexual "purists" or persons whose ostentatious religiosity covered a sexual perversity. In the healthy association of the sexes there is very little danger, but in such morbid association there is much; the more that the morbid generally conceals itself under religiosity and the allied phases of sexual perversion. Great stress has been laid on the dangers of coeducation, but the evidence is growing that education limited to one sex is the source of greater dangers to both boy and girl. It is a matter of common observation among genito-urinary specialists, alien-

ists and gynecologists that much of the alleged "purity" so ostentatiously displayed by female graduates of colleges limited to one sex is the offspring of sexual perversion, which, whether congenital or not, has been fostered by the environment of one sex without the modifying healthy influence of the other.

Chicago Society of Internal Medicine.

Meeting held June 29, 1899.

FOREIGN BODY IN A BRONCHUS—OPERATION AND RESULT.

D. JOSEPH M. PATTON—I must beg indulgence for presenting a clinical case which I think is interesting and worthy of study. This young man, in September, 1897, was employed in and about a restaurant in New York city. While engaged there in helping the culinary department, he was one day eating a plate of soup, and on being called suddenly to some duty he took a mouthful of this soup hurriedly and thought he noticed a piece of bone in the soup. He swallowed it hurriedly and was immediately seized with a violent attack of coughing and dyspnea, during which he expectorated a little blood. He soon recovered and went on with his work, continuing his duties about the place for several days, but more or less troubled all the time with coughing. He says that in performing his duties, if he stooped over to pick up anything, he would notice that the position he assumed would "shut off his wind," as he expressed it, and he would have a severe attack of coughing. He denies, however, that at that time or subsequently he was troubled sufficiently with coughing or with dyspnea to incapacitate him from work. He also denies that he had any illness which confined him to bed at any time after the occurrence of the accident. Some time in June, 1898, he appeared at the Chicago Policlinic, and since that time has been under the joint observation of myself and Dr. John Fisher. At the time he appeared there he was troubled with a cough and purulent expectoration, and exhibited a temperature of from 99 to 101.5 degrees. He had no night sweats. Cough was quite troublesome, not particularly paroxysmal, and the expectoration was free, with a decidedly fetid odor. He had lost a good deal of flesh, and was losing steadily at that time. On examination of the chest at that time it was noticed that the air entered the right lung less freely than the left; the right lung would expand almost, if not quite as much as the left lung, but it took a little longer to do it. It was hardly what you would call suppressed respiration. The expiration was prolonged. Just below the right mammary region there was an area of partial dullness with a few rales; in the center of this area there was a distinct stenosis in the bronchial tube. Inspiration was wavy and at times interrupted; expiration was prolonged, but not wavy. Fremitus was slightly increased; the vocal sounds were increased in pitch, but there was no bronchophony. The respiratory murmur was tubular and increased in pitch. There was some very slight inspiratory recession of the intercostal spaces below the point of stenosis. The point of stenosis was at the lower angle of the scapula which you see; this is where the inspiratory sound was distinctly interrupted.

He was under observation at the clinic from that time until February of this year. For a time he improved a little in a general way, then seemed to grow worse. Expectoration became more purulent, more fetid; fever became more hectic, and he lost flesh and appetite. An X-ray picture of the chest was taken, which plainly showed the ribs and sternum and a pleuritic effusion in the right pleural cavity, which came almost to the nipple level. We made an exploratory puncture and obtained some serum, so that we know the shadow was from the effusion. The picture did not show this area of partial dullness around the point of stenosis at all. There was nothing about the picture that would indicate any foreign body in the bronchus.

In February, Dr. Van Hook operated on the case before the students of the Northwestern University Medical School, in the mamillary line. The operation was performed in two tempos, the object of the first incision being the formation of adhesions between the pleurae. An incision in the line of the fibers of the major pectoral muscle was carried down to the fourth rib in the right mamillary line, two inches of rib were resected, and a dressing saturated with 10 per cent. solution of zinc chlorid applied.

One week afterward he opened into the lung with the actual cautery, first exploring the lung with an aspirator-needle in a number of different places without striking any foreign body, or without obtaining any secretion, fluid, or pus. He then went into the lung in three different directions with the actual cautery, to a depth of two or three inches, opening into a large bronchus. There was a little fetid matter discharged through the opening in the bronchial tube. Air passed quite freely in and out of the lung. The wound was drained with a tube, and the next day the patient was out of bed and downstairs, and wanted to go out on the street. He felt very well. The tube was removed in about one week, when discharge had ceased. After that he improved for several weeks; temperature was lower; there was less expectoration. In about ten days the wound was allowed to close. In the early part of April it was noticed that the lower lobe of the lung, posteriorly, was dull, and that there was no air getting into it, it evidently being in a state of collapse. Following this there developed marked tubular breathing of a cavernous type, and well-marked pectoriloquy just below the lower angle of the right scapula. These signs were accompanied by a temperature of hectic type, and by an increase in the amount and fetid character of the sputum. It was thought that these symptoms might be due to the development of an abscess in the posterior portion of the lower lobe of the lung, so an operation in this locality was advised. As no cavity was found, these signs of a cavernous character were probably due to a more free entrance of air into the bronchus supplying this area of lung, due, probably, to some change in the position of the obstructing body. The lower margins of the lower lobe being previously collapsed and the bronchus being patent, the effect would be the same as we frequently observe in marginal collapse of the lung from pleural effusions—i. e., signs simulating a cavity. In view of the outcome of the case we cannot regret the misinterpretation of these signs, as the admittance of air into the lower bronchial tract through the opening made at the second operation was undoubtedly the causative factor in expelling the foreign body. On April 27, the patient being then at the Policlinic Hospital, Dr. Van Hook resected in the region of the eighth rib just below the lower angle of the scapula. There were pleuritic adhesions, so he went directly into the lung with the actual cautery, and opened into a posterior bronchus, making a free opening, so that air entered and came out quite freely. The tube was inserted and the wound packed tightly; the next morning he had quite a severe coughing spell and choked very badly, and during this coughing spell he ejected, through the mouth, this piece of bone. It is a vertebra from the neck of a chicken. It measures two centimeters in its transverse diameter, and one centimeter and eight millimeters in its anteroposterior diameter. It is in a good state of preservation (exhibits specimen). He was up the next day, down in the clinic room, and felt all right. The tube was kept in for about a week, after which the opening was allowed to close. His temperature gradually declined; he improved in strength and flesh; the cough has gradually disappeared. He now has no cough or temperature and has not had any for several weeks. His appetite has improved; he is at work every day and feels practically as well as he ever did.

This case is interesting from two or three standpoints, first as to the clinical history. The clinical history of these cases differs according to the nature of the body which is taken into the bronchial tract. Small bones like beans and peas, usually create a great deal of disturbance because they may get into the smaller bronchi and induce immediate collapse, and as a rule soon bring on lobar pneumonia, and are very shortly followed by more or less extensive bronchial dilatation. Small pieces of vegetable fiber, like blades of grass or such like, small spicule of bone, etc., usually create more disturbance than larger bodies, because they produce more irritation in the bronchial tract. With some of the larger bodies, like this piece of bone, which do not occlude the bronchial tract entirely, it is remarkable how little disturbance we have afterward. This piece of bone was in the bronchus for eighteen months, and beyond the cough, expectoration, fever, and gradual emaciation, there was no disturbance. He might have had just as much disturbance from a localized tuberculosis as he did from this. That is the case with many bodies, although large, if they do not occlude the bronchial tract entirely.

I remember the case of a boy who sucked a woman's ordinary hatpin, five or six inches long, into the trachea, into the left bronchus, head first; the upper end became transfixed through the wall of the bronchial tube. It was in there several days, was taken out by tracheotomy, but while it was in there the boy apparently had no disturbance whatever. He had practically no cough, no dyspnea, and did not seem to suffer at all. The only thing that could be noticed was a slight difference in the amount of air entering the left lung.

On the other hand, the round bodies which occlude the bronchial tract entirely may result in extensive collapse and in pneumonia and create much more disturbance.

The next point is as to the course to be pursued in these cases. In this class of cases it is different from bodies which lodge in the trachea, or which are coughed up into the trachea at every paroxysm of coughing. There tracheotomy will often suffice, and these bodies can be picked out of the trachea, sometimes by forceps, by a string, or by a wire spatula, or something of the kind, and a coughing spell may bring the foreign body up within reach. In this kind of case it is a different matter. Here is a body which gets down into the bronchus and is fixed there. It does not come up, nor does it create much irritation. In this case a great deal of doubt was expressed by a number of physicians as to whether there was anything at all in the bronchus. They were skeptic about it. The danger from the presence of these foreign bodies is from pneumonia and collapse of the lung, secondary pneumonia and bronchiectasis. The latter is sure to develop, and pneumonia most probably will, so that there is no hope through letting the case alone. There is nothing to be gained by waiting. If one is sure that a body of this kind is in the bronchus, it is unnecessary to wait for symptoms, and if it can be localized I should advise going after it. The chances of the foreign body being coughed up, if there is collapse of the lung below, are very slight.

When the first operation was done on this young man we went in too high. This was probably my fault, as I advised operating at that place. We know that in operating for tubercular or abscess cavities in the lung, it is a common thing to find the cavity situated much higher than we are led to believe by the physical signs. That is the rule, and for fear of going too low in this case I think we did just the opposite. There was no collapse in the anterior margin of the lung; there was no retraction; no sclerosis, consequently the lung was not pushed up at all. We got in too high above the bone. The lung was carefully searched with an aspirator-needle, and whether anything could have been gained by needling with a fine needle, I do not know. When the operation was done behind and air allowed to enter the bronchus, the first violent attack of coughing forced the bone up into the trachea and we got it out. You might say that that is perhaps good luck, but I think it is the reason why the foreign body came out.

As to the surgical aspects of the case I have nothing to say except to remark that the surgery was well done and there was absolutely no disturbance in the lung whatever. He seemed just as well the next day as he was the day before. There was no pneumonia; the temperature did not vary; he had no pain or disturbance of any kind.

A question for the future is as to whether the sclerosis developing around this lung will interfere with the caliber of the bronchial tube and result in bronchial dilations. This is something we do not know, but that is quite possible. As a secondary result of these operations we have sacular dilatation of the bronchial tube. So far we can not see that anything of the kind is taking place. It is known that bronchial dilatation occurs very soon after such an occurrence as this, remarkably so.

DR. INGALS—Was respiration about the same in the upper part as lower down?

DR. PATTON—There was perhaps slight compensatory action of the upper lobe, but the respiration in the middle lobe of the right lung and the posterior part of the lower lobe, when he first came in, before the effusion was noticed, seemed to be a little slower, but quite good.

DR. INGALS—Supposing the foreign body had been lodged in the main bronchus, what would be your opinion of going through the chest for it?

DR. PATTON—On the right side there would practically be no danger in operating in the region of the right main bronchus;

on the left it would be more difficult. I should consider the result likely to be doubtful if a tracheotomy were done for the removal of such a body in the main bronchus. In the case I referred to, where a pin was taken out of the left bronchus by a tracheotomy, the pin was grasped nearly in the middle; the upper end was transfixed through the wall of the bronchus, and the pin was grasped about two inches from the point, and in twisting it it was broken, although the head of the pin was at least three inches farther in the bronchus. Very many expedients have been devised for getting foreign bodies out of a bronchus. Someone, for instance, has advised pouring into the trachea an ounce or two of liquid and inverting the patient immediately, being prepared to do a tracheotomy at once in case any difficulty was encountered. That is taking a good many chances. I would not care to search for a foreign body in that way. But this case illustrates the extreme difficulty of exactly localizing the point of obstruction for the purpose of operating.

DR. EDWARD F. WELLS—I would like to ask Dr. Patton whether in his experience or reading he has noted that perhaps frequently a foreign body has been expelled by coughing during the operation or shortly after, when it has not been found during the operation, or has not been found at all.

DR. PATTON—In the majority of cases the foreign body has been expelled by way of the mouth subsequent to the operation.

DR. WELLS—The reason I asked that question is because many years ago a child inhaled a piece of peanut. Pneumonia followed shortly afterward and an abscess developed. An operation was undertaken, and after an incision had been made down to the pleura, an aspirator-needle was introduced three times in different directions, and nothing whatever was found. But after the third introduction of the needle the child suddenly became choked, coughed spasmodically, and, to my recollection, expelled three-quarters or an ounce of pus with the piece of the peanut. My attention since then has been called to quite a number of cases in which the foreign body has been expelled during the operation or very shortly afterward, when efforts to find it during the operation were utterly futile, and it has afterward been expelled by coughing.

DR. PATTON—Godlee cautions us against removing the tube and allowing the opening to close too early. These foreign bodies may be expelled through the opening some little time after the operation, and he cites a case of that nature in a boy. The boy had inhaled the point of a top into the bronchus, he operated, and some time subsequent to the operation the boy expelled the foreign body through the opening that he had made. I think that is a good point because there is no objection, particularly, to keeping these openings patent for some little time after the operation, if they are dressed properly, and a small foreign body may readily make its exit in that way.

DR. WELLS—Did I understand you to say, Dr. Patton, that there is usually a good deal of difficulty in locating the foreign body?

DR. PATTON—There is a good deal of difficulty in localizing the foreign body after you get into the lung.

DR. WELLS—I hardly agree with that, from the fact that some impediment exists to breathing which can be usually definitely located. It is rather easily done. Is not that your experience?

DR. PATTON—Oh, yes. But I have reference to localizing the foreign body after you get into the lung.

DR. WELLS—How frequently an operation is undertaken for the removal of a foreign body apparently located by the physical signs, and yet nothing is found at that point, but the foreign body is afterward expelled.

DR. PATTON—That is true. Difficulty arises from localizing the foreign body after you have gotten through the pleura.

DR. INGALS—What was the objective point in the second operation?

DR. PATTON—It was a question at that time whether it was merely collapse, or whether he had aspirated some purulent material in there and had developed a cavity. The signs at the time of the operation were almost identical with those of a cavity. I refer to those peculiar physical signs we get where there is collapse of the margin or lower portion of the lung, retracting it and giving the signs which simulate those of a cavity. As there was no air going into the lung, and it was doubtful whether it was merely collapse or a cavity, I advised a second-

ary operation in this region, to see whether there was a cavity there or not and to open into the bronchial tract and let the air in. There was no cavity, but simply collapse.

DR. E. FLETCHER INGALS—I have had no experience in bronchotomy. I have had, however, considerable experience with foreign bodies in the bronchial tubes and trachea, but I have never opened the chest for the extraction of the body. I am greatly pleased that such cases may have so good an outcome. I have not hitherto thought that the position taken by Dr. Patton, viz., that it is better to operate as soon as we can localize the foreign body, is the best for the patient. I have thought that because many of these bodies are spontaneously expelled sooner or later, and from the fact that there is considerable danger attending bronchotomy, it is better to wait for a time, unless there are urgent symptoms, before doing a more radical operation than tracheotomy. In this case the operation was certainly the only thing to advise, and it would have been negligent to wait. I wish to ask the author of the paper whether in acute cases he believes it better to operate as soon as the foreign body is localized. The development of bronchitis, with a little dilatation of the tube, or irritation of the lung and possibly formation of a cavity in the lung itself, may eventually be the cause of secretions and expectoration which will enable the patient to get rid of the foreign body without any operation.

I remember reading of a case in which a bit of hickory-nutshell, which was retained in the lung for many years, was finally coughed up, and the patient made a good recovery. In that case it would undoubtedly have been much better could the foreign body have been found and removed earlier, but at that time operations could not be performed as safely as they are now.

I have on two or three occasions removed foreign bodies from a bronchus. On one occasion I removed a large kernel of corn from the very farthest end of the right bronchus. Again, in another case, I removed a sharp spicula of bone from the farthest end of the left bronchus. In still another case I removed a bit of wheat from a bronchus.

I was surprised not long since at hearing a gentleman of high standing recommend leaving such a foreign body entirely alone, hoping that the patient would have an attack of cough that would expel it. His view was that there was no very great danger from the operation, but little from delay. In the case of a foreign body of any considerable size in the trachea, operation should be advised at once, after other procedures have been tried, such as inverting the patient. There is always danger while the foreign body remains, but in a large percentage of cases they will be spontaneously expelled. Even small bodies are often difficult to remove.

I operated, two or three years ago, on a woman who had inhaled about five-eighths of an inch of a match. I thought I could localize the foreign body at a point about an inch and a half below the main right bronchus, by the pain of which she complained, but I could not tell from the respiratory murmur; yet I was satisfied there was something in the air-passages; I did a tracheotomy, but did not get the foreign body. I kept a tracheotomy-tube in the trachea for a few days, as I believe it is best to do in cases where we do not find the body we are after, and finally told the interne that he might take the tube out; the same day he removed the tube she coughed up the match.

I once operated on a child for a button in a branch of the bronchus, that had gone so far in that it could not be reached. In that case I felt confident the body was present, from the localized rales, but there was no distinct obstruction. The tube was worn for four or five weeks, but the button was not secured until about five weeks afterward, when it was coughed out. The usual recommendation is that we stitch the edges of the trachea to the integument, if the foreign body is not obtained at the time of the operation. This does not seem to me a good procedure. A better plan is to have in a large tube for a few weeks, and make repeated efforts to get rid of the foreign body.

I should think that the danger would be very considerable in a bronchotomy when operating near the root of the lung, much more so than at a distance like the operation in this case; but I have no doubt a modern surgeon would get in there.

DR. PATTON (closing the discussion).—I agree with Dr. Ingals in regard to the class of cases he has cited and outlined. As to the advisability of operating early in these cases, we must draw a distinct line between the class of cases he has cited and the

class to which this case belongs. The point is simply this: In small bodies which get into the trachea, and where we are in doubt as to how far in they may be, which are not localized by any distinct physical signs, it would be very doubtful surgery to go after them any further than do tracheotomy and adopt the course advised by Dr. Ingals. In this class of cases we have a different condition. Here we have a distinct stenosis to deal with. The fact that the stenosis is not complete and does not result in collapse of the lung supplied by the tube occluded is only more positive evidence that it is a local affair and can be reached and should be sought for. If we had a smaller body, it would probably go in a little farther and possibly result in immediate collapse and pneumonia. It would be a much more difficult thing to get at. But the fact that the collapse came on after the stenosis occurred, coupled with the fact that there was diminished respiratory capacity of that lung for a long time after the occurrence of the stenosis, and not complete obstruction, and the additional fact that there were local signs of stenosis of the tube, show conclusively that there is a localized condition that you can reach, or stand a good chance of reaching, and that the patient's prospects for complete recovery are much better by operating early and not waiting until we get a cavity or bronchial dilatation, which is sure to come, and which, when filled with secretions, will be likely to result in lobular pneumonia, probably septic, at a more or less early date, and which will result in further collapse of the lung and possibly in gangrene. And so it does not appear to me wise to wait for these conditions to develop before searching for the foreign body. That, I think, is the position assumed by Godlee, who has done much lung surgery. In the class described by Dr. Ingals, I agree with him as to the course to be pursued, and success is most often obtained by adopting the course he advises.

DR. INGALS—Supposing you saw a case in which there was obstruction by a foreign body similar to this, would it be your idea to operate within the first week, or to wait a month or two to see whether the body would be coughed out?

DR. PATTON—it is difficult to make a direct statement in reply to Dr. Ingals, for the reason that we are not usually present when these accidents occur. We have to take the statement of the patient to a great extent, and some physicians are rather backward in accepting the statements made by patients in this regard. I believe that we should take the statement with a good deal of credence, because he or she, as the case may be, is not likely to misinterpret the symptoms at the time, and he is not likely to greatly exaggerate because he is conscious of the fact that a body has gotten into his trachea. If we do accept the statements of patients and feel sure that there is a foreign body in a bronchus, and we believe it to be large enough so that it will probably not come out through the larynx, I do not see any use in waiting if we can localize it at all. On the other hand, this case came to us with the statement that the foreign body was inhaled months before. We did not at the time feel that we were warranted in operating until we saw what course the case was going to take. But as the bronchial dilatation grew worse, as the fetid expectoration became more abundant and the fever ranged higher and loss of flesh continued, we felt there was no use in waiting longer until he actually developed some serious condition. I think it all depends on how certain one may feel as to whether a foreign body is in there or not, and how much chance he can take.

DR. INGALS—If a patient were getting on comfortably you would feel more like waiting than if fever were developing?

DR. PATTON—I should; yes.

Chicago Neurological Society.

Regular Meeting, April 25, 1899.

(Continued from Page 284.)

DR. ARCHIBALD CURRIE—I would like to ask attention to a form of brain disease which is comparatively rare, and of which I have seen two cases and suspected the same condition in a third instance. The first case was a man, 50 years of age, who, at the age of 23, was digging a well, and some boys, in trying to annoy him, tossed a pebble into the well, which had reached a depth of about twenty feet, striking him in the parietal region. It simply angered him at the time, made a trivial

scalp cut, and very little was thought of it. Afterward he acted as a conductor in the railway service for many years, gradually developing more or less disturbance of sensation on the right side, and finally became hemiplegic. He would have convulsions affecting the right side at times. Frequently these convulsions commenced in the right hand, becoming generalized, in other instances only the right upper extremity was involved. At one time he was actually incapacitated by right hemiplegia, which partially subsided for a time and subsequently became complete. I saw the man some twenty years after the original injury; he was hemiparetic, and had occasional convulsions on that side. I advised an exploratory operation, and when the trephine had been used for a few moments suddenly there was a gush of hemorrhage of the most startling character I have ever witnessed. It was with the greatest difficulty that it could be checked by plugging with iodoform gauze, some of which was pressed within the skull, and not until the carotid was ligated on the same side was the hemorrhage controlled. Dr. McArthur did the operation, and it was our belief that he had opened an aneurysm within the skull. The man improved temporarily and went to Southern Ohio. Three years later he died and an examination was made by a physician, who stated that the left side of the head was empty except for the rags the doctors in Chicago had tucked into it.

Another case I saw at about the same time was a young boy who had fits which commenced in the left hand. There was a history of cephalic traumatism, the exact nature of which I can not now recall. Finally, being very urgent for an operation, it was done at the County Hospital, by Dr. T. A. Davis. He cut down through the dura, explored the brain and suddenly got a terrific hemorrhage, and yet was able, by plugging the cavity with gauze, to check the bleeding. I saw the boy two days after, when the dressing was removed, and in withdrawing the gauze there was a cavity large enough to accommodate a hen's egg, lined with dense, fibrous, glistening membrane, reminding one of a large arterial pouch. The boy recovered from the operation but I have failed in all attempts to trace the case.

A young woman, 21 years of age, came from Quincy. She gave a history pointing to brain disease. There was a hemiplegic condition, spasticity and tetanoid spasms. She gave a history of having had a decided subjective bruit synchronous with the pulse. Upon auscultation I could objectively make out a bruit corresponding to the indicated location of the disease. I suspected that there might be an aneurysm. She is still alive; I heard from her last week, and her condition remains about stationary.

Aneurysmal tumors should be detectable by the X-ray. If we can make out the arch of the aorta, the heart and other blood-channels by this means, these growths should also give a shadow.

DR. DANIEL R. BROWER—Seeing these interesting cases of Dr. Patrick recalls an experience I had about a year ago. A man, 55 years of age, was brought to my office by a physician, as a well-marked case of Jacksonian epilepsy, and with the classical symptoms of intracranial tumor. The case was operated on by Dr. Senn. He remained here for a short time under treatment by potassium iodid, with very great amelioration of all his symptoms. The paroxysms, which were several a day, had ceased, and his mental condition improved. He went home, continued the treatment for a time, stopped it, and very soon his symptoms returned with great exaggeration, and he was again brought back to the city. Dr. Senn then operated upon him. The paroxysms began in the hand; the tumor was supposed to be located in the hand center. No tumor was found by the operation. He gave a history of having some years before had considerable trouble with a suppurating ear, which had existed for a long time. Dr. Senn thought it might possibly be a mastoid abscess, but he found none at the operation. A few days afterward the man died. A post-mortem examination was made, and revealed a subcortical tumor, the size of a walnut, and an abscess in the mastoid cells. I have never seen any but temporary benefit from surgical interference in tumors of the brain.

During the past winter I have seen remarkable effects from lumbar puncture in relieving pressure symptoms in cases of cerebrospinal meningitis, and, inasmuch as the most distressing

symptoms of these tumors are due to pressure. I shall advise its use in the next case showing these symptoms.

DR. PATRICK—I have not recently followed the literature closely in regard to lumbar puncture in cases of tumor, but a couple of years ago I did keep track of it pretty thoroughly for a time, and the results from this measure, even for amelioration of the symptoms, were not particularly good. A number of cases died suddenly when puncture was made; in others the headache was enormously increased, so that patients complained bitterly of headache as soon as the fluid began to flow from the spinal canal.

DR. JAMES B. HERRICK—What Dr. Patrick has said regarding the mental condition of patients with cerebral tumors in the frontal region recalls to mind a patient whom I saw two or three years ago in whom there was a history of change in the mental condition, and later symptoms of severe headache, Jacksonian epilepsy, etc., so that there was little question about the case being one of tumor of the brain. The mental condition was, however, that of melancholia and despondency. While the patient was in the hospital he cut his throat with a razor. At autopsy the tumor was found in the frontal lobe, and by its pressure it had involved some of the motor centers, and induced Jacksonian epilepsy.

There is one form of tumor which, strictly speaking, might not be called tumor of the brain, that presents a great deal of difficulty in diagnosis, and that is the multiple tumor as it involves the meninges. A close resemblance to tuberculous meningitis may exist in these cases. One case of unusual interest I recall, seen about a year ago in the Presbyterian Hospital. Dr. Lyman asked me to give his clinic, and the interne in going through the hospital with me to look for material, said to me, "there is a good case of tuberculous meningitis in the children's ward." I looked the patient over, and thought it would be a beautiful case for clinical demonstration. I showed the case to the class as one of tuberculous meningitis. It was a child with a somewhat vague and indefinite history. There had been complaint of considerable headache and of irritability for several days, then two or three convulsions. The history was very indefinite as regards temperature. The child had gradually become comatose, and at the time I examined the patient there was complete coma. This was interrupted occasionally by the typical cephalic cry; the neck was rigid; the head drawn back; there was some paralysis of the ocular muscles; there was distinct optic neuritis, and most pronounced emaciation. The patient died a little later. An autopsy showed a walnut-sized sarcoma of the frontal lobe, with diffuse sarcomatosis of the pia mater of the brain and cord, the nodules varying from those of minute size up to those the size of a hazelnut. This rather rare case has been reported by Dr. Weaver in the *Journal of Experimental Medicine*.

In looking over the history again in the light of the post-mortem, I think there are two facts which should have drawn at least suspicion toward the existence of such a condition rather than that of tuberculous meningitis, namely, the long continuance of the disease, which extended over fully ten or twelve weeks, and the fact that there was but slight elevation of temperature.

DR. KUH—Was the fever intermittent?

DR. HERRICK—Yes, but the elevation of temperature was very slight, seldom up to 100.

DR. SANGER BROWN—I think we often lose sight of the fact that in cases of brain tumor many of the severest symptoms are actually neurosthenic, and not, as is too frequently believed, focal. I refer particularly to the headaches. These are generally, in my opinion, practically identical with those found in many cases of severe neurosthenia; that is, the patient will wake up from 3 to 5 a.m., after having gone to bed feeling fairly comfortable, with a most insufferable and profound headache, so prostrating that he often has to sit down and rest several times while getting dressed. He is often able, notwithstanding this, to take a fair breakfast, and after this gradually he is relieved, so that often not later than 10 a.m. he is fairly comfortable again, and this may not be repeated, with anything like the same severity at least, more than several times in a week. It may be accompanied with nausea and vomiting in both cases, and I favor the hypothesis that this is caused by the depressing effect of the growth upon the vital portions,

rather than by irritation of the meninges, or indeed by the irritation of any of the cerebral tissues.

I wish to draw attention also, by way of criticism, to the doctrine that pressure or irritation of a growth in the brain is the cause of optic neuritis, by stating that it quite frequently, or perhaps more properly, quite occasionally, happens that in cases of severe anemia, optic neuritis is found associated with the headache and symptoms of nervous prostration, which I have already referred to. I make these statements simply as suggestive criticisms upon the theories rather currently held.

Dr. RICHARD DEWEY—I wish to speak briefly of the symptoms in cases of brain tumor. It would seem that it is very rare to find any typical form of mental disturbance in these cases, most of them presenting symptoms the result of pressure or irritation of the locality that is affected, with a great deal of dullness, semi-stupor, apathy, and at times a good deal of emotional disturbance as the result of the irritation and pain. But in rare cases, something almost corresponding to maniacal attacks seems to make its appearance. The mental symptoms of cerebral tumors have received comparatively little systematic attention. These are certainly worthy of more attention than they generally receive. The surgeon or family practitioner scarcely ever gives desirable attention to these matters, and the family themselves are not likely to notice them. It is surprising how very great degrees of mental aberration may exist, both in cases of tumor and in other brain diseases, without intimate friends and acquaintances realizing them. There are certain forms of mental disease that may appear in almost typical form in cases of brain tumor. Two of them have been mentioned here this evening—neurasthenia and hysteria. Sometimes neurasthenia and hysteria are considered to be the sole causes of the disturbance. Another form of brain trouble which may be confounded with tumor, and is accompanied by symptoms of a more or less typical character, is paresis. Many, very many, of these cases have been reported as cases of paresis where subsequently brain tumor has been found to exist.

MULTIPLE SCLEROSIS.

Dr. M. L. GOODING—Our patient is a young man 23 years of age, of Russian parentage, the eldest of five children. He was born at term and was perfectly well up to the age of 6 years, at which time he had scarlet fever, but as far as we can ascertain this was followed by no renal, glandular, anginous, articular or aural sequelae. His parents, as well as three brothers and one sister, are living and well and free from any nervous or mental disease. No history or evidence of syphilis or alcoholism can be elicited.

When 7 years of age, he was lost during a blizzard and almost succumbed to the exposure to which he was subjected. Shortly afterward he began to exhibit the first symptoms of his present malady. He began to have some difficulty in walking, and seemed to become easily fatigued on exertion. He also began to fall behind in his school work, although previously maintaining a good standing. He further began to have occasional spells of headache and dizziness. At the age of 13 he had an apoplectic onset involving the entire right side. When 15 years of age he had ptosis of the right lid, lasting six months.

The unsteadiness in gait now became more marked, the limbs, as well as the trunk and head, being thrown into violent oscillations on the slightest voluntary effort. His speech also became defective. He has had no bladder, sensory or visceral disturbances. The lad appears well nourished and of fair size for his age. The skull, scalp, ears, teeth, gums and tongue present no abnormality.

As we observe him closely, we note the expressionless face, and as we engage him in conversation the incapacity for continuous mental effort is strikingly shown. There is slight obliteration of the nasolabial fold and drooping of the angle of the mouth on the right side.

Several years ago, while being shown before the class at the College of Physicians and Surgeons, peculiar grimaces, involuntary and uncontrollable, were remarked, but the condition seems now to be absent. As we listen to his speech we notice that the words are uttered slowly and in a monotone. This bradyphasia is associated with tremorlessness of the lips. As he attempts to walk, the stiffness and inco-ordination of his legs

prevent the performance of this act without the assistance of a cane. A pronounced swaying is present when standing with closed eyes.

Inco-ordination and a rough jerky tremor of the upper extremities are apparent, as we ask him to bring the tips of his fingers together, but on his coat or carry a glass of water to his lips. This is more marked on the left side. The knee-jerks are excessively exaggerated and ankle-clonus is present.

We can find no sensory disturbance. As we examine his eyes we detect a nystagmus—lateral, vertical and rotary. The right eye deviates somewhat from its proper axis, and is slightly turned inward. The pupils are normal. The fundus shows a secondary atrophy, with a peculiar discoloration of the disc.

From this array of symptoms we are enabled to make a very positive diagnosis of multiple sclerosis. On account of the gait, ataxia, tremor, nystagmus and speech defect, this disease may be confounded with the several hereditary ataxias. Friederich's ataxia can be excluded by the presence of knee-jerk with clonus and optic atrophy, and the absence of sclerosis and club-feet. The Romberg phenomenon, transitory oculomotor palsy, absence of family history, and early onset differentiate the picture from a hereditary cerebellar ataxia.

Syphilis of the brain and cord can be ruled out by the absence of history and signs of the disease, and the therapeutic test.

Brain tumor of the posterior fossa is sometimes accompanied by this form of gait, ataxia and nystagmus, but the more rapid progress of this condition, the greater degree of headache and vertigo and the positive symptoms of multiple sclerosis present no difficulty in eliminating tumor. As already indicated, the treatment by potassium iodid and mercury were futile. His nutrition has been maintained through appropriate regulation of diet, exercise and hygiene. For the relief of his tremor and agitation he has received the static breeze, together with a combination of

R. Sodii brom.	..... gr. x	65
Ext. hyoscyami fl.	..... gtt. viii	40
Liq. kali ars.	..... gtt. ii	10
Syr. hypophos. comp. q. s. ad.	.....	3i 90
M. Sig.	3i t. i. d.	

Topeka Academy of Medicine and Surgery.

Meeting Held in Topeka, Kan., July 10, 1899.

INFANT FEEDING.

Dr. J. M. PEERS presented a paper on "Feeding of Infants in Relation to Diarrhea." He spoke especially of the proper preparation and use of milk, showing the difference between cow's and human milk, and how to make the former suitable for infants' use.

Dr. H. B. HOGENDOORN emphasized the importance of artificial feeding.

Dr. I. BARNES recommended artificial food prepared with cream 2 parts, milk 3, lime-water 1 and water 10 parts.

Dr. R. McVEY spoke of food, heat and bacteria in causing infantile troubles, and the relation they sustain to each other. If indigestion is the result of bacteria, food and heat aid the development. He pointed out the dependence of the food and bacteria. It is a question whether the food or bacteria causes the indigestion, or whether the indigestion causes the bacteria.

Dr. O. DAVIS spoke of preparing the food by leaving the milk in a cool place until the cream rises, then drawing off two-thirds of the bottom with a siphon, and adding water and sugar.

Dr. S. G. STEWART—The mother complains as soon as the child begins to eructate; then try artificial foods. Cow's milk comes first. Sterilize it, then neutralize it with lime-water. We need to teach the laity that artificial foods are a poor substitute for milk, and should never be used when milk can be obtained.

It is generally a year after the introduction of a sick animal that the disease breaks out in a stable. Nothing is more common than, in an infected stable, to see a healthy cow become tubercular, some time after having occupied the place left vacant by the death of a tubercular cow. (Strauss: Tuberculose et son bacille.)

Sketch of Century's Progress in Medicine and Surgery.*

DR. J. WARD COUSINS, M.D., F.R.C.S., opened his address with a general review of the conditions of medical science at the beginning of the century, the birth of the modern school of medicine, the discovery of vaccination and its results, the progress in sanitary science and preventive medicine, the lessons of the cholera epidemic of 1848 and the Crimean War, and paid a tribute to the labors of Florence Nightingale in hospital reform, and to

ERNEST HART,

who was a devoted pioneer in preventive medicine, and labored with enthusiasm in the great questions of epidemic cholera, water-borne disease, vaccination, and many other topics. He rendered invaluable help to the children of the land, and made plain the necessity for reform in the Poor-law infirmaries of the United Kingdom. He threw all his energy into his editorial labors, and speedily raised the *British Medical Journal* into the commanding position it now occupies. His name and work will forever be intimately associated with the history and growth of our great and world-wide organization.

PATHOLOGY.

The early part of the century will ever be recognized as the birthtime of modern pathology—the period when the huge chasm between dead morbid anatomy and living pathology began to be bridged over. The teachings of John Hunter had long exploded the old humoral theories of disease. The leading minds in those days no longer considered that disease depended on an excess of bile, or blood, or phlegm, and the other fluids of the body, and that it could be cured by getting rid of these faulty elements. The principles formulated by Hunter were maintained by succeeding writers in the same field for many years. His pathology was a long way in advance of his predecessors, and he was the first to recognize that all the processes of the organism belonged to biologic science. He saw that disease was only a deviation from health, and that both conditions were regulated by the same vital laws. He regarded the blood as possessed of life, like the solid parts of the body, and its plastic materials as the elements of all growth and structural repair, and taught that exudations composed of homogeneous and transparent fluids containing within them no visible form sweated through the walls of the blood-vessels, and then became changed into living tissue by a process of vital crystallization.

About the year 1830 great improvement took place in the manufacture of the achromatic compound microscope, and this gave a great impetus both to physiology and pathology, and the value of microscopic examination began to be generally appreciated. Moreover, the Council of the Royal College of Surgeons of that day was so impressed with the utility and importance of the facts revealed by the minute dissection and examination of elementary structures that in 1841 they determined to establish a professorship of histology, and to form a collection of preparations both of the healthy and morbid tissues of plants and animals which should elucidate the value of microscopic investigation.

We can now look back on the time when the progress of physiology was everywhere recognized as the true basis of all pathologic science. In 1838 Schleiden made his brilliant discoveries in vegetable tissues, and soon after Schwann investigated the cellular structure of animal bodies. He followed Hunter in believing that vital centers of new growth were spontaneously developed in semi-solid exudations, and that constructive elements could actually be formed within amorphous substances. But, although the progress of the century has been the outcome of the labors of many able workers, still I venture to think we can justly give the first place to Rudolph Virchow. We are indebted to him for exhibiting histology as the real instrument for unfolding the deep

mysteries of disease. He practically gave the medical world a new pathology founded on laborious observation and experiment. Every kind of organic structure and every new formation, he announced, could be traced to a vital source. There never has been and there never will be such an erratic phenomenon as spontaneous generation in either physiology or pathology. He recognized that every plastic exudation, which had been called amorphous material, had wrapped up within it living cells, and that these had come from living structures, and thus every new formation must be the offspring of some living tissue in which its living germs arose.

To-day we are able to appreciate the fact that the evolution of our new pathology has progressed side by side with the evolution of biology, and that, in its broadest sense, pathology is an outgrowth of biology. The work of the last fifty years may be rightly defined as the great unraveling of the deep relations between the healthy phenomena of life and the variations which are outside the normal cycle of these vital phenomena. Through many years biology and pathology have been mutual helps in their onward and remarkable evolution, and we may rest assured that in the coming century their healthy reaction on each other will still go on. Pathology will still advance, and the new discoveries of biology will serve as starting points of new pathologic truths; at the same time, the ordeal of biologic criticism will be accepted as the test of every new pathologic development.

BACTERIOLOGY.

Recent investigations in bacteriology have proved a great stimulus to the study of the relations between the diseases of mankind and those of the lower animals, and this relationship will form an important part of future researches. It is only a few years ago that the real nature of that dreadful scourge of the human race, tuberculosis, was discovered, and its intimate association with the same disorder in domestic animals clearly brought to light. Laennec was the first observer who described tuberculous nodules, and traced their development from milky tubercles. In 1865 the inoculation of animals with caseous material was found to produce tiny masses in their bodies which were in all respects similar to the disease in man. Some physicians were bold enough to assert that the phenomena suggested the probability of contagion, but the notion only excited the ridicule of the profession at that period. Tuberculous disease was generally regarded as a hereditary disorder transmissible in various degrees of intensity. At the same time external influences were looked on as powerful factors which could kindle the smoldering flame into activity. From the very dawn of modern pathology tuberculous disease received profound investigation, and the researches only corroborated the time-honored theory. The microscope failed to detect in the diseased parts any specific elements, and in vain cells and granules, and cells of giant form were searched for some characteristic quality. Tubercle was examined by the best observers in the civilized world; thousands of clever eyes had gazed at it with intense devotion, and with a remarkable unanimity they pronounced the opinion that it was so indefinite in structure it could be recognized as much by negative as positive qualities.

In 1882 the whole pathology underwent a great revolution by the demonstration of the life history of the tubercle bacillus. The disease, occurring in any tissue or organ, is now universally regarded as a specific disorder, the bacillus the absolute proof of its invasion, and the cause of the morbid changes. The long-accepted causes are now dislodged from their position, and are now rightly grouped as morbid tendencies. The inheritance of constitutional peculiarities, the liability to chronic inflammations, and the susceptibility to external influences, are now regarded as conditions which help the microbe to establish itself within the body. Still, these factors are not less potent because the specific characters of tuberculosis have been revealed.

* Abstract of President's address at the Sixty-seventh Annual Meeting of the British Medical Association, from advance sheets of the *British Medical Journal*.

This pathologic transformation still has around it many unsettled problems. It is, however, a fact of history that Koch, by his own researches, brought to light from the microscopic elements of tubercle a living atom which no human eye had before seen. I believe that one may anticipate that this great discovery will be of priceless benefit to mankind.

Bacteriology investigation has already unfolded many of the problems connected with diphtheria. The researches began in Germany in 1882, the chief experiments were by Drs. Behring and Kitasato, and they were soon followed by Dr. Roux, of the Pasteur Institute in Paris. We now know that many animals are liable to its attacks. It is communicable to the horse, rabbit, guinea-pig, and fowl, and some species seem to suffer from a chronic form of the disease. Horses when attacked develop similar symptoms to those which follow inoculation of diphtherial toxin.

The deadly bubonic plague which was epidemic throughout Europe during the Middle Ages, has unfortunately proved a dreadful scourge in India and the East during the last three years. Many earnest workers have made the disease the subject of an elaborate inquiry. In 1894 a specific bacillus was discovered in the blood of a patient suffering from epidemic plague. There is much reason to believe that domestic animals and rats are responsible for spreading the infection, and squirrels and cats have been known to die of the disease. It has recently been stated by a French observer that fleas are dangerous disseminators of the disease. As the result of a series of experiments, he affirms that fleas taken from rats suffering from plague can communicate the disease to healthy rats, which in their turn become centers of infection.

Professor Ogsten in 1881 detected micro-organisms in acute abscesses, and this important discovery has been followed by many elaborate inquiries which have proved the direct connection between suppuration and pathogenic organisms. It is certain that the staphylococcus, the streptococcus, and the bacillus coli communis, and other species also, may be the exciting cause of septic conditions in man and the lower animals. Around septicæmia to-day there are many unsolved problems. Are the micro-organisms the direct cause of the disease, or is it produced by the chemical substances which they elaborate? All animals appear to be liable to blood poisoning. Dr. Hewlett says that poultry, pigeons, pheasants, and sparrows are susceptible to a disease, which Pasteur proved to be excited by a bacillus identical with the bacillus of rabbit septicæmia. Even the mouse has its specific septic disturbance, and the organisms which are present in its blood appear to be identical with those discovered in the septic disorders of swine.

MALARIA.

Investigators have recently been endeavoring to unravel the secrets of malaria poisoning. The disease has been traced by Surgeon-Major Ross and Dr. Manson to a parasite which has the power of assuming a latent condition within the human body. It actually lives in the interior of the red corpuscles of the blood. Dr. Manson thinks that it is removed from the blood by some suctorial insect, and that this insect is a species of mosquito. The parasite is propagated outside the human body. The insects are capable of infecting their larvae, and man is in turn infected by drinking the water contaminated by the mosquito, or by inhaling the dust of the dry mud of the pools in which mosquitoes have perished.

I refer to these facts only to show the great impulse bacteriology has given to the study of the intimate connection between the diseases of mankind and the diseases of animals. It is certain that the latter are far more often the agents by which diseases are distributed than we are at present able to detect. The same disorder in different animals produces very different manifestations, and the symptoms may be so variable that the recognition of a common specific cause is almost impossible.

What may we expect from this young science in the future? We are only touching the fringe of its possible revelations. Much that has been done will have to be done over again, and much that has been written will have to be rewritten. How many questions have yet to be solved? Will the further evolution of bacteriology solve the great problem concerning immunity? The striking differences in the susceptibility to disease in individuals are still unfathomed. Some seem to possess a natural insusceptibility to infectious disorders while others are susceptible on the smallest exposure. I do not believe that any individual can inherit or acquire a resisting power for all forms of disease: some races appear to acquire immunity, and native populations in some parts of the world exhibit very little susceptibility to yellow fever and malaria. Race immunity is generally explained by natural selection and protection by inheritance. During the long periods susceptible persons were weeded out, and those that remain are capable of transmitting their insusceptibility. But we learn from experience the resisting power to infectious diseases is very variable, and that there is no such thing in the world as absolute immunity. On the other hand, bacteriology offers us the comforting doctrine of phagocytosis. The cells of the blood are ever ready to engulf and destroy living bacteria, and to cast them out as unwelcome guests. The leucocytes may be compared to a great army of invisible warriors. They send out their scouts, and as soon as an enemy is in sight myriads appear at the very seat of infection and are drawn up to open the attack on the intruding bacterial forces; all ends well when the battle of the cells terminates in the destruction of the enemy, but unfortunately sometimes the leucocytes are beaten back and the bacteria are victorious; then they can multiply without hindrance, and general infection is the result of the defeat.

SURGICAL ANESTHESIA.

Of the history of the discovery of surgical anesthesia he spoke at length:

In the noontime of this Victorian era surgical anesthesia was the brilliant gift to the civilized world by our brethren and kinsmen across the great Atlantic, and at the last annual meeting but one of this, the greatest of the centuries, we desire to record our admiration of the courage and genius of William Morton and the wisdom and surgical skill of Charles Collins Warren, and again to crown their memories with enduring fame as great benefactors of the human race.

It is an interesting fact that the original anesthetic agents still hold the confidence of the medical world. There are many differences of opinion on their essential virtues and a wide spread hope that soon safer remedies may be discovered. Sir James Simpson entertained this hope until the end of his career, and Dr. Snow, who did so much during his life to perfect anesthesia administration, believed that better agents would be found. It is my opinion that surgical anesthesia can never be wholly stripped of risk, and that to-day the risk is greatly reduced by our modern safeguards and improved methods of administration. It is certain that we have not reached finality in the matter of surgical anesthesia, but that by experience and the skillful adjustment of the dose we are entitled to regard the inhalation of our present agents as practically safe.

During the preanesthetic age, operations were confined to cases in which surgical interference was absolutely necessary, and both patient and surgeon had to be brave and determined—one to suffer pain, and the other to perform delicate manipulations with rapidity and dexterity. The introduction of surgical anesthesia exercised at once a great influence on the practice of surgery, and the number of operations increased in all directions. Within six months the surgical work of the London hospitals was actually doubled, and in every department the domain of surgery rapidly extended.

Unfortunately, the surgical world was quite unprepared for

the sudden outburst of enthusiasm which followed the great discovery. At this period surgical instruments were few in number, and very different from what they are to-day. The microscope was only just adopted as an instrument of pathologic research, and many ingenious aids to diagnosis now universal were not then in existence. The hospitals were for the most part wretched receptacles for the sick. They were constructed regardless of all sanitary precautions, and without any means for securing adequate light and fresh air for the safe treatment of urgent surgical cases and acute diseases. The nursing system, too, was rotten to the core. Nursing then meant nothing more than the attendance of a parcel of ignorant women who possessed no qualification for their high and self-sacrificing duties, and who had never received a moment's training. It is a fact that in those days thousands of lives were extinguished at the shrine of ignorance and superstition, and thousands more for the want of sobriety and cleanliness. Under such conditions it is not surprising that suppuration followed almost every wound, and that septic processes were started by every operation.

The high mortality which occurred both in the institutions of this country and the Continent excited great anxiety, and roused the profession to earnest investigation. The great increase in the work of the hospitals soon revealed their insanitary condition, and many structural defects. Again and again gangrene, pyemia, and erysipelas ran through the wards of these old buildings, and the medical officers saw clearly that these outbreaks were infective disorders, and were carried from one patient to another.

We have now reached the dawn of another important epoch in the medical history of the century. The terrible ravages of sepsis, which appeared to have gone almost beyond control, helped to bring about better ward ventilation, and improved sanitary arrangements in many of the old buildings. The evil of overcrowding was checked, and increased cubic space provided for patients. Many reforms soon followed in the administrative and nursing departments, as well as an improved technic in operative surgery. Some treated their cases with water dressing or irrigation; some, having discarded greasy compounds, closed all their wounds with friar's balsam; and others, after bringing together the cut integuments with strapping, used dry wool and pressure. There can be no doubt that greater cleanliness and new methods of treatment were introduced at this period with success, and these advances helped to prepare the surgical world for the coming of the great crisis when the doctrines of Lister shook the foundation and revolutionized the practice of surgery. Lord Lister demonstrated to the world the part that living organisms play in the production of septic diseases, and then exhibited the simple means by which their growth and development could be prevented. He proved that wounds could be made to heal by first intention, that the process of suppuration could be controlled, and that precautions easy of application would stop the development of septic disorders.

RECENT ADVANCES IN SURGERY.

Notwithstanding the great progress of medicine during recent years, the results have been less manifest than the brilliant advances of modern surgery. There is no organ nor region of the body which has not been investigated by the surgeon; year by year the science has gained wider application, and reached a higher state of perfection by new methods of diagnosis and improvements in surgical technic. Only three and a half years ago the remarkable discovery of Professor Roentgen was communicated to the scientific world, and it has already proved of great value in surgical practice. It has revolutionized the old methods of military surgery, and rendered easy the location of metallic substances impacted in the body. It has given a fresh impulse to the study of diseases and deformities of the skeleton, and is an invaluable guide to the treatment of injuries and diseases of the epiphyses and joints. We can anticipate with confidence that the treatment of this large group of disorders will steadily improve.

The time is coming when there will be a considerable reduction in the number of adults suffering from hernial troubles,

and this important result will be due to the latest improvements in radical operations. There will be a great reduction in the number of persons afflicted with loss of sight, the issue of the modern treatment of infantile ophthalmia and the corneal diseases of children, and also the early correction of errors of refraction.

HANS WILHELM MEYER.

During the last twenty-five years great advances have been made in aural surgery, and the number of deaf persons in this and other countries has been greatly lowered. The celebrated Danish physician, Dr. Hans Wilhelm Meyer, was the first to put his finger into the little space between the nose and the throat for the purpose of removing "pharyngeal vegetations." It took him some years to convince the profession that these outgrowths were a common cause not only of loss of hearing and obstructed nasal respiration, but also of defective articulation and impaired mental and bodily development. It is no exaggeration to assert that the number of young persons who have been saved from life-long deafness by the removal of these obstructing glands amounts already to hundreds of thousands, and that hundreds of thousands more will be delivered from this terrible affliction in future times. Dr. Meyer lived just long enough to know that the medical world recognize the great value of his discovery, and to-night we desire to honor his memory and to record our admiration of his splendid labors.

SEPTICEMIA.

The experimental investigation of the causation of human septic disease is still far from complete. Up to the present time the virus of septicemia has not been isolated, although the bodies of infected animals must contain a very powerful poison. The filtrates of streptococcus cultures have exhibited very little toxic action, and there is no very satisfactory evidence of their value in the complex disorders included in the term "blood poisoning." The prevention of inoculation through a wounded surface is now possible, but when the disorder is once fully established we are practically powerless to overcome the wide-spread disturbance. I have no doubt that some of the surgical victories of the future will be won by bacteriologic science. At the present time we have no cure for sepsis when it has entered the body; still we have much reason to hope that a remedy will be found, and that the destruction of sepsis-producing organisms within the blood and tissues may be at length accomplished.

CANCER.

The treatment of cancer and its manifold complications is another great field for inquiry in coming years. For some time a growing impression has prevailed that the disease has been steadily on the increase. Cancer causes about 6 or 7 per cent. of the total deaths of both sexes over 45 years, but these figures are probably rather under than over the real number. No doubt during the next few years the question of increase will be settled. Recently some investigations have been published suggesting that the disease is due to a parasite, and Mr. Plummer states that he has discovered parasitic bodies in 1130 cases out of 1278. Local irritation is certainly a great factor in the development of cancer, and this may possibly be the channel for the entrance of the parasite. Other observers have suggested that the disorder is liable to recur in particular places, and if this statement is corroborated by further investigation, it will certainly form a presumption in favor of cancer being an infective disease. A curative serum for carcinoma has not yet been discovered. Up to the present time surgical treatment yields the best results, and the earlier it is adopted the better. We look forward to the development of new methods of diagnosis, so that the surgeon may be able to recognize the seat and character of the disease in the incipient stage. The pathology and treatment of cancer still bristle with difficulties. We are anxiously waiting for more light and we are ready to receive it from whatever quarter it may fall upon us. It is at least some satisfaction to know that many of the best pathologists and surgeons are diligently laboring in all parts of the world to unfold the mysteries which still surround this terrible disease.

The address concludes with remarks on the future needs and progress of preventive medicine, the latter of which is to be fought in the dwellings of the working classes and the education of the public in needs of sanitary cleanliness.

THE

Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance	\$5 00
Foreign Postage	2 00
Single Copies	10 Cents

In requesting change of address, give old as well as new location.

Subscriptions may begin at any time and be sent to

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

No. 61 Market Street, Chicago, Illinois.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, 100 Washington St., Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

Those now members of the Association should send their annual subscription direct to the Treasurer, Dr. Henry P. Newman.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the Editor, and all communications relative to the business of the JOURNAL, proof-sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 61 Market Street, Chicago.

Original communications are accepted with the understanding that they are exclusively contributed to this JOURNAL.

SATURDAY, AUGUST 5, 1899.

PRESENCE OF TYPHOID BACILLI IN URINE OF
TYPHOID FEVER PATIENTS.

Attention has already been directed in this journal¹ to current studies on the presence of typhoid bacilli in the urine in typhoid fever. It has been shown that the bacilli may persist in the urine during and long after convalescence, and that the danger of infection from this source demands serious consideration. It is probably true that up to the present time this source of infection has been completely overlooked, and that the systematic disinfection of the urine in typhoid fever has never been carried out. The observations bearing on this phase of typhoid fever appear to be rapidly multiplying.

In the *Johns Hopkins Hospital Bulletin* for June, Gwyn summarizes the results obtained by the previous observers, as follows: In perhaps from 20 to 30 per cent. of all cases of typhoid fever, typhoid bacilli may be present in the urine at some time or other. When present, they are usually in pure culture, often numerous enough to render the urine turbid and to be recognizable on cover-slip examination. They generally make their appearance in the second and third week of the illness, and may persist for months and even years, in all probability multiplying in the bladder, the urine being apparently a suitable medium for their growth.

Often there may be symptoms of cystitis and also of renal changes, but the urine containing bacilli generally presents only the characteristics of febrile urine, and the presence of bacilli is of no prognostic significance, their disappearance or persistence without inducing local changes being the rule.

These conclusions differ somewhat from the opinion of Schichhold², who examined the urine in seventeen cases of severe typhoid with reference to the presence of typhoid bacilli. His conclusions are that the typhoid bacilli may be eliminated in the urine, but only when there are well-established lesions in the kidney substance, either due to typhoid bacilli or to complicating conditions. Typhoid bacilli appear in the urine shortly after the development of the renal lesions and without any reference to the appearance of rose spots, hence earlier when the renal changes develop abnormally early. Typhoid bacilli may be demonstrable in the urine during convalescence. The bacilli eliminated during the active disease appear to be strongly virulent, as shown especially by their behavior in the agglutination test.

Konjajeff also held that the typhoid bacteria indicated the presence of lymphoid nodules in the kidney, and Borges regards the renal changes as necessary to allow bacteria to pass through.

The work of Fütterer, showing the almost immediate appearance in the gall-bladder and the urine of organisms injected into the portal and jugular veins, taken in conjunction with the observation that many urines containing bacilli show no evidences of renal changes, may be regarded as indicating that typhoid bacilli in the urine owe their presence therein to a process of simple secretion from the blood. (Gwyn.)

The occurrence of several cases of cystitis in typhoid fever patients in the Johns Hopkins Hospital led to renewed attention to the urine. A number of cases were selected for examination for the presence of typhoid bacilli in the urine, hence these cases can not be used as data from which to figure percentages. In a series of seven unselected cases, positive results were obtained in three, i. e., in 42 per cent. In one case cystitis developed three months after an attack of typhoid fever, and typhoid bacilli were found present in abundance in the fresh urine. In one of the cases the number of bacilli present was estimated at five hundred million per cubic centimeter, so that a daily amount of 1000 c.c. of urine would contain five hundred thousand million organisms. In one of the cases studied and described by Petruschky, he estimated that 170,000,000 bacilli were present in 1 c.c. of the urine. These numbers indicate sufficiently well the grave danger of infection of water by such urines.

In most of the cases studied by Gwyn there was pyuria; albumin was twice present in large amount, usually only in traces. In the albuminous urines there were usually also found a few hyaline and granular casts; in one case the urine was otherwise perfectly normal. One case is remarkable because it presented a chronic cystitis of four years' duration, developing shortly after an attack of typhoid fever; pure cultures of typhoid bacilli were obtained from the urine in this case.

Newmann's observation that cloudy, freshly-drawn, acid urine in typhoid fever should be regarded as sus-

¹ See Journal, March 18 and June 17, 1899.

² Deutsche Arch. f. Klin. Med., 1899, Bd. Lxiv, p. 505.

precious is confirmed by Gwyn's observations. In such cases the bacilli were detected in fresh specimens in all but one case. Since typhoid bacilli are present so frequently, and in such abundance in the urine, Gwyn very correctly emphasizes that all typhoid urine should be disinfected before being thrown out. Great care should also be exercised in handling and in the routine examination of urine in typhoid fever. Centrifugation of urine is usually possible, and in the absence of cultures, this should be carried out, and the detection by this means of bacilli in fresh urines in typhoid fever should suggest the proper antibacteriuric treatment and proper disinfection of the urine.

It will be recalled, as pointed out in the *JOURNAL*,³ that Richardson has shown that irrigation of the bladder with bichlorid of mercury solution and the internal administration of urotropin, a compound of ammonia and formaldehyde, appear to be safe methods of removing the bacilli. In his series of cases 30 to 60 grains of urotropin quickly removed all the bacilli.

OPEN-AIR TREATMENT OF PHTHISIS.

The sanitarium treatment for tuberculosis is becoming familiar to the profession, but is usually associated in one's mind with specially favoring conditions of climate, altitude, etc. The experience of one or two establishments in this country, that near Boston, for example, has to some extent corrected these impressions, but they still exist and further evidence that with ordinary climatic surroundings the open-air treatment can still be carried on, is of interest. The July number of the *London (Eng.) Practitioner* is chiefly devoted to this subject, the five original papers it contains being reports of the success of this method under what we would not call specially favoring natural conditions. Dr. R. W. Philip, who works in what the editor of the *Practitioner* calls "the most villainous climate in the kingdom," that of Edinburgh, gives a tabulated statement of the number of hours each of his patients spent in the open air during a particularly inclement period of the year, February, March and April. During the first two months there were only six days when there were over seven hours of sunshine, and less than a quarter of the time when there were only five, yet the patients were able to spend an average of at least five or six hours daily in the open air, or lie in bed at a wide open window, as was done in one or two instances. The results are certainly remarkable: improvement apparent within a week, increased appetite and better digestion, phenomenal gain in weight, disappearance of cough, lessened expectoration, cessation of night sweats, improved circulation, reduction of body temperature, are all reported. The testimony of Drs. Calwell (Belfast), Burton Fanning and Jane Walker (Norfolk), and Rowland Thurnam, all bear witness to the same facts of improvement, the latter giving a tabulated statement that makes consumption appear almost as a universally curable disorder, in every

case of which a hopeful prognosis may be given. In only one of his twenty-four cases is there no improvement, in one the gain was in weight only, all the rest were actually or relatively cured or improved greatly.

We are not accustomed to think of the climate of the British Islands as a specially bracing one, or as particularly adapted to the treatment of tuberculosis, though its comparative mildness is an advantage. As regards dryness and sunshine, it is certainly far below this country in the scale. Our rather inclement winters in the northern states might seem unfavorable to outdoor treatment at that season of the year, but the experience of the Adirondack and Catskill sanatoria shows that they are not an insuperable objection even where the winters as a rule are unusually severe. In any case we have within our borders almost every possible climate, but these British experiences are encouraging as showing that even comparatively unfavorable surroundings are no sufficient bar to the care and cure of consumptives. In no part of our country can it be said that open-air treatment is climatically beyond the reach of the poor, provided the proper and perfectly practicable local sanatoria are established. While Colorado, California and other mountain and seaside resorts have their special advantages, they are by no means a *sine qua non* if cures can be brought about as in Thurnam's cases, by three or four months' open-air treatment in a reasonably healthy country district conveniently near the great centers of population, which are the breeding-grounds of phthisis. It is one of the most hopeful signs of the present interest in the subject that it is bringing out facts like these.

PSEUDORELIGION AND QUACKERY.

As we near the end of the nineteenth century, we congratulate ourselves on the remarkable advances that have been made in the various branches of the medical sciences and arts. We read of these advances in medical journals, in the metropolitan newspapers and in the magazines. Diseases and various afflictions which a quarter of a century ago were called incurable are now amenable to treatment. Not only this, but what is still more desirable and satisfactory is that the better understanding of the cause—the etiology—of many diseases has made these absolutely preventable. In one particular branch of medicine is the duplex advantage of today over the past specially noticeable. The pangs of childbirth have been removed or lessened by the discovery of anesthetics, but what is of still more importance, the terrible death-rate has been eliminated. The complications and diseases heretofore incident to maternity have been brought within the category of not only the easily curable, but what is still better, the easily preventable diseases. "Childbed fever," the dread of the physician and the nightmare of terrors to the expectant mother, is now recognized as a "blood-poisoning," a preventable disease, and curable if taken before the system is saturated. These remarks are made to show one side of a picture; let us see the other.

Here in Chicago, a city which has excellent medical colleges with well-qualified teachers, a city which contains as scientific, as well educated, as conscientious, and as noble a body of medical men as any city on earth; a city which proudly refers to its schools, colleges, and universities; a city of free libraries in which are contained the best of the literature of the world; a city of art and culture—here in the great and enlightened metropolis of the central states of the “most enlightened nation on earth,” was enacted during the past week, what would have been a disgrace to the most barbarous times. For three days a poor woman, deluded into beliefs that one would suppose to be excusable only in the superstitious natives of central Africa, suffered the pangs of childbirth, and at the end, torn and exhausted, was allowed to lie with wounds unrepaired, and slowly absorb the poison, to which she finally succumbed. She was treated by a woman, a follower of Dowie, a member of his “Zion.” No physician was called in to help the poor woman, none of the aids which medical science has always ready were allowed to be used. Insetad, this “healer” prayed and prayed, and, after the agony of childbirth was over, the mother lacerated through neglect, was allowed to lie with her bodily needs uncared for, while, we presume, the “healer” prayed, prayed and prayed—for money.

It is not pleasant to think that we are living among those who can calmly allow people to die in this way. We dislike also to remember that the intelligent legislature of the great State of Illinois legalized such crimes during its session last winter. And we wish we did not know that such murders are being permitted in practically every state in this enlightened country of ours. For while this particular class of cases appeals to the sentiments of the populace more than others, and as it is known to be preventable, still this murder by neglect is going on all the time. Whether it be “Christian Science” or Dowieism, or any other form of pseudoreligious quackery, it is a disgrace to the community that permits it under the plea of religious liberty to trifle with human life or human suffering. Religion, however misguided, if sincere and honest is respectable, and tolerable while it keeps in its own proper sphere, but these mercenary and homicidal deluders are criminal and should be dealt with as such. Pure religion and undefiled is worthy of all respect.

DIAGNOSIS OF SMALLPOX.

The timeliness of this seemingly trite topic is suggested by the recent prevalence of the disease, with frequent mistakes in diagnosis, and also by the collection of the observations of physicians on the present epidemic. Only a few meager reports have appeared, but they contain much that is of very great general importance. Conlett has given us the best summary that has yet appeared. The mistakes that have occurred in the diagnosis of smallpox during the last two years have been due in part to the unfamiliarity of a large part of the profes-

sion with the lesions of the disease, but in greater part to a change in the type of the disease itself, consequent on the wide practice of vaccination. Most recent cases indeed are varioloid, and very few are typical smallpox as described in the books. Despite this, the modified form is every whit as dangerous to the public health, for at any time confluent and hemorrhagic cases may obtain their contagion from a very mild case. Mistakes have been made easy by the fact that so many cases have been sporadic and the physician had not the help of the known presence of infection to aid in the diagnosis. Vast numbers of cases have been called chickenpox, and from them, lacking isolation, extensive epidemics have arisen. In cases as now seen there may be but few of the characteristic lesions, and they may mature early, frequently in ten to fourteen days. Also there may be no destruction of the true skin as in the well-developed pox. But it will always be possible with thorough search to find a few of the typical indurated pustules that are simulated by practically no other condition. So in a suspected case, careful scrutiny of the whole body-surface is demanded. It is characteristic that these indurated bodies will not on pricking completely discharge their contents, and that, when by repeated pricks they are nearly discharged, they will be found to retain a firm base, raised somewhat above the level of the surrounding skin. Along with an eruption some of whose components will exhibit these characters, there will be the abdominal pain and vomiting, the sudden onset, the chills, the headache and backache, the fever and delirium, the sweating and subsidence of fever on the appearance of the eruption, the furred tongue and fetid breath, and the early erythema or petechial eruption about the abdomen, buttocks and thighs. At times the history and a possible source of contagion will lend assistance. As the chief confusion has been in mistaking smallpox for varicella, the physician should remember that many keen observers of long and wide experience have never seen a case of chickenpox in the adult. It might be a safe rule in some respects, to call every case in an adult smallpox that one feels tempted to diagnose as varicella. Then in varicella the lesions are superficial and never indurated. They can readily be emptied by a single prick, each one lasts but a day or two, and they leave an excoriated skin-surface beneath, instead of a deeply attached crust. When there arises a question as between smallpox and scarlet fever, it is easy to remember that in the former the premonitory signs are more severe, that in the latter the erythema appears first on the chest and neck, and not on the abdomen and thighs as in smallpox. Measles has the early nasal and bronchial catarrh, with profuse lachrymation and injection of the conjunctivæ, and not the lumbar pain and other characters of smallpox. The eruption of measles is not raised or hard, and the temperature does not fall at the appearance of the eruption as in smallpox. Those who will bear these few points in mind will find their course, always beset with difficulty, not quite so doubtful. Be-

cause it is a dangerous disease, and because of late years there have appeared among us, both by lack of vaccination and by lapse of time since vaccination, many susceptible persons, it is highly important to recognize the disease at the earliest possible moment.

VENTRICULAR BAND SPEECH IN HYSTERIC APHONIA.

In this issue (p. 345) we publish an abstract of the article by Dr. Middlemass Hunt, in the English *Jour. of Laryng. Rhin. and Otol.*, where he describes a case in which speech was made possible by hypertrophy of the ventricular bands in a case of hysteric paralysis of the vocal cords. The case is of interest, as he says, in the development of the temporary ventricular band speech which seemed to be Nature's effort to meet even hysteric paralysis. The text-books appear to have pretty generally overlooked the subject from this point of view.

INTERNATIONAL CONFERENCE ON SYPHILIS AND VENEREAL DISEASES.

This conference, which, as previously noted in the *JOURNAL*, is to be held in Brussels, September 4 to 8, will discuss the possibility of ridding society of syphilis and venereal disease. Next to consumption come these diseases in their direful effects on humanity, and as they are certainly preventable, it would seem about time that international action be taken in the premises. While radical and harsh measures may be necessary for a generation or two, there are certainly no insurmountable obstacles to prevent their total elimination. Invited to the Conference are not only physicians, but lawyers and all public functionaries who are interested in the question. We hope and expect to see good results from the Conference.

QUACKERY WINS A POINT IN IOWA.

A local judge in Knoxville, Iowa, has declared the provisions of the state code in reference to the licensing of physicians to be unconstitutional, thus throwing over the state to the irregulars and quacks. The decision was given in granting a writ of habeas corpus to a notorious "Indian" doctor who had been arrested for the illegal practice of medicine. The grounds of his decision are not stated in the newspaper dispatch, and one cannot therefore form any judgment as to their validity, but the judge apparently made up his mind without taking any undue length of time, as the argument was made on Wednesday and the case decided Friday. One is naturally inclined to suspect a sympathy with quacks in some judicial and executive decisions, and we shall watch for further details of the case. It is understood that appeal to the supreme court will be taken promptly, and it is to be hoped that that body will see things differently than does this local judge. In the meantime it will probably be claimed that the state is "wide open" for all sorts of unlicensed practitioners and the beauties of judge-made law be admired *ad lib.*; but it is not, for happily, one county judge does not make decisions for the whole state.

YELLOW FEVER.

The country was startled at the beginning of the week by the announcement that many cases of yellow fever

existed at the National Soldiers' Home, near Hampton, Va., midway between Newport News and Old Point Comfort. Just how the disease got there is hard to understand. One report traces the cause to an old soldier recently from Santiago, who entered the home in the early part of July; several patients were ill and one died before the disease was recognized. As we write, the cases are all confined to that locality, and as rigorous precautions are being taken no spread of the disease is liable to occur. While it is not an agreeable contemplation, still the fact remains that with all the precautions taken, the dread disease has found a foothold in our country; and that too at a place where it was least to be expected; also, we might add, where it can do but little harm, for while the virulence of the disease seems to be severe, it is so far north that no serious spread, in the ordinary course of events, is likely to take place. At least it is much better that it should be as far north as it is, and especially at a place away from the highways of commerce, than at New Orleans, Charleston or other southern seaport towns.

MEDICAL LEGISLATION.

No less than 241 bills relating directly or indirectly to the medical profession and to questions of public health are enumerated in full as to their titles, in the *Post-Graduate*, as having been presented to the New York Legislature during its last session. Of these, forty-one became laws. Probably a proportional number were introduced in the other state legislatures and many—some good, others bad—have passed. In some cases executive vetoes have saved the people from bad laws, and we regret to have to believe that in a few others they have not been interposed in behalf of the public welfare, or have been exercised to its detriment. In these days of general public interest in medical and sanitary matters, and of dissemination of the little knowledge that is a dangerous thing, it is of the highest importance that the medical profession should keep watch on the measures thus introduced. The session of a legislature is considered by many business men as a time of special peril; it should be a matter of concern to us also as guardians of the public health. If every legislature could have among its committees one on state medicine, largely made up of physicians, to which all bills directly or indirectly involving medical questions could be committed, it would be a rational step in advance and save us from a vast amount of useless and harmful legislation. If as a profession we could combine and insure, as is certainly possible with our united influence, the election of a few intelligent and upright physicians—not mere seekers after public places—to each legislature it would be a boon to our country and to ourselves.

THE BRITISH MEDICAL ASSOCIATION.

The report of the Council to the British Medical Association shows that the number of members of the Association last year was 17,746; during the year 1128 new members were elected, 183 died, and 506 resigned, leaving a net gain of 439, or a total of 18,185. This membership covers the Colonial branches and is not limited to Great Britain. The revenue for the year ending Dec. 31, 1898, amounted to £42,924; the expendi-

ture including £500 written off for depreciation of plant, £549 for losses on subscription, amounted to a total of £38,188, leaving a surplus of £4736. The accumulated surplus, which is mostly invested in real estate, now amounts to £69,721. Of the *British Medical Journal* the report says:

The high position of the *Journal* among the medical periodicals of the world has been strengthened and extended, while its circulation has shown a satisfactory increase. It is read not only in every part of the United Kingdom, but in every colony and dependency, while it is recognized abroad as a chief exponent of medical opinion in this country.

The prosperity of the medical profession rests primarily on the ability of its members to keep themselves acquainted with the rapid progress of the science and art of medicine, and one of the chief services which the *Journal* renders to members is the publication of original papers, special articles, and an epitome of foreign medical literature, which together reflect the best opinions and the most recent observations in medicine and the ancillary sciences selected with special reference to their bearing on practice. Tropical diseases, which are of interest not only to those members who practice in India and in tropical and subtropical countries, but also, in these days of rapid travel and extending empire, to a large proportion of those who practice in the United Kingdom, which is the center of the world's traffic, have recently demanded increased attention. By the prominence given to these subjects the *Journal* has contributed in no small degree to bring about the establishment of schools of tropical medicine in England, an example which has been followed in Germany and will probably soon be followed in France.

FAMILY FORM OF CYSTINURIA.

The appearance of cystin in the urine has been attributed to disturbances in metabolism comparable with those that give rise to diabetes and gout. In support of this view, the appearance of the conditions in families and its hereditary transmission are cited as evidence. It has, however, been suggested that the condition arises in consequence of the activity of micro-organisms, as in some cases cadaverin and putrescin have been found in the urine in conjunction with cystin. Some recent observations by Cohn¹ rather lend support to the former than the latter view. This observer reports the case of a girl, 7½ years old, who had been operated on several years previous for tuberculosis of the right knee-joint. For a year increased frequency of micturition had been noticed, and pain in the region of the bladder was complained of. These symptoms had increased in severity within three months, and the mother had observed that the urine appeared turbid and emitted a disagreeable odor. Exploration with a sound disclosed the presence of a calculus in the bladder, which rectal examination indicated to be the size of a walnut. Suprapubic cystotomy was performed, and a friable and rough stone found and extracted. On chemical examination the calculus was found to consist of cystin, and subsequent examination of the urine from the patient showed that it also contained cystin. Investigation with regard to the presence of putrescin and cadaverin yielded entirely negative results. Further inquiry elicited the fact that

of eleven other members of the family, of whom nine could be examined, cystinuria was found to exist in six, but in none other than that reported could a calculus be detected.

PATHOGENIC SARCINA.

Loewenberg,¹ in a case of ozena, isolated a pathogenic sarcina. The nasal mucus in this case was composed exclusively of polynuclear leucocytes, and an enormous number of packets of sarcinae. The cultures gave rise to pure growths of sarcinae. The treatment instituted led to complete and definite healing at the same time as the organisms disappeared and the fetor faded away. Of the usual solid media the sarcinae form a shining moist coat, sometimes whitish, at other times slightly yellowish; isolated colonies resemble small drops of rich milk. Gelatin is not liquefied; the older colonies on this medium are rather yellowish. On the ordinary potato media it grows very luxuriously and forms moist white growths. In liquid media it forms an abundant sediment, while the fluid remains clear. In the cover-slip preparations from the nasal mucus of the patient it appeared in the form of characteristic cubical packages, but in the successive generations on artificial media it soon loses this mode of grouping, finally assuming the form of groups and masses and short chains of cocci; as is well known the ordinary yellow and red sarcinae act in the same way. In the liquid media, however, the sarcina in question rearranges itself in the characteristic grouping. Loewenberg finds that this sarcina does not correspond to any of the three principal varieties established by Stubenrath, namely the sarcina alba, variabilis, and canescens. The new sarcina distinguishes itself from the others especially by the fact that it is pathogenic. Stubenrath, in his study of the genus sarcina, concluded that no sarcina had been described as pathogenic to either man or animals. Injected in the dose of 2 c.c. of a suspension in sterilized bouillon, into the peritoneal cavity of rabbits and guinea-pigs, Loewenberg's sarcina produced death in twenty-four hours; there was an intense peritonitis. White rats, injected under the skin, died from septicemia in twenty-four hours, cultures from the blood giving rise to pure growths. Loewenberg is inclined to attribute the ozena to the action of this sarcina. The nasal secretion from the nose from which it was isolated was alkaline instead of neutral, as is the case ordinarily. Not having observed the patient when he was well, it cannot be said whether this alkalinity was the result of the presence of the sarcina or not. The fetor undoubtedly depended on the presence of the sarcina, as shown by the fact that when the sarcina disappeared the fetor subsided. The cultures of the sarcina, however, did not possess any appreciable odor.

MEDICAL BIBLIOGRAPHY.

The discontinuance of the publication of the *Index Medicus* is undoubtedly a medical misfortune. How serious a misfortune it may be time will tell, but we already have our comforters. In the *Semaine Medicale* of June 28, we find a lengthy editorial review of the medical bibliography at the end of the nineteenth century.

¹ Berlin Klin. Woeh., June 5, 1890, p. 503.

¹ Annales de l'Institut Pasteur, 1899.

ry, in which, after noticing the discontinuance of the *Index Medicus* and referring to the *Centralblatts* and year-books that in a way make up for its absence, it goes on to point out its own work in the line of international bibliography. It says, "actually after the disappearance of the *Index Medicus* from the field, the *International Bibliographical Bulletin of the Semaine Medicale* is the only general bibliographic review, all the other lists of new publications embracing only a special branch of medical science in a single country and language, even when qualified by the term international. Recently some periodic international bibliographies have appeared abroad, but these are monthly or quarterly publications, and as they are in their beginnings one cannot say that they will long survive. Considered as a retrospective bibliography with its general index constantly appearing, the bibliographic *Bulletin of the Semaine Medicale* will have a greater practical value than all the other bibliographies of the same period, including the *Index Medicus*, and even the 'Index Catalogue,' in that it gives a complete list of the works of each author under his name, whether published separately as books or monographs or in journals, while the subjects are noted with the greatest precision and detail in their alphabetic order." Each thinks his own the best, and we confess to being unconvinced of the superiority of the *Semaine Medicale's* bibliography. It is true that the "Index Catalogue," which we have still with us, is not absolutely complete, and that it publishes under the authors' names only the separate reprints or works that may be in the surgeon-general's library, but its subject catalogue is by far the fullest of anything that has yet been sent out. This may be readily seen by a comparison with the bibliography of acromegaly, given as a sample of the French journal, and that in the new series of the "Index Catalogue." The bibliography of gastrectomy has not been reached in the new series of the "Index Catalogue," but the incompleteness of that of the *Semaine Medicale* is shown by the lack of mention of a number of important papers and methods such as those of Kader and of Senn. In fact, its bibliography is very incomplete in some directions; in examining, for example, several issues taken at random, we find very little mention of English and American literature, especially the latter, which we cannot honestly admit, altogether aside from national prejudices, is so undeserving of notice, as would thus appear. The *Semaine Medicale* does not appear to be conscious of these omissions and we, therefore, take this opportunity to call its attention to their occurrence. As a bibliography of the more important articles by French authors, the list will probably take first rank. German authorities are also not neglected. For thoroughness and completeness, however, it falls far short of equaling either the *Index Medicus* or the "Index Catalogue." The continuance of the latter still keeps our country well ahead of all others in this matter of medical bibliography.

PROFESSOR BACCELLI is winning almost as much renown as from his scientific achievements, by the excavations in the Roman Forum which are being carried on under his inspiration and direction as Minister of Public Instruction.

Medical News.

PROF. F. MUELLER of Marburg has received a call to Basle, as Immerman's successor.

DEDICATION of the Houston Memorial Hospital, Coatesville, Pa., took place July 13.

DR. F. W. PARHAM, New Orleans, has been elected a member of the American Surgical Society.

DR. NORVAL H. PIERCE, Chicago, sailed from New York, July 26, to attend the International Congress of Otologists, in London.

MICHAEL FOSTER of London will deliver the next course of Lane Medical Lectures at Cooper Medical College, San Francisco, in 1900.

ERNEST LAPLACE, Philadelphia, has gone to England, to demonstrate by invitation a new instrument before the British Medical Association.

JULY 25 the attention of the medical authorities was called to the occurrence of eight cases of typhoid fever among the new recruits for the army at Camp Meade, Pa.

THE NEW buildings of the College of Physicians and Surgeons, Baltimore, are rapidly nearing completion and will be ready for occupation by the beginning of the session.

PROF. KARL EWALD, editor of the *Berliner Klinische Wochenschrift*, recently celebrated the twenty-fifth anniversary of his connection with the university as privat docent.

THE CENTENNIAL of the birth of Vincenz Priesnitz is to be celebrated at Dresden in August by an international exposition of appliances for hygiene and the care of the sick.

SINCE THE treatment of tetanus by injection of carbolic acid has been mentioned by the press, it has been learned that in Philadelphia at least two cases have been so treated, but as yet definite results can not be reported.

THE FIRST examinations under the new practice act of Illinois were held in Chicago Aug. 1 to 4. Thirty-four appeared for examination; five physicians, fifteen midwives and fourteen osteopaths.

PROFESSOR CERVELLO of Palermo now has a model sanatorium, constructed for him by a wealthy Italian, with accommodations for 150 patients, to test on a large scale his "igazolo" formic aldehyd treatment, described in the *JOURNAL*, June 24, p. 1438.

HENRY T. LEA of Philadelphia has given an additional donation of \$8000 to the Pennsylvania Hospital for Epileptics, at Oakburne, for the erection of an industrial building. A previous donation of \$50,000 had been given this institution by Mr. Lea.

ONE of the unpleasant incidents of the recent strike of the employes of the Metropolitan Street Railway Company, New York, was an assault on a reputable physician who was performing his professional duty in dressing the wounds of an injured non-union conductor, on the street.

IT HAS always been claimed that leprosy did not exist in eastern Siberia, except among the natives, but recent advices to the *Semaine Medicale* announce that the wife of an official, a private soldier and six other persons have become affected with the disease since their arrival in the country.

AS A RESULT of the recent examination of candidates

for license to practice medicine in Pennsylvania, the State Board of Examiners has granted certificates to 375 out of a total of 435 who presented themselves. This was the largest number ever before the Board at one meeting.

REPORTS of deaths from tetanus are still coming in. While nearly all cases thus far reported are the result of injury received on or about the Fourth of July, there are a number the cause of which are aside from the annual fireworks. One such is recorded this week in Chicago, the original cause being a simple flesh wound.

DRS. S. R. OLLIPHANT, J. J. Archinard and Hermann B. Gessner are members of the faculty of the recently organized New Orleans College of Dentistry, filling respectively the chairs of chemistry, materia medica and hygiene, physiology, pathology, microscopic anatomy and bacteriology, anatomy and surgery.

DR. ALONZO GARCELON, President of the Board of Trustees of the AMERICAN MEDICAL ASSOCIATION, has been ill, and confined to his bed for the past three weeks. Dr. Garcelon is one of the oldest, and, at the same time, one of the most enthusiastic members of the ASSOCIATION, and his many friends we are sure are hoping for his early recovery.

THE QUESTION of removal of the Municipal Hospital of Philadelphia to new quarters still remains quite unsettled. Considerable inconvenience is caused by lack of room, and should an epidemic of smallpox or any disease of an infectious nature occur, it is hardly possible that all patients could be cared for in the hospital as it is at present arranged.

IN PHILADELPHIA the sum of \$465.50 has been contributed during the week ending July 21, toward defraying the expenses incurred by the Children's Week Association. The object of this association is to give an opportunity for children to enjoy a few days' recreation away from the crowded tenement districts of the city, thereby lessening the infantile mortality.

TO DR. C. ALEXANDER of Breslau has been awarded the prize of \$60 for the best work suitable for distribution in pamphlet form for the enlightenment of the public in respect to quacks, faith-healers, etc. The committee, which includes Professors Eulenburg and Gutstadt of Berlin, states that fifteen works were received in competition, all very good. Two others were awarded a smaller prize.

AN EPIDEMIC of anthrax is now prevailing to a moderate extent in Bedford Co., Pa. Up to July 25, six deaths had occurred among horses, and two men were seriously ill with the disease. State Veterinarian Leonard Pearson is making a thorough investigation. The epidemic is thought to be due to cattle contracting the disease by drinking water from a tannery in which infected hides had been used last year.

A NEW research scholarship has been founded by the British Medical Association, of the annual value of £200—\$1000—to be known as the Ernest Hart Memorial Scholarship, in memory of the late editor of the *British Medical Journal*. The appointee must devote himself to the study of some subject connected with state medicine. Dr. John W. H. Eyre has been appointed the first scholar.

THE Rebecca Smith Playhouse for Children, recently built in East Fairmount Park, Philadelphia, at a cost of many thousands of dollars, and afterward presented to the city, was opened to the public on July 24. The building is of the colonial style of architecture, with spacious verandas extending entirely around the struc-

ture. On the first floor is the superintendent's office, dispensary and kitchen, on the second floor a dormitory, playroom, sitting-room, bath-room, etc.

THE SEQUEL of the Bianchini case—the pardoning of the wife through the petitions and efforts of the husband—is as extraordinary as the case itself, in which the wife was condemned to five years' solitary confinement on clinical, with absolutely no chemical, evidence that she had been trying to poison her husband with atropin. (*JOURNAL*, xxxii, p. 900.) Bianchini is a well-known Paris artist.

MR. MARCEL BAUDOUIN entertained the French Medical Press Association after its trimestrial banquet in Paris, July 7, with an exhibition of original photographic views taken by himself during his tour of this country. They included scenes along the Northern and Union Pacific railroads, and their connections between New York and San Francisco, and in the Yellowstone National Park.

IN SEVERAL of the principal cities of Cuba there have been asylums for lepers who resorted to them voluntarily, but no strict isolation; during certain hours of the day the inmates were free to go in and out as they pleased. The sanitary authorities of Havana have now forbidden the lepers to leave the asylum and have decreed that all persons affected with the disease, rich or poor, must henceforth reside in them.

THE SEMICENTENNIAL of the Netherlands Association for the Progress of Medicine is being celebrated with a retrospective exposition which has collected many curious medical and surgical relics of former ages and shows the great progress accomplished, especially in the treatment of the insane. Among them are the wooden clappers which lepers were compelled to carry to give warning of their approach, and their peculiar black hats with white ribbons.

THE WORK of our American sanitarians in Cuba is already bearing fruit far beyond its borders. The last issue of the *Gaceta Medica de Bahia* republishes some ringing lay editorials which assert that the sanitizing of Rio Janeiro and other South American ports may possibly prove one of the most remarkable and direct results of the Spanish-American War and "North American jingoism."

ENTERED on the records of the Medical Institute of Bavaria, according to *Echo Med.*, July 16, is a resolution, voted and presented to the authorities in 1836, protesting against the introduction of railroads into the country: "the rapid movement of the train cannot fail to produce serious mental disturbances in the brain, of the nature of delirium tremens." "Persons gazing at a rapidly moving train are also liable to be similarly affected and the track should be concealed by a five-foot fence its entire length."

OSCAR F. LACKEY, the first yellow fever patient in this country to be treated with antitoxin serum, was discharged, cured, from the New York Quarantine Hospital, July 24. In commenting on the case, Dr. A. H. Doty, health officer of the port, is credited with saying that the case was well marked and of the pronounced type. With his consent the serum was used subcutaneously, the first injection of 25 c.c. being given about five hours after the patient arrived at the hospital, July 6. Three hours later he received the second injection of 25 c.c., and four hours later a final injection of 50 c.c. No other treatment was given. The case was kept under close observation day and night and every detail carefully noted.

A PHYSICIAN of Sparrow's Point, a suburb of Baltimore, is being tried on a charge made by the State Board of Health for failure to notify the authorities of the existence of a case of smallpox. As this is the first prosecution of the kind outside of that city, the result is regarded with much interest to medical circles.

THE BACTERIOLOGIC department of Baltimore, under Dr. Royal Stokes, is saving the city thousands of dollars in the way of prophylaxis of communicable diseases. Examinations are made free of charge for all physicians, and reports sent to the sender of the specimens. In connection with the work an examiner of throats has been appointed to make examinations whenever deemed expedient in the case of school children.

THE GOVERNMENT of Colombia has officially requested the presence and advice of the Swedish leprologist, A. Hansen, in its struggle against the high tide of leprosy that threatens to overwhelm the land. He has not decided yet whether to undertake the task or not. The conditions are by no means so favorable as in Norway, where the number of lepers is comparatively small and the government is pecuniarily equipped. It is very different in Colombia, with its bankrupt and unsettled government and 1 per cent. of its entire population of three and one-fourth millions already affected. The scheme for establishing a great leprosorium on the island of Coiba was found impracticable. A communication to the last *Derm. Cbl.* states that the disease has spread to a frightful extent among the wealthier white families.

A PUBLIC subscription has been opened in France for the benefit of the laboratories for research in infectious and contagious diseases. The state allows them \$25,000 a year, which is divided among the thirty-three institutions of the kind, and the committee in charge has issued a strong appeal for liberal contributions, stating that any disaster causing loss of life meets with a generous response from the public, while the fact that 657 persons die every day from preventable diseases is regarded with apathy. An instance is a recent explosion in which fifty-three lives were lost and \$60,000 was promptly contributed by the people throughout the country to relieve the suffering, while no one thought of contributing a cent in the case of an epidemic of typhoid in a neighboring town at the same time, and which caused a hundred deaths. The amount received is already \$15,000, the railroads heading the list with \$8,000.

THE EXPERTS have established in the F. Maier case at Vienna, according to *Neue Freie Presse*, July 1, that transient mania from carbon dioxide intoxication was the cause of the murder, although there is only a single case of mania from inhalation of carbon dioxide on record, and none in which such a deed of violence occurred. The accused, a trusted and reliable employé of the railroad for thirty-five years, 58 years of age and happily married, had been advised to "take a sweat" for his influenza, and when he went to bed stuffed a rag into the stove-pipe to keep the room warm as the fire was nearly extinct. Aroused several hours later by an approaching train he rushed out of doors, and the fresh air in his condition must have produced mania, as he vaguely remembers going back into the house and calling his wife and sister to come out. When they failed to respond he became furiously enraged and, seizing a razor, attacked them in a frenzy. The sister in an adjoining room managed to escape, but the wife's throat was cut. Carbon dioxide intoxication was evident in the blood of the wife.

ACCORDING to a circular letter from Dr. J. N. McCormack, secretary of the Kentucky State Board of

Health, the Board will hereafter refuse to recognize, as a basis for certificates to practice medicine, diplomas from any medical college which does not, in good faith, comply with the requirements of the Association of American Medical Colleges, the American Institute of Homeopathy and the American Eclectic Medical College Association, respectively, both as to preliminary education and four years' course of study. This means that no school that graduates three-year students will be recognized in that state hereafter. The Board provided an examination for three-year graduates of the present year, as many of the students had attended such schools in ignorance of its advanced requirements, but found this course unsatisfactory, a large percentage of the examinations indicating incomplete preliminary education as well as imperfect medical training.

REPORTS of August 2 indicate that the yellow fever situation at the National Soldiers' Home, near Hampton, Va., and commented on in our editorial pages, has improved, with, however, 4 suspicious cases on that date, while 2 cases were reported at Phoebus. The announcement of yellow fever at the Home was made on July 30, when it was said that 30 well-developed cases existed, with 7 deaths on the 29th and 3 on the 30th. The authorities at once instituted a most rigid quarantine along the coast and about the Home, where there are about 4000 old soldiers from all parts of the Union. On July 31 there was but one death and one new case. On August 1 there were 4 deaths at the Home and 2 at Phoebus, with 6 new cases at the latter place and 1 at Hampton. The disease is supposed to have been brought to the Home by an old soldier who recently visited Santiago on leave of absence.

CRIMINAL FAITH-HEALING.—A recent attempt to practice obstetrics by means of "faith healing," by a Chicago disciple of Dowie, may possibly prove to be an eliminating factor of this masquerading sect in the State of Illinois. Mrs. Flanders, a member of the Dowie Tabernacle, invoked the aid of one Mrs. Bratz, to attend her in the capacity of a midwife, and after a prolonged labor of three days a child was finally born. When several days had elapsed it was observed that the prayers that had been so effectual in the delivery of the child were of an opposite character in the case of the mother, who was steadily becoming weaker. In spite of the prayers and entreaties of the patient and her "divine" assistant, a physician was summoned July 23. When he arrived he found the patient in the final stages of puerperal fever. She was in a semi-delirious condition; temperature was 105.2, with very rapid pulse, typhoid present; the perineum was lacerated, with a fetid discharge which permeated the entire room. The patient was immediately taken to St. Luke's Hospital, where, in spite of all efforts she died July 27. The coroner's inquest will be held August 8, and the State Board of Health will probably prosecute Mrs. Bratz for practicing midwifery without a license.

Menstruation by Ear.—Lermoyez has a patient who commenced to menstruate with the clear, non-coagulating blood issuing from the right ear each month, after the usual premonitory symptoms of the period. No lesion of the ear can be discovered; the tympanum is intact. After three years the menses occurred normally through the vagina, alternating with the ear, and gradually the normal menstruation has supplanted the aurial. A slight degree of hypoesthesia of the tympanum and meatus and auditory anesthesia indicate auricular hysteria.—*Semaine Méd.*, July 13.

Therapeutics.

Therapeutics of Camphor.

Herrgott, quoted in "Sajous' Annual," states that when used as an antialtagogueit may be applied over the breasts in the form of an ointment or liniment of camphor, and the drug also should be given internally in doses of 1 or 2 grains (.065—.13 gm.) once, twice or three daily.

"In infectious diseases, the exanthemata, pleuro-pneumonia with meningal symptoms, in infections endocarditis, etc., more especially if the patient is in a condition of collapse, 15 to 45 minims (.72—2.26 gm.) of a 10 per cent. solution of camphorated oil affords prompt relief, employed subcutaneously. Even as much as 15 grains (1 gm.) of camphor daily, far from aggravating ameliorates cerebral symptoms. From 7 to 15 grains (.46 gm.) produces remarkable restorative effects."

"In influenza, pneumonia, typhoid, bronchopneumonia, etc., camphorated oil yields good results, but should be administered before the patient is too weak; it produces an increase of arterial pressure, free expectoration, and a feeling of physical well-being. If given by the mouth its taste may be disguised by essence of peppermint. It appears to be contraindicated where there is great cerebral excitement."—*Taussig*.

Camphorated oil produces the most remarkable effects in follicular angina, coryza, and acute pharyngo-laryngitis; in bronchitis it is a good expectorant; in fibrinous pneumonia it diminishes temperature and notably ameliorates the general condition. It is also serviceable in chloranemia and in phthisis during the period of softening with ulceration, night sweats, and hectic fever. In tuberculosis of the larynx the pains in the throat are notably diminished. Favorable action is likewise observed in hemoptysis.—*Alexander*.

"Camphor is to be recommended hyperdermically in heart-failure, preferably employing camphorated oil. In a case in which the patient had a number of times been absolutely pulseless and apparently lifeless, its use was followed by the most gratifying results."—*West Philadelphia Polyclinic*.

For intestinal fluxes camphor is an efficient remedy. "It is essential to use the strong solution or essence (spirit) of camphor, of which 3 minims (.18 gm.) should be given on a cube of sugar or on a crumb of bread every few minutes. After one or two doses the diarrhea ceases, the pulse becomes stronger, color returns to the face, and the patient is on the high road to recovery. The tincture is almost equally useful in the initial rigor of acute specific diseases and in severe chill."—*Murrell*.

Local Treatment of Burns.

The local treatment is to be directed toward the limitation of the resulting inflammation, the prevention of septic infection, assisting the normal elimination of the eschar, the development of granulations, and limitation of the deformity. In burns of the first degree little or no treatment may be demanded. In the more aggravated cases of this type the application of home measures, such as bicarbonate of sodium, the white of egg and sweet oil (equal parts), lead water and laudanum, and the various hot or cold means generally at the disposal of the house-wives will suffice.

Burns of the second and third degrees must be more strenuously treated. It is often a difficult problem to know which is the more soothing application to be advised and from which we may get the better result. In one case hot applications, in another cold; in some wet, and in others dry measures are to be employed. The vesicles, if numerous, should be untouched; but if only a few, they are best evacuated. The use of carbolyzed vaselin, 15 to 20 grains (1.2 gm.) to 1 ounce (31.1 gm.) watery solutions of carbolic acid, about 20 grains (1.3 gm.) to an ounce, (31.1 gm.), subnitrate of bismuth $\frac{1}{2}$ to 1 dram (1.95—3.9 gm.) to an ounce (31.1 gm.) of ointment of zinc

oxid or petrolatum, boric acid, either in watery saturated solutions or ointments of either zinc oxid or petrolatum in strengths varying from $\frac{1}{2}$ to 2 drams (1.95—7.8 gm.) to 1 ounce (31.1 gm.) bicarbonate of soda in almost full strength, in ointment or watery solutions, and starch in varying proportions will usually be found very efficacious. Turpentin, where granulations are sluggish, will give excellent results, used either in full or diluted strengths, taking care not to produce too much stimulation. H. L. Melnis states that spirits of turpentin applied to a burn of either the first, second, or third degree almost at once relieves the pain, while the burn heals. After wrapping a thin layer of absorbent cotton over the burn the cotton is saturated with common turpentin and covered with bandages. Being volatile, the turpentin evaporates, and it is therefore necessary to keep the cotton moistened with it. When there are large vesicles, they are opened on the second or third day. It is best to keep the spirit off the healthy skin if possible, to avoid the local irritation.

Surgery of this day has placed many excellent antiseptics at our disposal, and there is no better application than bichlorid of mercury in the proportion of 1 grain (.065 gm.) or more, to 1000 parts of water and kept in constant contact, the dressings being made without removing the former cloths.

Acetanilid in full strengths of powder will be found effective, care always being given not to apply it over too great an area without watching its effect.

Ichthylol in watery solutions 1 (3.9 gm.) or more drams to the ounce (31.1 gm.), or in glycerin similar strength, or even in ointment form, with zinc oxid or petrolatum, about 1 to 3 iodid derivatives, such as iodol, aristol, europen, applied iodid derivatives, such as iodol, aristol, europenod, applied preferably in ointment, 15 to 30 grains (1.2 gm.) to the ounce (31.1 gm.) of petrolatum or lard are reliable measures.—*J. Abbott Cantrell in Sajous' Annual*.

The following prescriptions containing ichthylol are recommended by Leistikow for burns of the first and second degree:

BURNS OF THE FIRST DEGREE.

B. Zinc oxid.....	20 parts
Magnes. carb.....	10 parts
Ichthylol.....	1 to 3 parts

This powder, containing ichthylol, is the most satisfactory form in extensive burns of the first degree, and should be plentifully applied, being spread evenly over the surface.

BURNS OF THE SECOND DEGREE.

In extensive burns of the second degree a soft paste like the following is preferable:

B. Carbonate of lime.....	10 parts
Zinc oxid.....	5 parts
Oil.....	10 parts
Lime water.....	10 parts
Ichthylol.....	1 to 3 parts

BURNS LIMITED TO REFRECTION OR VESICATION.

Nolda recommends the following:

B. Europen.....	1 part
Vaselin.....	
Lanolin, of each.....	10 parts

This is applied three or four times a day to burns limited to refubefaction or vesication.

EXTENSIVE BURNS.

"The following may be used in the treatment of extensive burns:

B. Aristol.....	1 part
Sterilized olive oil.....	2 parts
Vaselin.....	8 parts

Around the edges of the burns, after the ointment is spread, the aristol in powdered form is dusted. In burns of small extent the powder form only is employed. Cleanliness must be thorough whenever the dressing is changed. One of its great advantages is its freedom from poisonous effects. There is some smarting at first, but it soon passes off."—*Walton*.

Pericarditis.

J. L. Lynch advises the following mixture in pericarditis:
 B. Tinct. veratri viridis
 Tinct. opii aa. ʒi 3/90
 Sodii bicarb. ʒii 7/80
 Sacchari albi. ʒiv 15/50
 Aque q. s. ad. ʒvi 186/60
 M. Sig. Tablespoonful every two or three hours.
 Thomas Stretch Dowse says the treatment must be in a degree palliative, and symptoms must receive special consideration and treatment as they arise. The rheumatic element may apparently demand the salicylates, but they must be given with caution. A mixture of

B. Liquor ammon acetatis.	ʒi	3/90
Spts. ether nit.	ʒss.	1/95
Tinct. digitalis	m. v	30
Aque, ad.	ʒi	31/10

may be given every four hours. Should there be pain, 1 grain (.065 gm.) of the watery extract of opium may be given, with each dose of the mixture. Preordial distress is best relieved by the application of six or eight leeches. In the initial stage, with high fever and well-marked friction sounds, the writer believes in the administration of Dovers' powder gr. iiss (.16 gm.) with calomel gr. ʒ (0.08 gm.) every four hours. Preordial distress is sometimes relieved by camphor liniment and belladonna and spongio piline wrung out of hot water and sprinkled with a few drops of turpentin, which may be applied to the chest. If the dyspnea is urgent from great distension of the sac with fluid, potassium iodid may be given with bark (cinchona) in full doses, and diuretics may be tried, with saline purges. This failing, paracentesis may be performed. The fifth left intercostal space is usually selected. An incision is made through the skin one inch from the sternum, and a trocar and canula are then inserted. When pericarditis is secondary to ulcerative endocarditis or septicemia, brandy and quinin must be freely given.

PERICARDITIS WITH EFFUSION.

The following prescription is recommended by Kilgour for pericarditis with effusion:

B. Infusi digitalis.	ʒiv	124/40
Potass. acetat.	ʒii	7/80
Spts ether nit.	ʒii	7/80
Aque cassiae.	ʒiiss	46/60
M. Sig. Tablespoonful every four hours.		

Deaths and Obituaries.

ROBERT HUNTER, M.D., New York University, 1846, died suddenly on his hunting preserves in Cesarea, Ontario, July 29. He was born in Ayrshire, Scotland, seventy-six years ago, was educated in Edinburgh, and then came to New York, where he lived for twenty years.

L. A. CLARK, M.D., Rockford, Ill., died July 22, after a long illness. Dr. Clark was born in 1849, and during the early seventies served as surgeon on one of the Pacific steamers between California and China and Japan, and was at one time head of a smallpox hospital at San Francisco.

JOSEPH DONSON LOMAX, M.D., Troy, N. Y., a graduate of the College of Physicians and Surgeons, New York City, 1862, and superintendent of Marshall Infirmary, Troy, died July 22.

CHARLES J. MADDOX, M.D., Rockville, Md., died July 26 at the age of 80 years. The Doctor was a descendant of one of the earliest settlers of Maryland, and received his degree of A.B. from Georgetown University and of M.D. from the University of Maryland. His death was the result of a fall received in 1891.

J. N. Charbonnet, M.D., New Orleans, La., Tulane University of 1887, died July 23, at the age of 33 years. . . . J. N. Hall, M.D., New Philadelphia, Ill., aged 85 years, July 28. . . . Acting Ast. Surgeon John V. Hamilton died at Matanzas, Cuba,

July 26. . . . Henry Navigo, M.D., Georgetown, Pa., July 19, aged 50 years. . . . W. W. Nelson, M.D., Tabery, N. Y., July 22, aged 36 years. . . . H. V. Sooter, M.D., Ibernia, Mo., July 24. . . . John F. Wolff, M.D., Philadelphia, July 24, aged 26 years. . . . J. S. Tracy, M.D., formerly of Winona, Minn., died in Honolulu recently.

DEATHS ABROAD.

V. Mihalkovics, Budapest, noted for his works on microscopic and embryonic anatomy. . . . Professor Herpin, Tours. . . . Professor Campos da Paz. . . . T. B. M. Dack, M.D., Clemore, Ont., a graduate of the Toronto School of Medicine, aged 35.

Miscellany.

Philadelphia Mortality Statistics.—During the week ending July 29, there were 481 deaths, this being a decrease of 29 over the previous week and an increase of 16 over the corresponding week of last year. Of the total number of deaths 112 occurred in children under the age of 5 years. The principal causes of death were: apoplexy, 5; nephritis, 39; cholera infantum, 78; cancer, 13; tuberculosis, 51; heart disease, 26.

Tuberculosis Among Cattle in Canada.—The *Union Medicale du Canada* asserts that comparatively few cattle in Canada are affected with tuberculosis. Only 8.5 per cent, reacted to tuberculin, out of 10,000 animals tested at the request of the owners, in 1898. Generalized tuberculosis was found in but 24 out of 33,000 slaughtered at Montreal in 1896. The severity of the quarantine for the European and United States markets has reduced the number of tuberculous animals offered for exportation, but this means that suspicious animals are retained for domestic use. The editorial urges the necessity of the detection of affected animals and their isolation, killing all with manurary or generalized infection, and keeping the rest for breeding and slaughtering, which would soon eradicate the disease without loss to the owners.

Symptoms and Morbid Anatomy of Yellow Fever.—The presence in the United States of an epidemic of yellow fever, and the yellow fever scare which occurs from time to time, should stimulate us to learn and to keep at our fingers' ends the more prominent and early symptoms of this disease. The morbid anatomy, too, is most essential as a diagnostic aid in settling disputes in doubtful cases. The bacteriologic findings, while still in doubt, may soon be cleared up, but for the present we will have to rely more or less on the classic symptoms and the results depicted on the post-mortem table. Some weeks ago Major and Brigade-Surgeon D. T. Laine made a collective investigation of yellow fever in the Island of Cuba. Thirty-five answers were received from physicians of note practicing in Havana, and two from Matanzas, relative to this question. In reply to the question: "What do you consider the most pathognomonic symptoms of yellow fever?" seventeen were of the opinion that pathognomonic symptoms do not exist, and eighteen do not rely alone on one symptom, but on all presented in a given case. It was the opinion of the majority that: "The remission from the first period, followed by the sudden elevation of temperature of the second period, in conjunction with *albuminuria, icterus, and hemorrhages* are the most typical symptoms" (*Med. News*, lxxv, No. 1). The symptoms not classed as characteristic were black vomit, bloody evacuations, headache, rachialgia, congestion of the conjunctiva, and congestion of the face. These latter symptoms, it was believed, might also be present in other infectious fevers as well as yellow fever. It would appear, however, that with this opinion Guitéras does not entirely agree. A portion of the report is in accord with his belief relative to the diagnosis of yellow fever. In a pamphlet on yellow fever recently issued by the United States Marine-Hospital Service, Guitéras says:

"The diagnosis of individual cases of yellow fever is in my opinion very easy. There is no acute febrile disease in which there are so many signs that may be called pathognomonic. The diagnosis of the disease rests upon three such symptoms, namely: 'the facies, the albuminuria, and the want of correlation between the pulse and the temperature.' I rely mainly for my diagnosis upon the facies, which I consider extremely characteristic. However, as I consider it my duty to convince the local practitioners of the existence of the disease, I make it a rule not to announce officially the existence of yellow fever until I have been able to show the presence of albumin in the urine (Heller's contact method), which occurs on the second, third or fourth day." In an article in Keating's "Cyclopaedia of Children's Diseases," Guitéras states that this albuminuria may only persist for a few hours during the day, but careful search will nearly always detect its presence. He concedes that albuminuria may also occur in other febrile diseases than yellow fever, but in none of them so constantly nor so early when in connection with such mild manifestations of the toxemia. In all such diseases the albuminuria will be found at the end of the first week, or during the second week. He lays considerable stress on the detection of jaundice early in the onset of the disease, speaking as follows (pamphlet on yellow fever, see above): "The physician to whom I am showing the signs of the disease usually expresses surprise when I state that jaundice is present. It is, of course, best noticed in the sclerotics. The icteric hue is better seen at some distance from the patient than when the eyes are closely inspected. The jaundice of the skin is best detected by taking up a fold of the skin between the fingers, when the contrast between the yellowish, anemic skin and the surrounding congested area will become well marked. The characteristic feature of the pulse is that while the temperature may be rising, the pulse will be falling. This frequently occurs on the third or fourth day, and the pulse in the evening may be ten beats slower than in the morning. In dengue the fall in the pulse-rate corresponds to the fall in the temperature."

Regarding the morbid anatomy Wasdin makes the assertion that the yellow fever cadaver has assuredly a most characteristic appearance, as follows: "All subjects dead of this disease bear a close resemblance to each other (*Med. News*, lxxiii, No. 10). The body is usually quite rigid, more or less intensely yellow, whites of eyes yellow, hypostasis in the dependent portions of the body comes on very early, the gums are bloody and the anterior nares caked with blood." In addition Guitéras states that the features of the cadaver are somewhat bloated. In the abdominal cavity the most notable change from the normal is seen in the liver. It is at once recognized by its peculiar color, and Guitéras goes so far as to state that he has never seen it absent in an unsuspected case of yellow fever. It is thus described by the latter writer: "The organ is not enlarged. It is light in color, in which yellow predominates decidedly. The comparison to boxwood is a good one. In some cases the discoloration may appear in patches. Microscopically the evidences of fatty degeneration are present, as well as interstitial inflammation. The blood-vessels are empty. The liver cells are cloudy or decidedly fatty."

Wasdin describes the color of the liver as being from a light buff or boxwood to a dark brown. In some cases it has a nutmeg appearance. On section it has a pale yellow color and imparts to the knife a greasy stain. Both Guitéras and Wasdin lay stress on the contents and conditions of the stomach. Thus the former states that the organ is inflamed, the blood-vessels engorged with blood, and in some places extravasations may be found, and the organ may during the dark, fluid "black vomit," even though ejected containing life. Wasdin states that: "The most marked changes are found on the anterior surface and near the pylorus, the membrane here presenting a deep port wine stain from diffuse extravasation and often evi-

dence of free hemorrhage. After the lapse of several hours the mucous membrane becomes softened and many erosions are found. The vessels of the duodenum are swollen, hemorrhagic, and contain dark blood, and the whole intestinal tract shows minute extravasations. The intestines have a glazed appearance and are sticky to the touch, and the peritoneal fluid has a darkish tint." Both writers state that the kidneys present the lesion of parenchymatous nephritis. There may be extravasations on the cortex, but the capsule shows no change from the normal. Its general appearance is "paleness," but incision shows congestion of the renal veins. At the bases of the pyramids of Malpighii, pale yellow fatty areas are seen. This latter change, according to Wasdin, is quite marked. The spleen is not altered in yellow fever; any deviation from the normal indicates some concurrent complication. This latter observation is important in excluding malaria, in which the organ would be enlarged. According to Guitéras the two diseases have been found to coexist in the same patient, and have led to mistake in diagnosing yellow fever. The adrenals are normal. The contents of the thoracic cavity show no special change except that a yellow tint is prominent. Wasdin has noticed considerable congestion of the vasa vasorum at the base of the heart, forming a tracery over the serosa and on the walls of the auricles, and at times being echymotic.

London.

[From our Regular Correspondent, July 15.]

DREYFUS AND HIS PHYSICIAN.—There is one fact in the later revelations of the unspeakable Dreyfus case of which we as a profession have a right to be proud, and that is the statement of Captain Dreyfus, in his pathetically moderate description of the atrocities to which he was subjected, that he owes his life to a prison physician, whose name even he does not know, but whose emphatic protests compelled and frightened his brutal jailers to abandon their fiendish plan of treatment, which was intended to either kill or drive him insane. He it was who insisted on the removal of the leg-irons, and secured the alteration of the fence which was converting the wretched little hut into a veritable Black Hole of Calcutta. This took courage, for we must remember that the entire infamy was approved, if not actually devised by the Minister for the Colonies himself, and the doctor's name certainly ought to be learned at once and placed on the roll of honor with those of Picquart and Zola. A profession which can make a Frenchman behave like a man in the Dreyfus case has something remarkable about it.

PILLS BY THE BOTTLE.—A most singular cause of death was recorded yesterday at Bath, where a man died of perforation of the stomach, due to the presence of some twenty small bottles, tightly corked and sealed, and containing mercury. These together weighed over a pound, and had been swallowed by the deceased while in a state of dementia, under the impression that they were medicine—presumably pills of much potency.

DEATH OF THE CZAREVITCH.—A melancholy medical interest attaches to the death of the Czarevitch, previously noted in the JOURNAL, that he died of the same disease as did his father only five years before. The hereditary influence could only have been of the most indirect character, as the first symptoms of consumption appeared in both father and son within a few years of each other; indeed, the son's condition was publicly admitted first, and it seemed at one time as if he were going to succumb before his father.

BLACKMAILER RIGHTFULLY TREATED.—There is some sense in an honest man going to law in England; in America, alas, the utmost that a doctor can hope to obtain from an appearance in court against a patient is to escape with his life—and the privilege of paying his own costs. But in England he can actually get justice on the blackmailer. Dr. Davidson, of Gosherton, has just had this pleasure, and deserves the hearty thanks of our entire profession for his high-minded pluck in "carrying the war into Africa." A couple of months ago he

received the usual note from a woman who had consulted him a day or two before. "Sir—Unless you do me some recompense for insulting me the way you did at your surgery I shall inform someone else about it. It ought to be well worth £10 to you for me to say nothing about it." This has a most familiar sound, but the sequel is a delightful novelty. Dr. Davidson not only rejected her demand but promptly prosecuted her as a blackmailer, and within a month she was found guilty and sentenced to twelve months' imprisonment with hard labor, and most wonderful of all, by a jury. Fancy twelve untried American citizens, of the noble and chivalrous type that usually get on our juries, passing such a sentence as this on a woman, and a poor woman at that, for anything she might have done or threatened to do to any "doctur feller." We have known physicians in the Middle West who actually dared not hold any property in the state in which they lived, except a homestead in the name of their wife, for dread of the malpractice and other blackmail suits with which they were threatened, and which would certainly be brought, in full reliance on a sympathetic jury, if any trace of attachable property could be found.

APPENDICITIS IN CLASSIC LITERATURE.—Appendicitis has been given a place in classic literature at last. In an interesting note in the *Guy's Hospital Gazette*, Sir Samuel Wilks quotes a paragraph, written by Addison—of "Addison Disease" fame—in 1836, giving a full and surprisingly accurate account of "a deep-seated abscess in the right iliac region—which arises in a large majority of cases from disease of the appendix cæci: this is often found detached in the midst of the abscess, with perforation at its extremity." He even alludes to the "grape-seed" theory, to condemn it, on the shrewd, if slightly mistaken ground that the real cause of the disease is the presence of oval fecal concretions, containing "much limy matter." Dr. Wilks also calls attention to a curious passage, referring to the oecum, in "Tristram Shandy." It occurs in the famous conversation on all sort of improper anatomic matters between Dr. Slop and Tristram's father, the night of his birth. "Tell me, Doctor, where is the blind gut?" said my father. "It lies between the ilion and the colon," replied Dr. Slop. "Is it the same in woman as in man?" "The very same," said Slop. "That's more than I know," quoth my father." The question and curiously skeptical rejoinder of Shandy, Sr., is oddly significant, in view of the far greater frequency of "typhlitis" in men than in women, and as Sterne himself was a practicing physician, one is almost tempted to suspect that some knowledge of this clinical fact had been gained by him, or was current in the profession, even at that early date.

COMPARATIVE RARITY OF APPENDICITIS IN ENGLAND.—Now that appendicitis has been given a respectable antiquity, perhaps the English practitioner will begin to recognize it officially. The difference between the frequency of appendicitis in England and in America is something astonishing. We have talked with intelligent English physicians in large practice, and they have assured us that they do not see three cases a year, and with consulting surgeons who operate almost as infrequently. We can hardly believe that all this discrepancy is due to the greater frequency of the disease on this side of the Atlantic, although a decided difference is proved to exist by the rarity with which appendicular mischief is found in the routine autopsies at the great hospitals. Our English brethren, with characteristic frankness and self-deprecation, explain it by the statement that appendicitis is the rage in America, and we diagnose it to please our patients. Others, even more benighted, ascribe it to the fact that we eat "such a beastly lot of fruit," a weak and reprehensible habit fit only for children and "furriners." The truth probably lies between us, too great an enthusiasm to be fully abreast of the pathologic procession, on our part, and too strong a tendency to keep a safe distance behind it, on theirs. Possibly the mixture of nationalities, and changed environment, in our new country, may make our

attaching appendicular "remnant" even more variable and unstable.

COMMENDABLE COURTESY.—The invitation of Clark University to Ramon y Cajal, to deliver a series of lectures on the structure of the brain, at its centenary celebration, is widely commented on in England as a gratifying proof of the absolute internationalism of science, and as a most graceful and commendable act of courtesy to a whilom foe.

ROYAL COLLEGE OF SURGEONS.—The annual meeting of the Royal College of Surgeons revealed that the Council had no intention of granting any rights whatever to Members. A new charter was asked for, simply adding the power to create Honorary Fellows, and the president plaintively begged the meeting not to cloud the glory of the coming centenary by raising "discordant issues." But as this was simply a graceful dodge to cajole the Members into remaining unrepresented until the next centenary, the meeting naturally objected, and a motion to return the proposed charter to the Council, with a statement that the powers asked for were inadequate, was carried by a large majority.

KEROSENE AND MOSQUITOES.—It is of interest in connection with the approaching expedition to Sierra Leone, to test the possibility of exterminating mosquitoes, to know that a test has just been made of the kerosene method. The water-tank of an Italian villa was found swarming with culex larvæ estimated at 400 or 500 to the bucketful. Ten drops of kerosene added to the bucketful killed them all in twenty minutes, and a few teaspoonfuls sufficed for the whole tank of 300 cubic feet capacity. At this proportion quite large ponds or even marshes may be coated at a very slight expense.

SEATS FOR SHOPWOMEN.—The much-needed seats-for-shop-women-bill has just passed the House of Lords by a large majority, this giving Lord Salisbury a well-deserved snub for his captious and unintelligent resistance to the measure. He again attacked it, but to no effect.

Queries and Minor Notes.

DOSAGE OF CURARE.

ANTIGO, WIS., July 26, 1899.

To the Editor:—The enclosed was taken from the JOURNAL, and as I have a case of epilepsy I would like to try curare, but it seems to me the dose altogether too large. Is the prescription correct? Kindly let me know through next week's JOURNAL, and oblige.

Yours respectfully, M. J. D.

ANSWER.—The clipping enclosed is taken from the JOURNAL, Jan. 7, 1899, p. 29, and is an abstract from the *Jour. de Med. de Paris*, Dec. 11, 1898. The dose as given is unquestionably too large. The dose of curare is from 1-20 to 1/2 grain (0.005-0.03 gm.), while that of the alkaloid curarin is as small as 1-200 or 1-100 grain (0.0005-0.0006 gm.), hypodermically.

The Public Service.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., to and including July 27, 1899:

- F. M. Barney, acting asst.-surgeon, leave of absence granted.
- Henry H. Bradley, acting asst.-surgeon, to temporary duty in the camp hospital at Camp Meade, Pa.; later orders require him to proceed to San Francisco, Cal., for duty in the department of California.
- Robert Burns, acting asst.-surgeon, from Plymouth, N. H., to Fort Ethan Allen, Vt., to accompany the 3d Cavalry to Manila.
- John R. Clark, acting asst.-surgeon, from Fort Wadsworth, N. Y., to San Francisco, Cal., for duty in the department of California.
- A. P. D. Cleary, acting asst.-surgeon, from Fort Screven, Tybee Island, Ga., to Atlanta, Ga., as attendant surgeon and examiner of recruits.
- Charles F. Craig, acting asst.-surgeon, orders directing him to proceed from the Josiah Simpson Hospital, Fort Monroe, Va., to San Francisco, Cal., are revoked and he will proceed to Havana, Cuba, for duty at Camp Columbia, Cuba.
- Gerry S. Driver, acting asst.-surgeon, from Porto Rico to Fort Myer, Va., to accompany the 3d Cav. to Manila, P. I.
- Douglas F. Duval, lieutenant and asst.-surgeon, U. S. A., from West Point, N. Y., to San Francisco, Cal., for duty in the Department of California.
- Charles B. Ewing, captain and asst.-surgeon, U. S. A., from Fort Brady, Mich., to San Francisco, Cal., to report for duty with the 3d Cav.; these orders so amended as to direct him to join the said regiment at Seattle, Wash., on or before August 10.
- Hyman Finkelstone, acting asst.-surgeon, from New York City to Fort Ethan Allen, Vt., to accompany the 3d Cav. to Manila, P. I.

John N. Goltra, acting asst.-surgeon, from Fort Niagara, N. Y., to Fort Brady, Mich.

John C. Greenwalt, lieutenant and asst.-surgeon 33d Inf. Vols., from Chambersburg, Pa., to Fort Sam Houston, Texas.

William R. Hall, major and surgeon, U. S. A., from duty as attending surgeon, Washington, D. C., to New York City, August 15, 1899, for duty in the Department of the East; on the completion of this duty he will sail as a passenger on the hospital ship *Missouri* for duty in the Philippine Islands.

Charles L. Heilmann, major and surgeon, U. S. A., assigned as chief surgeon, Department of Texas.

John R. Hicks, acting asst.-surgeon, from Fort Crook, Neb., to Fort Scriven, Tybee Island, Ga.

William Reelin Kirk, acting asst.-surgeon, leave of absence granted. William F. Lippitt, jr., captain and asst.-surgeon of the general hospital at Washington Barracks, D. C.

Theodore J. Lyster, acting asst.-surgeon, from Ann Arbor, Mich., to Havana, Cuba, for duty in the Division of Cuba.

J. G. Marro, acting asst.-surgeon from Brainard, Neb., to San Francisco, Cal., for duty in the Department of California.

Louis M. Maus, major and surgeon, U. S. A., temporarily a member of a retiring board convened at Governor's Island, N. Y.

Willson Murray, acting asst.-surgeon, from Platte City, Mo., to Fort Myers, Va., to accompany the 3d Cav. to Manila.

George J. Newgarden, captain and asst.-surgeon, U. S. A., sick leave extended.

Jonathan D. Poindexter, captain and asst.-surgeon, U. S. A., relieved from further duty and station at Columbus Barracks, Ohio.

Ogden Rafferty, major and surgeon 27th Inf. Vols., relieved from further duty and station at Camp Meade, Pa.

Henry D. Snyder, captain and asst.-surgeon, U. S. A., member of a board of survey on subsistence stores at Savannah, Ga.

James B. Stuard, acting asst.-surgeon, from Burlington, N. C., to San Francisco, Cal., for duty in the Department of California.

Thomas C. Stunkard, acting asst.-surgeon, from Terre Haute, Ind., to San Francisco, Cal., for duty in the Department of California.

Frank L. R. Tetauere, acting asst.-surgeon, from Buffalo, N. Y., to San Francisco, Cal., for duty in the Department of California.

William H. Tukey, acting asst.-surgeon, from Malden, Mass., to San Francisco, Cal., for duty in the Department of California.

Wilfrid Turnbull, major and surgeon, Vols., leave of absence extended.

Charles Wilcox, captain and asst.-surgeon, U. S. A., leave of absence extended.

Charles E. Woodruff, captain and asst.-surgeon, U. S. A., from Benicia Barracks, Cal., to Manila, by the first available transport.

Movements of Navy Medical Officers.—Changes in the medical staff of the U. S. Navy for the week ending July 29, 1899:

Surgeon L. W. Atlee, detached from the *Bennington* and ordered home via *Solace*.

P. A. Surgeon G. Rothganger, detached from the *Marlette* and ordered home and to wait orders.

P. A. Surgeon M. K. Johnson, detached from the naval hospital, New York and ordered to the *Marlette*.

Asst.-Surgeon W. M. Wheeler, when discharged from further treatment at hospital, Yokohama, Japan, ordered home in the United States and to wait orders.

Asst.-Surgeon T. M. Lippitt, detached from the *Solace* and ordered to the *Baltimore*.

Asst.-Surgeon R. W. Plummer, ordered to the naval hospital, New York.

Surgeon J. W. Ross, retired, granted leave for one year abroad.

Asst.-Surgeon H. A. Dunn, detached from the *Panther* and ordered to the Washington Navy Yard.

P. A. Surgeon L. L. Von Wedekind, detached from the hospital, Cavite, P. I., and ordered to Mare Island, Cal.

Marine-Hospital Changes.—Official List of Changes of Station, and Duties of Commissioned and Non-Commissioned Officers of the U. S. Marine-Hospital Service, for the seven days ended July 27, 1899.

Surgeon F. W. Mead, to proceed to New York City and assume temporary charge of the purveying Depot.

P. A. Surgeon H. D. Geddings, relieved temporarily from duty on the commission for the scientific investigation of yellow fever, and assigned to temporary duty in the Hygienic Laboratory. To proceed to Boston, Mass., for special temporary duty.

P. A. Surgeon J. C. Berry, detailed for duty in the office of the U. S. Consul, Hongkong, China.

P. A. Surgeon C. H. Gardner, to assume temporary charge of the Port Townsend Quarantine.

P. A. Surgeon E. K. Sprague, granted leave of absence for 27 days from August 7, 1899.

P. A. Surgeon H. W. Wickes, granted leave of absence for 30 days from August 6, 1899.

Asst.-Surgeon S. R. Tabb, upon being relieved from duty at Baltimore, Md., to proceed to Savannah, Ga., and assume command of the service.

Asst.-Surgeon M. H. Foster, upon being relieved from duty at Savannah, Ga., to proceed to the Port Townsend Quarantine station, and report to the commanding officer for duty.

Asst.-Surgeon L. L. Lumsden, to proceed to Port Townsend, Wash., and assume temporary charge of the service.

Asst.-Surgeon W. C. Billins, relieved from duty at the Immigration Depot and directed to report to the commanding officer at New York City for duty and assignment to quarters.

Asst.-Surgeon Carroll Fox, to report to commanding officer, Baltimore, Md., for duty and assignment to quarters.

Asst.-Surgeon T. B. McClinton, to report to commanding officer, Cape Charles Quarantine, for duty and assignment to quarters.

Asst.-Surgeon D. H. Currie, to report to commanding officer at Louisville, Ky., for duty and assignment to quarters.

Asst.-Surgeon Joseph Goldberger, to report to Surgeon L. L. Williams, Immigration Depot, New York City, for duty.

Asst.-Surgeon Wm. A. Korn, to report to commanding officer, Chicago, Ill., for duty and assignment to quarters.

Asst.-Surgeon J. M. Holt, to report to commanding officer, St. Louis, Mo., for duty and assignment to quarters.

Asst.-Surgeon E. E. Trotter, to report to Surgeon L. L. Williams, Immigration Depot, New York City, for duty.

Asst.-Surgeon C. W. Vogel, to report to commanding officer, Boston, Mass., for temporary duty and assignment to quarters.

Acting Asst.-Surgeon Jay Tuttle, granted leave of absence for 7 days.

PROMOTIONS.

Hospital Steward Henry Gahn to be hospital steward and chemist. Hospital Steward W. L. Stearns to be hospital steward and assistant chemist.

APPOINTMENTS.

Carroll Fox of Pennsylvania, commissioned as assistant-surgeon. Thomas B. McClinton of New York, commissioned as assistant-surgeon.

Donald H. Currie of Missouri, commissioned as assistant-surgeon. John Goldberger of Pennsylvania, commissioned as assistant-surgeon.

William A. Korn of New Jersey, commissioned as assistant-surgeon. John M. Holt of New York, commissioned as assistant-surgeon.

Frederick E. Trotter of New York, commissioned as assistant-surgeon. Charles W. Vogel of Maryland, commissioned as assistant-surgeon.

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended July 29, 1899:

SMALLPOX—UNITED STATES.

Florida: Jacksonville, July 8 to 22, 5 cases.

Kentucky: Louisville, July 13 to 20, 10 cases.

Louisiana: New Orleans, July 15 to 22, 1 case.

New York: New York, July 15 to 22, 3 cases.

Ohio: Cincinnati, July 22, 5 cases, 1 death; Cleveland, July 15 to 22, 2 cases; Dayton, July 15 to 22, 2.

Pennsylvania: Pittsburg, July 15 to 22, 1 case.

Virginia: Portsmouth, July 15 to 22, 1 case.

Washington: Spokane, July 18 to 22, 5 cases.

SMALLPOX—FOREIGN.

Belgium: Antwerp, July 1 to 8, 3 cases, 1 death.

Brazil: Sao Paulo, June 27, epidemic.

China: Hongkong, May 27 to June 3, 5 cases, 1 death.

Cuba: Santiago, July 1 to 8, 1 case.

Greece: Athens, July 1 to 8, 15 cases, 5 deaths.

India: Bombay, June 20 to 27, 14 deaths.

Mexico: Mexico, June 9 to 16, 10 cases, 5 deaths.

Russia: Moscow, June 17 to July 1, 27 cases, 11 deaths; Warsaw, June 24 to July 1, 3 deaths.

Straits Settlements: Singapore, June 10 to 17, 1 death.

Uruguay: Montevideo, May 27 to June 3, 1 case.

YELLOW FEVER.

Brazil: Rio de Janeiro, June 9 to 16, 3 deaths.

Columbia: Panama, June 8 to 15, 10 cases, 4 deaths.

Cuba: Havana, July 6 to 13, 2 deaths; Manzanillo, June 27, 1 case in barracks; Santiago, June 27 to July 1, 08 cases, 13 deaths.

Mexico: Cordoba, June 27 to July 1, 17 cases, 9 deaths; Tampico, July 1 to 7, 1 case, 1 death; Vera Cruz, July 13 to 20, 17 deaths.

CHOLEERA.

India: Calcutta, June 10 to 17, 6 deaths.

Japan: Asaka and Hiogo, June 10 to 17, 1 case, 1 death.

PLAGUE.

China: Hongkong, May 27 to June 3, 92 cases, 97 deaths.

Egypt: Alexandria, July 6, one or two new cases daily.

India: Bombay, June 20 to 27, 50 deaths; Calcutta, June 10 to 18, 9 deaths.

Straits Settlements: Penang, June 10 to 17, 11 cases, 8 deaths; Singapore, June 10 to 17, 1 death.

CHANGE OF ADDRESS.

Brown, G. H., from Davis Junction to 298 Maxwell St., Chicago.

Bryan, C. M., from 2642 Wentworth to 3030 Washab Avenue, Chicago.

Brucker, C. G., from Canon City, Colo. to 1575 Yates St., Denver, Colo.

Clark, C. M., from Pittsfield, Mass. to 317 E. 86th St., New York City.

Clareh, C. G., from Marysville to Van Wert, Ohio.

Dannaker C. A., from 159 Grand to 393 E. 12th St., Kansas City, Mo.

Dorian, J. S., from Buffalo to 6 C. St., Niagara Falls, N. Y.

Gillespie, W. J., from Philadelphia to Ambler, Pa.

Hegele, H. W., from 201 Lincoln to 153 Robey St., Chicago.

Hamilton, G. W., from St. Mary and Elizabeth Hospt. to 615 W. Broadway, Louisville, Ky.

Jefferson, E. L., from Hayden to Steamboat Springs, Colo.

Lester, E. S., from Dominion to Kadesb, Va.

Miller, W. G., from New Castle, Pa., to Angel Island, San Francisco, Cal.

McBride, M. A., from Watt to Battle, Texas.

Price, E. M., from Rushville to Astoria, Ill.

Quillin, N., from Linton to Carp, Ind.

Raymond, J. H., from Brooklyn, N. Y., to Box 1285, Pittsfield, Mass.

Sherill, E. A., from Cookes Point to Hix, Texas.

Scott, A. C., from 825 Willson Ave. to Central Ave., Cor. Van Buren St., Cleveland, Ohio.

Van Duzen, A. C., from 3010 Prairie Ave. to the Renfost, 52d and Cottage Grove Ave., Chicago.

Watkins, G. A., from Lead Hill to Carrollton, Ark.

Wallace, A. M., from 927 North Kansas Ave. to 724 Kansas Ave., Topeka Kansas.

The Journal of the American Medical Association

Vol. XXXIII

CHICAGO, ILLINOIS, AUGUST 12, 1899.

No. 7.

Original Articles.

TUBERCULOSIS OF FASCIA.*

BY JAMES E. MOORE, M.D.
MINNEAPOLIS, MINN.

Very few writers mention connective tissue as a primary seat of tuberculosis. Senn, in his "Principles of Surgery," gives the only article of importance upon this subject that I have been able to find, and that is a very brief one. We are learning, however, that the fasciae of various parts of the body are not infrequently the primary seat of disease. Every surgeon is familiar with tuberculosis of fascia secondary to gland, bone and joint disease, but in these cases the communicating sinuses can be found and the relation between the disease of the fascia and the gland, bone or joint easily established. I have the history of quite a number of cases in which there was no disease of gland, bone or joint and in which there was extensive disease of the fascia. There are two varieties. In the first variety the disease is confined to the surface of the fascia and is practically the same as a tuberculosis of the tissue secondary to a joint tuberculosis. There may be a very small area affected, or it may be quite extensive. There is a layer of tubercular granulation tissue which can be readily scraped off, leaving the protection wall of inflammatory deposit which nature always throws around a tubercular abscess. It is found most frequently in the fascia lata, in the fascia covering the popliteal space and in the deeper fascia of the thigh and leg. In the second variety the disease is not limited to the surface of the fascia, but dips down through it, attacking deeper layers of the fascia and muscular tissue. It is found most frequently in the chest-walls and in the deeper layers of the thigh.

The symptoms of fascial tuberculosis are a slowly developing swelling accompanied by little or no pain, and a local rise of temperature which can be detected by a sensitive hand. The general temperature rarely rises above 99 F. There is no change in color until the disease approaches the surface, when the skin will become red at first and later purple in spots. These purple spots finally give way and sinuses are formed. After the sinuses are formed a secondary pyogenic infection takes place, and the patient begins to suffer pain. There is a marked difference in the effect upon the general health in different cases. In some, the health may be little affected for a long time, or until sinuses form and the mixed infection takes place, after which there is liable to be a rapid decline in health. In others, mixed infection will occur before sinuses form, and the patient will have a high temperature and other symptoms of a phlegmon.

The diagnosis is to be made largely by exclusion. At times it will be impossible to make a positive diagnosis without an exploratory incision. An experienced sur-

geon will usually be able to detect a joint tuberculosis, but he may not be able to differentiate a fascial tuberculosis from one beginning in some other tissue. The evidences of a joint tuberculosis are usually easily detected, but a bone tuberculosis independent of a joint lesion may be very obscure indeed. While we should always remember that fascial tuberculosis may be primary we should not forget that in the vast majority of cases it is secondary. I have seen one case in which the patient came to the surgeon for relief from a tuberculosis of the fascia just below the crest of the ilium, which was found to be connected through a sinus thirty inches long with a primary disease of the tibia. Most careful search should always be made for foci in neighboring lymphatic glands, bones and joints before accepting a diagnosis of fascial tuberculosis.

When the patient first comes to the surgeon with open sinuses the tubercular nature of the disease is readily established by their characteristic appearance. When he comes with a mixed infection and without a sinus the surgeon will surely make a diagnosis of phlegmon as in my case (No. 6), unless he is very careful to get a full case history. Cases in which phlegmon is said to have been followed by a tubercular infection were probably originally tubercular, the pyogenic infection being secondary.

The prognosis varies with the variety, the location, and the extent of the disease. Under proper treatment that variety which is confined to the superficial fascia will usually disappear promptly, but in the other variety in which the disease dips down into the deeper parts, the prognosis is grave. When situated in the deeper layers of the thigh the prognosis is very grave indeed.

The treatment consists of thoroughly removing every trace of disease with knife, curette and scissors. In the milder variety a free incision should be made and the diseased tissue scraped away, exercising extreme care that every nook and corner is reached. The cavity should then be wiped dry or irrigated with sterile water and closed without drainage. When pyogenic infection is present, with or without sinuses, gauze drainage should be employed. Rubber drainage-tubes should be avoided in tuberculosis, because their track is almost certain to become tubercular.

In the severe or perforating variety it is necessary to be more thorough, and at times heroic, in the treatment, for half-way operating is worse than useless. Even after the most painstaking and careful operation there is a very great tendency for this variety to relapse. When relapse does occur, another operation should be performed as soon as the disease is recognized, because the tendency is to grow progressively worse, and the danger of a general tubercular infection is imminent. It has been my good fortune to save some of these patients by repeated operations. When this disease is located in the chest-wall the patient usually comes to the surgeon with sinuses, mixed infection and a diagnosis of disease of

*Presented to the Section on Surgery and Anatomy, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

the ribs. I have learned from very trying experience that the treatment of these cases must be decidedly heroic, not because of a special tendency to lung involvement, as might be inferred from the location, but because the disease often dips down between the ribs, and unless very thorough work is done it will not all be removed. Each individual sinus must be laid open from end to end, regardless of the number or size of scars to be left. It will not do to follow the sinus along under or between the pectoral muscle until it dips down between the ribs and then curette the remaining portion, but it must be laid open for inspection to the uttermost part. The rule is that after dipping down between the ribs a sinus will extend for a considerable distance between the ribs, and unless it is followed by the eye, it will not be found, and the operation will be a failure. Sometimes an abscess cavity will be found so situated that it is necessary to remove a section of the rib in order to properly clean and drain it. I have found the actual cautery very efficient when thoroughly applied after scraping. Comparatively little closing up can be done after these operations. The wounds must be firmly packed with iodoform gauze so that they are cone-shaped with the apex at the bottom. They must be watched and overhauled whenever tubercular granulations appear. Most of my relapses in these cases have occurred when the after-treatment had been carried out by the family physician, but I am bound to admit that some have recurred while under my own care.

When this disease occurs in the extremities the treatment must be carried out along the lines just suggested. It may be necessary at times to remove diseased layers of fascia and whole muscles, and when persistent relapses occur and the patient's health is failing, amputation may become our only resource.

When situated in the deeper layers of the thigh this disease is apt to become very extensive and is particularly difficult to treat successfully, and when the upper third of the thigh is involved, we are deprived of amputation as a last resource. Early and oft-repeated operations offer our only hope in these cases. An added danger in this location is that the disease may become very extensive before a diagnosis can be made, on account of its distance from the surface.

The following are brief histories of cases selected to illustrate the different phases of the disease as well as the trials, difficulties and varying success in its treatment:

CASE 1.—J. F. J., aged 48 years, a deputy-sheriff, came from Madison, Minn., in May, 1895, to see me on account of an enlargement of the thigh. The whole thigh seemed swollen and at its lower end the swelling came to an abrupt ending around the upper margin of the patella so that that bone seemed to be at the bottom of a deep depression. The swelling had been coming on slowly for nearly two years. There had been but little pain or disturbance of general health until toward the last, when his strength began to fail somewhat and he had some pain from pressure. It was quite symmetrical and gave an indistinct sense of fluctuation. There was local heat but little tenderness; temperature 99. The neighboring joints were healthy and the patient could walk with the aid of a cane.

Diagnosis.—Cold abscess probably due to tuberculosis of some portion of the shaft of femur.

I made an incision nearly the whole length of the thigh, evacuating a large quantity of the characteristic contents of the so-called tubercular abscess. No sinus leading to the bone could be found after scraping away

the lining of the abscess cavity, and a diagnosis of tuberculosis of the fascia lata was made. The cavity was thoroughly irrigated with a 1 to 2000 corrosive sublimate solution, and, with the exception of a small opening at the lower end, through which passed a small strip of iodoform gauze, the wound was closed with a continuous silk suture. There was quite free drainage at first, but it soon ceased, and on the fifth day the drain was removed, after which the patient made a speedy recovery, returning to his home on June 14, just two weeks after the operation. He has been in excellent health ever since and has had no return of his local trouble.

This case is a typical example of the simple variety of tuberculosis of fascia.

CASE 2.—On Feb. 13, 1893, I was called by Dr. Rogers to operate upon Mrs. S., who had been suffering from what was supposed to be tuberculosis of the ribs. There were sinuses over the front of the chest, below the right breast and at the outer margin of the right scapula. All the sinuses in front were laid open, curetted and packed. The right breast was turned up in a flap, the sinuses dissected out, the breast replaced and the wound partially closed. Extensive dissection was necessary to expose the whole of the disease in the back, but we were fortunate in reaching all of it, for the patient made an exceptionally speedy recovery.

I fully expected to find disease of the ribs in this case but none was found, the whole trouble being confined to the fascia.

CASE 3.—H. N., aged 24 years, came under my care on May 28, 1897, with a number of sinuses over the anterior thoracic wall, which were due to tuberculosis of the fascia. He had been operated upon once before, but without success. I laid all the sinuses open down to a point where some of them dipped down through the fascia and seemed to end in blind pockets. These pockets were curetted and packed. Prompt recovery occurred, so that he returned to his home in the country in three weeks with the wounds so nearly healed that I thought they would heal under a few dressings by the family physician. He returned on July 9 with the sinuses almost as bad as before. At this, my second operation, the deep sinuses were followed down through the fascia into the spaces between the ribs and thoroughly curetted and cauterized with the Paquelin cautery. He returned to his home August 4, with the wounds completely healed, and has suffered no relapse since.

This is a typical case of the perforating variety, and illustrates the practical point made in the paper that success can only be gained by laying every sinus open for inspection throughout its whole length.

CASE 4.—F. F., aged 48 years, a Mexican coffee-planter, came to me in January, 1896, suffering from a hydrops articulari of the right knee. The disease, although chronic, was quite mild in character and yielded promptly to treatment, which consisted of tapping, followed by irrigation with a bichlorid solution and rest in a plaster cast. Twenty months later, in September, 1897, he returned with a beginning tuberculosis of the fascia of the lower third of the left thigh. There were two sinuses and the disease seemed to be superficial. The part was laid open, freely scraped, and packed with gauze.

On Jan. 16, 1898, at St. Barnabas Hospital, I operated a second time removing all the diseased tissue I could find. On January 29 I realized that the last operation was a failure, and determined to operate again and to be as radical as possible. There were at

this time several sinuses and a mixed infection, and the patient was rapidly failing. I made an incision from just above the knee-joint to the tip of the greater trochanter. At the lower third of the thigh a strip of integument two inches wide and eight inches long, which was perforated by the sinus, was removed. A large portion of the fascia lata was removed, because it was diseased beyond all hope of recovery. The disease was found dipping down into the vastus externus muscle to such an extent that it was necessary to remove the whole of that muscle. It should be noted that this disease was in the left thigh, while his hyprois articulari had been on the right side. The left knee was healthy, but its synovial membrane was being attacked from the outside, and in my efforts to remove all the diseased tissue, I opened into the upper pouch of the knee. A piece of synovial membrane two inches long and one inch wide was removed, and the opening into the joint immediately closed with a running catgut suture, and although the patient was suffering from a mixed infection at the time of the operation, no joint symptoms followed. This enormous wound was closed, and, with the exception of a small spot at the lower end, where there was a small slough of the integument, it healed by first intention. The slough soon separated, and the wound granulated over without a return of tuberculosis. The patient left the hospital in less than three weeks, and very soon afterward returned to his Mexican home. Before he left he walked into my office with a cane, and the function of the limb was remarkably good, considering the amount of tissue removed. In May, 1899, I received a report that his leg is giving him no trouble, but that his general health is failing and that he has a cough.

CASE 5.—John M., a blacksmith, 24 years of age, came under my care in April, 1897, for an extensive tuberculosis of the fascia of the left leg and popliteal space and a cold abscess between the ribs on the right side. An extensive dissection of the popliteal space was made and every visible trace of diseased tissue removed. The abscess in the side was opened, scraped, and packed.

One month after the first operation it was evident that the disease was returning, and a second scraping was done. Although the wounds did not heal rapidly, the patient improved rapidly in general health for a time. On July 3, he began to suffer from an acute synovitis of the left knee, which was non-suppurative and recovered in about two weeks. At this time the leg and popliteal space were healthy, but there was beginning disease on the outer side of the lower third of the thigh of the same limb, which was opened and scraped. Shortly after this his limb seemed to be perfectly well, and although his side was not entirely healed, it looked healthy, and his general health was excellent. He then went to his home in the country, where he remained until April, 1898, when he returned with extensive disease of the outer side of the thigh at the site of the old disease and with his side much worse. He re-entered St. Barnabas Hospital, where I removed every trace of disease from the thigh and removed a section of one rib in order to thoroughly clean out the abscess in his side. At this time I could find no trace of bone or joint disease. The portion of rib removed was perfectly healthy. Soon after this he returned to his home in good general health, but with open sinuses in the thigh and side. I did not see him from June, 1898, until the spring of 1899, when he returned to the city with a relapse of the disease in the lower third of the thigh and in the side. The site of the original disease in the leg and popliteal space remained healthy.

At this time I advised amputation of the thigh above the disease and a very heroic operation upon the side. He entered St. Mary's Hospital, where he was under the care of my colleague, Dr. Dunn, who amputated the leg and cleaned out the side. May 26, 1899, Dr. Dunn reports to me that the thigh is entirely healed and seems to be well; that his general health is good, but that his side is still unhealed. The specimen was taken to the University laboratory, where it was thoroughly examined, and, in addition to the extensive fascia tuberculosis, a beginning tuberculosis of the knee-joint was found. The joint disease was clearly secondary to the disease of the fascia.

CASE 6.—On Dec. 24, 1897, I was called to see Wm. E., aged 20 years, who had come in from the country with an acute inflammation of the right leg. He gave a history of a traumatism, and I made a diagnosis of a phlegmon. The history given excluded osteomyelitis. He entered St. Barnabas Hospital, where I operated upon him on Christmas day. A large abscess was opened and drained in the usual manner, after which his high temperature disappeared and he improved very rapidly. He left the hospital in a few days feeling quite well, but with an open wound. Shortly after this his wound showed unmistakable evidences of tuberculosis. Upon careful inquiry I learned that one year before I saw him he had had trouble with this leg, which had kept him from work for some time, but which had recovered without an abscess forming. His leg had never been well after this, but had not kept him from work until a few days before I saw him. He re-entered the hospital, and I opened up the leg freely and found quite an extensive tuberculosis of the fascia, but no disease of bone. The diseased tissue was removed, and the wound packed with iodoform gauze. In three months the wound healed and he has had no trouble since. This was evidently a case of tuberculosis of the fascia which had been progressing slowly when a pyogenic infection occurred without the presence of a sinus. By exercising a little more care in securing the history I might have avoided an error in diagnosis.

KNEE-JOINT TUBERCULOSIS.

RESECTION FOR ITS CURE, WITH A PLEA FOR EARLIER OPERATION.*

BY A. F. JONAS, M.D.

Professor of Surgery in the Omaha Medical College; Surgeon to the Omaha (M. E.) Hospital and the Douglas County Hospital; Chief Surgeon of the Union Pacific Railroad.

OMAHA, NEB.

When we consider the anatomical changes as we find them in knee-joint tuberculosis, we at once must concede that there can be no one uniform method of treatment that will insure a favorable outcome in all cases.

We need only to recall the large and small primary bone-centers, not always occupying the same relations to the articular surfaces, progressing now slowly and again rapidly, usually forming small abscesses and at other times large ones; of the occurrence of mixed infection; of invasion of the periarticular structures, to show us that our management must be adapted to and changed from case to case. Especially is this true when we consider metastatic infections, systemic complications and resulting deformities. We would certainly be censurable if we adopted a uniform method for all cases, such as antituberculous remedies, either local or

* Presented to the Section on Surgery and Anatomy, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1896.

general; arthrotoomy or arthrectomy, resection or possible amputation. It is true we are often perplexed as to the method best adapted to the case, because it is difficult, as a rule, to make a specific anatomical diagnosis, without opening the joint. Consequently, as practical surgeons, we classify our cases from a clinical standpoint, into mild or recent and severe or chronic.

No man can, in a given case, state positively whether the primary depot is located in the bone or in the synovial membrane, and since rest, immobilization, avoidance of irritation, and removal of superincumbent weight are the indications for the management of joint tuberculosis, whenever found, we employ these so-called conservative methods in recent and mild cases. And not until we find mechanical, local and general medicamentary means of no avail do we pass on to the more radical operative measures. The advent of antiseptics with its operative furor, was the cause of frequent and early invasion of the knee-joint with suspected tuberculosis. The findings and results did not always justify the intervention; the function of the knee-joint was not restored as had been hoped, and now we have receded to a middle ground. The great praise bestowed on intra-articular injections of iodoform emulsion and other medicaments is possibly partly responsible for our present stand. We have also learned that the natural tendency for bone tuberculosis, under favorable conditions, is to recover. It is surprising how many cases do eventually recover with fairly useful joints that receive no other treatment than immobilization and the removal of the superincumbent weight.

To draw an exact line between the cases to be managed mechanically and those to be subjected to operation is not so simple, or to always decide when the time has come when purely mechanical means have accomplished what is possible and radical surgery is indicated is not easy. Reliable rules can not be laid down. Each case must be considered by itself, and general principles must be our guide.

In the presentation of this subject here I have nothing new to offer, but I rather desire to emphasize some things in connection with this question, and at the same time record my own experiences and impressions, and possibly contribute something toward the indications for resection of the knee-joint when affected by tuberculosis.

The cases of knee-joint tuberculosis coming under my care during the past ten years are 55 in number. The methods of treatment employed in these cases may be divided under the following heads:

1. Mechanical: Immobilization, with plaster-of-paris, starch bandage, and braces.
2. Intra-articular injections of iodoform emulsion, followed by compression.
3. Puncture with canula, copious irrigation with 2 per cent. carbolic, or 1000 sublimate solution, withdrawal of fluid, compression.
4. Free incision, irrigation, filling the joint with iodoform, closure by suture without drainage, immobilization.
5. Para-articular operations, opening of abscesses, excavation of bone centers.
6. Arthrectomy.
7. Resection.
8. Amputation.

Tuberculin was not employed.

Of the entire number treated, 15 passed from observation before the final outcome could be noted. The remaining 40 were kept under control until the local process had come to an end. Of this number 7 came to resection of the joint surfaces and two to amputation. This leaves 31 cases that recovered without severe operative measures, and yielded partly to medicamentary and partly to mechanical means, associated in a number of

instances with joint puncture for evacuation of joint contents followed by injection or irrigation, simple incision, compression, iguipuncture, and local applications of various kinds.

It is my purpose to limit this dissertation to the consideration of the indications for, and the method of, resection employed and a brief reference to amputation, together with a short history of the cases so managed. Case 1 will be described in detail to illustrate the method of operation; the subsequent cases will be alluded to more briefly. It is my purpose to report the other cases at another time and place.

CASE 1.—Mrs. A. O., aged 62 years, housewife, mother of several grown children, in her youth had suffered from pain, stiffness and swelling of the right knee, extending over a period of nearly two years. She recovered with a limited degree of motion. Since then she had enjoyed good health until a year previous to her admission, when her knee began to swell. It became sensitive and painful and she was unable to bear her weight on it.

When admitted to the hospital we found her appearing much older than her actual age, illy nourished and very pale. She was unable to bear her weight on her right leg.

On examination we found the knee swollen, of a glassy, almost pearly white appearance, painful on pressure, externally and internally. The joint was semiflexed; there was no fluctuation; thigh and calf were atrophied. There was no fever nor acceleration of pulse. On palpation a doughy, elastic sensation was imparted to the finger; no pitting. This condition was easily recognized to be tuberculosis. She having undergone much treatment without benefit, a resection was recommended and agreed to by the patient.

After the usual antiseptic preparation of the knee, and the application of an Esmarch rubber bandage to the middle portion of the thigh, an incision reaching the bone was made, beginning over the posterior border of the internal condyle, extending outward, transversely over the middle portion of the patella, thence to a point midway over the lower margin of the external condyle. The patella was divided transversely with a saw. On flexing the calf on the thigh by forcing the heel backward against the buttocks the entire articular surface was exposed. The joint cartilages were almost entirely destroyed, and had been replaced by a dense irregular growth of fibrous tissue, in the meshes of which was a mass of fungoid structures. A large half-dollar-sized bone cavity existed on the tibial articulation, another somewhat larger on the femoral side. The synovia had been replaced by a soft, pale, translucent, friable structure. The upper patellar fragment with its quadriceps tendon was pulled upward with a retractor, and the lower portion attached to the patellar tendon pulled downward; all restraining soft parts were clipped with a pair of scissors. A section one-third inch thick was removed from the tibia and femur, care being taken to make the plane of the sawed surfaces at a right angle with the long axis of the bones. All suspected soft structures, including the upper recess of the capsule, were cut away with a heavy pair of curved scissors. After a copious irrigation, the leg was extended and the vivified bone ends adjusted. The joint capsule was closed with catgut. The patellar fragments were adjusted and held together with a strong catgut, placed in the soft part at the outer and inner margin of the bone. The patellar periosteum was united by a running catgut suture. The integument was sutured with interrupted silk stitches. An antiseptic hygroscopic dressing

was applied and fastened with a roller, and the Esmarch tourniquet then removed. The extremity was placed on a Volkmann posterior tin split, the foot being kept elevated twenty-four hours. At the end of a week the dressing and sutures were removed. A small iodoform gauze pad was placed over the line of union, and the leg and thigh were placed in plaster of paris, which was worn for six weeks. The patient was allowed to sit up as soon as the plaster cast was hard. Weight was borne on the extremity during the seventh week. Bony union became firm, the final result being all that could be desired.

CASE 2.—Miss D. A., aged 20 years, had always enjoyed good health until the age of 16 years, when she fell and bruised her right knee, which became swollen and had remained so. She had intervals of apparent improvement followed by relapses, always leaving the periarticular tissues more swollen than before. During the last eight months the pain has been continuous. The swelling presented a doughy feeling to the touch; fluctuation could be made out beneath and to each side of the patella. The overlying skin was pale. She had undergone almost continuous treatment, but in spite of immobilization, protection, removal of superincumbent weight, intra-articular injections of iodoform emulsion and ignipuncture, she became continually worse. Operative intervention was recommended and agreed to.

Under chloroform anesthesia and a through transverse incision the joint surfaces were exposed. The articular cartilage of both tibia and femur was perforated in many places; it was detached along the outer portion of the tibial articulation. The synovia was thickened, soft and translucent. The joint cavity contained a fluid in which caseous material was suspected.

A section of bone including the articular surfaces was removed from the tibia and femur, and all suspicious soft parts clipped away. The leg was extended, the wound closed, dressed, and at once placed in a plaster-of-paris cast, which was removed in six weeks. Wound healed *per primam*. Another cast was applied, and the patient allowed to walk on it, aided by crutches. Recovery was complete.

CASE 3.—Mrs. C. E., aged 40 years, married, housewife, has always been well except for a stiffness of the right knee, which she has had since childhood, and which began after an injury, followed by swelling. She had had several attacks of pain, lasting from two weeks to six months, her present pain dating back one year. The condition of the knee was found to be semiflexion, swelling without discoloration, pain on pressure, inability to bear weight. There was indistinct fluctuation and much atrophy of calf and thigh. Immediate operation was recommended.

A transverse incision exposed a totally destroyed joint. The cartilage had almost entirely disappeared and was replaced by a thick fibrous mass, containing in it several hazel-nut-sized abscesses. The ends of the tibia and femur were removed, and suspicious soft parts clipped away. Bone ends were adjusted and the wound closed. The limb was dressed and put in a plaster-of-paris cast, reaching from metatarsophalangeal joints to the groin. The cast was removed in six weeks, and union was found to be complete. She was able to walk in eight weeks, and has remained well since.

CASE 4.—Miss J., aged 28 years, says she has suffered from a swelled, painful and stiff knee nearly twelve years. She has been treated with braces, plaster casts and local applications, and as a result has experienced freedom from pain at various times, so that she could

attend to her household duties for periods varying from five months to nearly two years. The writer has seen her at various times during the past four years and always recommended operative procedure until the present time.

Under chloroform anesthesia the articular surfaces were exposed by a transverse incision. The cartilage was found to be entirely destroyed and partly replaced by fibrous structures and granulation tissue, and the joint cavity was filled with a moderate amount of creamy odorless fluid. The joint surfaces were excised, and the affected soft structures removed. One bone cavity in the tibia extended below the line of section; it was scooped out with a Volkmann sharp spoon. After irrigation, the leg was extended, dressed and placed on a Volkmann posterior tin splint. After one week the extremity was placed in a plaster-of-paris cast for six weeks. On removal of the cast, bony union was not firm. A moulded leather splint, reaching from a point midway over the thigh to the middle part of the calf was applied, with advice that the patient bear weight on the leg. Union gradually became firm.

CASE 5.—Wm. B., aged 35 years, single, a farmer, says he injured his knee about ten years ago, resulting in swelling and pain, which never entirely left him. He has suffered many exacerbations, entirely incapacitating him for labor for varying periods.

At present his knee is swollen. All normal lines are obliterated, large bluish veins passing over the surface. There is a doughy sensation on palpation. The knee is sensitive on pressure. A fistula exists on the outer side of the upper end of the tibia, discharging on pressure a creamy odorless fluid. Demuded bone can be felt with a probe. There is no mobility of the joint. The condition was recognized to be tuberculosis. He suffered from general debility.

Under chloroform anesthesia the joint was opened by a transverse incision. Both articular surfaces were destroyed and replaced by a mass of more or less dense connective tissue, which was filled with a creamy fluid. On the tibial surface existed a cavity nearly one-half inch deep and in circumference as large as a twenty-five-cent piece. The patella was not involved. Two bone sections, one-third inch in thickness, one of the tibial and the other from the femoral end, were removed. It was found that the cavity in the tibia was not entirely included in the bone section, so the remainder was scooped away with a Volkmann spoon, the suspicious soft parts being clipped away. The wound was closed and dressed in the usual way, on a Volkmann splint one week, in plaster of paris six weeks. Union seemed complete. The patient went home on crutches. He returned in one year, with several fistulae about the knee. The left wrist and dorsum of the hand was swollen and fluctuated. Both lungs were involved. The wrist was incised and drained, which gave relief from pain. Nothing was done with the knee. He was sent home, where he died six months later.

CASE 6.—Mrs. K., aged 28 years, housewife, has one healthy child 3 years of age. She has always enjoyed fair health, except for painful swelling of the left knee, which began some eight years ago. The pain has never been acute, but has been more or less constant, with occasional exacerbations and remissions, but never entirely ceasing. There is much sensitiveness when the weight of the body is borne upon it. The swelling, which is devoid of redness, has very slowly but gradually increased; impairment of articular mobility has been progressive. She can not recall ever having had fever.

On admission we find a rather pale blonde of medium height, fairly well nourished, walking by the aid of a crutch. We find an enlargement of the left knee; no discoloration of the skin. The swelling is of a doughy consistency and sensitive on pressure; no fluctuation can be made out. This swelling extends upward into the upper recess of the synovial sac and downward as low as the insertion of the patellar tendon. The joint mobility is extremely limited and very painful. The patella seems to ride on a doughy springy substance. There are no fistulae. She has not menstruated for nearly three months. Pregnancy is suspected. Otherwise she enjoys good health. We conclude that we have to deal with a tubercular arthritis.

She has been under almost constant treatment since the beginning of her affection. The methods of treatment have been of every variety, including prolonged extension and fixation, counterirritation, etc. We concluded to employ intra-articular injections of iodoform and the internal administration of creosote. This method was faithfully carried out for nearly three months, with no improvement, but rather a change for the worse. Resection was then determined upon, which was accordingly done on January 7, through a transverse incision. We found the entire joint cartilage replaced by a vascular structure composed chiefly of granulation and connective fibrous tissue, a network of capillary blood-vessels, a condition spoken of by Hunter as pannus and a hyperplastic synovitis. Many miliary nodules could be seen. In several portions were noticed perforations filled with caseous substance, leading into the subchondral, cancellated bone structure, which were deepest on the tibial articular surface—the probable origin. The crucial ligament was softened and easily broken down; the synovial sac, which was greatly thickened, was lined with, and largely composed of, a greyish, fragile, fungus structure.

The articular surfaces, after separation of the softened crucial ligament, to the thickness of one-third of an inch were removed with a saw. It was found that the osseous defect of the tibia was not entirely included in the excised bone. The remaining bone cavity, the probable primary depot, was thoroughly cleaned with a sharp spoon. The entire synovial sac, together with all suspicious tissue was removed with a strong pair of scissors. After a copious 1 to 1000 sublimate irrigation, the exposed bone ends were adjusted, the wound was closed in the usual way. An antiseptic hygroscopic dressing was securely applied. The whole was placed and fastened on a Völkann tin splint, sufficiently long to reach the gluteal fold.

The progress was absolutely afebrile. The first dressing was removed in three weeks, when all sutures were taken out and the leg enveloped in a plaster-of-paris dressing, which remained for nearly two months, and, on its removal, bony union was complete. The patient has been entirely free from pain since and has given birth to a healthy child, passing through a perfectly normal puerperium.

Portions of the excised synovial sac, which microscopically presented a pale, anemic, soft, nodular, fragile appearance, exhibited microscopically clusters of miliary tubercles, in section of which were easily recognized small round, epithelial and giant cells, containing tubercle bacilli. The contents of the cavity in the tibial head was made the object of the most careful study, and it was not difficult to find tubercles with the characteristic microbes located on and in the walls of the cavity. Neither tubercles nor bacilli could be found

in the caseous mass itself, which was the result of retrograde changes, due to a local anemia and the products of tubercle bacilli, the mass consisting of a coagulation necrosis and caseation, usually containing no formed elements.

CASE 7.—E. D., aged 25 years, a clerk, single, has suffered from a swollen and painful knee for seven years. He has been under orthopedic treatment nearly the entire period, and has had periods of freedom from pain for varying periods during this time. Joint immobility has existed from the commencement. We find a swelling involving the entire joint, with fluctuation in its inner aspect. The condition is one of typical tuberculous. Exploratory incision was recommended, to be followed by resection or amputation if necessary.

Under chloroform anesthesia an incision beginning at the outer margin of the patella, extending backward almost to the hamstring, freely admits the index finger, which reveals a panarthritis, with complete destruction of the articular cartilage. A typical resection is made, the final outcome of which is painless. He has a useful but stiff extremity.

Excision of the knee-joint is no longer an experiment. This operation has found a permanent place in surgical procedure, and while the method of procedure and detail may still be a matter of discussion, the object to be attained is a settled one.

Surgeons still take issue as to the time when operation is indicated, but all agree that when a reasonable amount of mechanical and local treatment has not stayed the progress of the disease nor improved the condition, operative intervention must be resorted to. All agree that a stiff extremity is preferable to the best artificial limb, and amputation becomes necessary only when the pathologic factors have either transcended certain bounds, or secondary infection threatens, or when employed as a life-saving measure.

Early recognition and early treatment in the critical stage of joint tuberculosis can not be too greatly emphasized. Rheumatism, sprain and growing pains too often mislead to a false security. The awakening to the true state of affairs occurs only when the mischief has become irreparable. Every painful knee-joint must be regarded with serious consideration. It is better to err in the direction of ultimately finding a painful knee-joint a simple traumatism, than to mistake a tuberculous knee for a sprain or contusion.

When shall we resect the knee-joint for chronic inflammatory disease? Here we differ, sometimes widely, owing it seems, largely as the bulk of our cases come to us in private or hospital practice. Those who see their cases early and appreciate their true nature, will see a large percentage of them recover by non-operative means. While the hospital surgeon has to deal chiefly with the chronic, badly managed and neglected cases, he naturally finds the bulk of his subjects suited only to radical operative intervention.

When considering our cases we note that they were all late resections. I am convinced they were unnecessarily late. Had radical procedures been adopted earlier, we could in all cases have saved much suffering and much time, which is so valuable to the class of individuals who comprise the larger number of these cases. At least one life, Case 5, might have been saved. Does an individual gain anything who recovers with an ankylosed joint after two or more years' mechanical treatment? Would it not be advisable in all cases where we are convinced that the ultimate outcome will be ankylosis, to open the joint early, excise all diseased structures,

and save from one to two years of pain, at the same time restoring the individual to usefulness? The outcome of chronic knee tuberculosis is a fixed joint and more or less deformity. Resection produces a stiff joint minus the distress, incapacity, loss of time, possible metastatic infection and deformity, and in some cases prevents loss of life. I believe it to be correct practice to resort to early exploratory incision, provided improvement has not commenced in three, or at most four, months. Explore the joint with the finger, and in certain cases expose the articular surfaces to ocular inspection, as we have done repeatedly in traumatic infected cases. If the joint cavity is free from tubercular infection no harm can be done. If the primary focus can be found it can easily be removed. If the joint surfaces are destroyed, time is gained by their early removal.

Our plan has been, if after two or three months of mechanical management no improvement has been noted, or if after even a month, no progress has been made, to explore the joint by puncture or incision. If the exploring finger found limited lesions, irrigation was done, if small bone lesions could be detected, curette. If the articular surface was involved, enlarge the incision and excise. If the cases were old and had undergone more or less treatment, resection was recommended.

The seven cases of resection in our series do not comprise the entire number in whom this operation was indicated. In a number of those that passed from observation, radical means were insisted on, but were refused by patients and friends. It will be noted that our resections were all in adults.

As we pass to the consideration of the method of operative procedure in our cases, the one which served us seemed the simplest possible. The transverse incision of Volkmann was employed in all. Without entering into the relative merits of the incisions employed by Fenwick, Olliver, Heuter and others, there certainly is none that more quickly, simply and completely exposes the entire joint surfaces than the transverse. The facility with which the affected bone and soft structures can be removed can hardly be improved on. The excision of the diseased tissues was always carried out with extreme care, cutting well into healthy structure. The bone section was always made parallel with the articular surfaces. The V-shaped section of Phelps and mortises by others were never attempted. There never was difficulty of maintaining the sawed ends of the bones in apposition. The method of closing the joint capsule and uniting the patella as described in our first case was adhered to in all. Bone pegs, nails or wires to hold the bone in apposition were never used, experience having proved that they are not only unnecessary, but useless and sometimes harmful. They prolong the operation. They are fastened in cancellous structure which can not hold firmly if strain should be put on them, and in most cases must be removed by secondary operation.

Bilateral tubular drainage was used in several cases, but as we gained more confidence in our aseptic procedure, it was omitted. When much oozing after more than ordinarily extensive operation was anticipated, the extremity was placed for a week on a Volkmann posterior splint, and then in a plaster-of-paris cast reaching from the metacarpophalangeal joint to the groin. I am convinced that in the majority of instances the plaster cast can be applied immediately.

Two of our cases underwent amputation because the tubercular process had invaded the shaft of the long bones, and we were not at all sure that the tubercular process could be entirely removed.

Antituberculous medicaments were not given internally after these radical operations. Abundant food, good air and sunshine will restore these individuals to vigor in less time than any pharmaceutical preparation of which I have knowledge.

DISCUSSION ON PAPERS BY DRs. MOORE AND JONAS.

DR. DR. FOREST WILLARD, Philadelphia.—Dr. Moore has certainly indicated the proper method of procedure in cases of tuberculosis of fascia, where we are satisfied that the bone is not diseased, or where, upon laying open the sinus, there is no implication of bone. The free laying open of the sinus, no matter if it is twelve inches in length, and the excision of all tubercular tissue is the only form of removal that is likely to give us quick and positive results. We know of no caustic that is to be compared with the knife and scissors; they only are the proper tissue destroyers in tuberculosis. With the thorough excision of all diseased tissue at the time of operation, and immediate closure, we can hope for excellent results. In regard to knee-joint tuberculosis, it is difficult to lay down any positive rules for operation, but I think that the most certain indication that we have, or the rule we must apply most frequently, is in regard to the age of the patient. The method of procedure that should be carried out in young children—that is, whether we shall adopt radical or conservative measures—will depend upon a variety of conditions. By conservatism I do not mean the conservatism of doing nothing or little; I include in conservatism everything even to amputation. As a rule excision in children should be practiced early; remove the tubercle foci, hard and soft, and you will give the individual not only a good limb but one of considerable length; that is the important point. So often when children's knees are excised, we have shortening of three, four, or five inches, giving a useless limb; but if we can do two or three operations of excision, avoiding the epiphyseal lines, get rid of all the tubercle foci, we have benefited him exceedingly. Excision I do not like in children: excision is far better. With adults, excision and amputation come in most largely; excision is ordinarily preferable, but the line must be drawn between children and adults.

In regard to injections of iodiform I desire to go on record most absolutely and positively as among those who have from experience become dissatisfied with its use. It may be that I am less cleanly than others and yet I yield to no man in my belief in the practice of absolute cleanliness, but I must say that my experience in injections of iodiform is that it is worse than worthless, and that it often increases suppuration. Yet I believe that I have been absolutely cleanly in these injections.

In regard to extreme conservatism, I do not believe in it; I believe that we should be conservative in every case, but that necessary operation is often conservatism.

In knee tuberculosis, early diagnosis is of the utmost importance: the time to treat knee tuberculosis is the first two weeks. Let us get rid of the false idea that rheumatism is common knee-joint disease in the hip in children. Let us consider and treat these cases as tubercular ones, and not go on for one or six months with the death-dealing plan of saying that it is "only rheumatism." I believe that tuberculosis can be arrested, if taken early.

DR. H. M. SHERMAN, San Francisco.—Dr. Moore's paper illustrates what has been experienced by all of us, that we should open a tubercular abscess and find that it is not connected with a bone, but in the soft tissues. Some of us have at times treated a joint for tuberculosis where the lesion was tuberculosis in the muscles near the joint. The question is one which is annoying, for one is liable to keep a child on an apparatus for a considerable period of time which would be unnecessary. I have done this sometimes and have seen it done by others. The differentiation between a soft-tissue tuberculosis and one originating in the bone is an exceedingly difficult matter when the abscess is close to the joint. I do not know of any way of definitely doing this short of the use of the X-ray. So far as I understand that at present, a great deal will depend upon the way the showings of the X-ray are interpreted. If, in a given case, the abscess is found to be not connected with the bone, it would be proper and wise to follow out the plan of Dr. Moore. If it is connected with the bone, then that is a complication of the bone lesion and must be considered to be one of the symptoms. From its title, that it would take up the diagnosis of the focus from its title, that it would take up the diagnosis of the focus of tuberculosis at the knee-joint before it had gotten on to infection of the joint itself. In that lies the best chance and practice for treatment of knee-joint tuberculosis—the early

recognition of the location of foci and their removal before the joint is attacked. Dr. Jonas is right in saying that we frequently do not know whether the lesion is primarily in the synovial membrane or bone, but as it is in the bone in the vast preponderance of cases, we must assume that it is there until the contrary is proved. One's guide is one's knowledge of where the foci are usually found in the bone, and the testimony of the X-rays to definitely locate them will help one in saving the joint. These cases, locally do not need a drug. Iodoform is, so far as my experience goes, an inert drug. One question as to the management of focal tuberculosis is how the growth of the limb be affected afterward. All of the cases that I have operated on have had certain injury done to the epiphyseal cartilage and following that there has been partial inhibition of the growth of the limb; however, the joint was an active, useful joint, and the limb was perfectly useful, with the help of a little wedge underneath the sole. One more thing regarding excisions. I do not think it wise to begin an excision of the knee unless the surgeon has full permission to amputate it, in the course of the operation, it proved necessary to do so.

Dr. J. E. MOORE, Minneapolis, Minn.—I have nothing further to say for my own paper. In discussing Dr. Jonas' paper, in answer to his question: Would it not be well to operate on these cases early? I would say, "yes," with the same reservation that Dr. Willard put—provided the patient is old enough. Excision of the knee-joint in children is scarcely justifiable under any condition. If the child were my own, and there was a useless limb after erosion or mechanical treatment, I think I would prefer to have it amputated, because these joints always become deformed in later years and are an imbrance, not as good as a good artificial limb. If the patient is over 18 to 20—yes, excise early, where your conservative measures are failures—when the patient is growing worse rather than better. I want to go on record as to the uselessness of iodoform in the local treatment of tuberculosis. I have some results in other directions, but not in tuberculosis. There was a time when I used the Esmarch. Since I have ceased using it I have less oozing of blood. I have for the last three or four years employed the method first suggested by Ferguson—making a slight ridge transversely in the femur and a corresponding gutter transversely in the tibia. Thus, I am sure that my toes will not rotate too far out or in. You can do this without shortening the limb to any degree. Just one word about conservatism: I wish to insist that conservatism does not consist in simply refusing to use the knife. The best conservative agent I know is the knife, in good, skilled, judicious hands.

Dr. A. F. JONAS, Omaha, Neb.—One is always very much at a disadvantage when reading a paper in the abstract.

The great difficulty in this subject is early diagnosis. They come on with a sprain or with rheumatism for years before the patient gets into the hands of the surgeon.

By conservatism I mean anything that conserves the function of the joint for the individual—whether it is necessary for that purpose to use a knife, sharp spoon or any other instrument; that is conservatism. To let a thing alone is criminal. To do something for the purpose of restoring the function I believe is conservatism. For that reason I have recommended that we shall make early operations. If we find after mechanical treatment that we have made no advance in treatment, make an incision in the edge of the patella, exposing the healthy joint. If you find nothing, close it up again and you have done no harm; if you have proceeded in an aseptic manner you have restored the joint to the best possible condition. I wish to place myself on record with the other two speakers—that I have never obtained one good result from iodoform emulsion. I have not made anybody worse, but I do not recall a case made better by it. I have had better results with carbolic or sublimate solution.

THE LONGITUDINAL SILVER-WIRE SUTURE.

"EN ETAGE" IN THE CLOSURE OF WOUNDS.*

BY M. L. HARRIS, M.D.

PROFESSOR OF SURGERY, CHICAGO POLICLINIC,
CHICAGO.

Excluding the viscera, etc., the most important incisions to consider: 1, accurate coaptation of like structures; 2, the suture material; 3, the method of applying the suture. All surgeons agree as to the end to be accomplished, differences existing only as to the means.

*Presented to the Section on Surgery and Anatomy, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1909.

Excluding the viscera, etc., the most important incision with which we have to deal is that of anterior median celiotomy, and while our remarks are pertinent to incisions generally, they find special application in the closure of this one.

That like structures should be coaptated in order to restore as nearly as possible the normal relation of the parts is so universally recognized that no argument is necessary to support the statement. The coaptated parts should be in intimate contact throughout in order that union may take place with the production of the least possible amount of cicatricial tissue, as the lesser the amount of new connective tissue formed between the divided edges, the more intimate and firmer the union.

The selection of the suture material can not rest simply upon individual preference, but merit must decide. The points which specially enter into competition are: 1, ease and certainty of sterilization; 2, imbibition capacity or extent to which fluids are permitted or favored to pass along the suture. Other points which may be raised for or against the various suture materials are of minor importance in comparison with the two just mentioned. Only the more commonly used materials will be considered—catgut, silk, silkworm gut and wire—as these four represent each a distinct class.

Concerning the first point, sterilization, there can be no question as to the certainty of being able to sterilize all these materials except, perhaps, the first. Wire is certainly the easiest to sterilize, with silkworm gut next. Both these materials simply requiring boiling a few minutes in water, and may be easily prepared with the instruments each time as needed. Silk, to be absolutely reliable, requires fractional boiling, hence, must be prepared beforehand and preserved ready for use. With catgut the question is not so simple. While I think catgut can certainly be sterilized by any one of several methods, still the methods are time-consuming, and considerable experience is necessary with some of them in order to insure perfect results.

The second point, imbibition capacity or the passage of fluids through or along the suture, is of very great importance, for to this property is due most of the secondary infections, stitch-hole abscesses, etc. It is well known that it is practically impossible to render the skin and its glandular appendages germ free. Lauenstein states that even after repeated or, better still, several daily disinfections by the most approved methods, the skin was found germ free only 33 times in 58 cases. A suture, then, which passes through a germ-containing skin, by imbibition or capillary attraction, may permit germs to pass with the fluids from the superficial to the deeper portions of the suture tract, where, the tissues being less immune than the surface epithelium, the germs develop and local infections take place.

The facility with which the different suture materials here considered permit or favor this infection of the deeper tissue has been very thoroughly studied by Troller². Briefly, Troller proceeded in the following manner: Operation wounds, produced under the strictest technic, were sutured in the usual manner with the different materials here under consideration. Control experiments showed the suture materials were sterile when used. After forty-eight hours the sutures were removed and divided into two portions, the extracutaneous and the subcutaneous portions, or that part which lay on the skin was separated from that part which was buried in the tissue. These separate parts were then ex-

¹ Arch. f. Klin., B. III, H. 1.

² Beitr. zur Klin. Chir., B. xxii, H. 44.

amined bacteriologically, with the following results: The subcutaneous loop was found germ free in 82.4 per cent. of the wire, in 60 per cent. of the silkworm, in 30 per cent. of the silk, and in 25 per cent. of the catgut sutures. The extracutaneous loop was found germ free in 53 per cent. of the wire, in 7 per cent. of the silk, and only in 4 per cent. of the catgut sutures.

The germs found on the subcutaneous loops were always of the same kinds and varieties found on the skin and the extracutaneous loops, showing conclusively that the germs had gained the deeper parts of the tract by being transmitted along the suture material by imbibition or capillary attraction. When judged by the two points mentioned above, namely, facility of sterilization and imbibition capacity, the materials stand in point of excellence in the following order: wire, silkworm gut, silk, catgut.

It will thus be seen that wire, either aluminum, bronze or silver, heads the list of suture materials. The next point for consideration is the method of application.

It is not the intention to discuss the various methods of suturing commonly employed, but to direct your attention to the technic and the advantages offered by the longitudinal silver-wire suture. It is called the longitudinal suture because it parallels the wound. The idea of a longitudinal suture is not new, as it dates back to Chassaignac, who in 1852 employed a silk suture, extending lengthwise, and lying beneath the surface, which he called "suture celluluse" or *sous-cutanee*. The subcutaneous continuous catgut suture has long been used by many, and Daurand, in 1896, in a thesis, again elaborated the many advantages of the "suture intradermique." The use of silver wire for the subcutaneous suture had its origin in Johns Hopkins Hospital.

I have extended the use of the longitudinal suture so as to include, not only the cutaneous edges but the deep layers as well, making a longitudinal suture "en etage." The suture will be described in connection with an anterior median celiotomy. Three layers are employed: peritoneal; fascial or sheath of rectus; subcuticular.

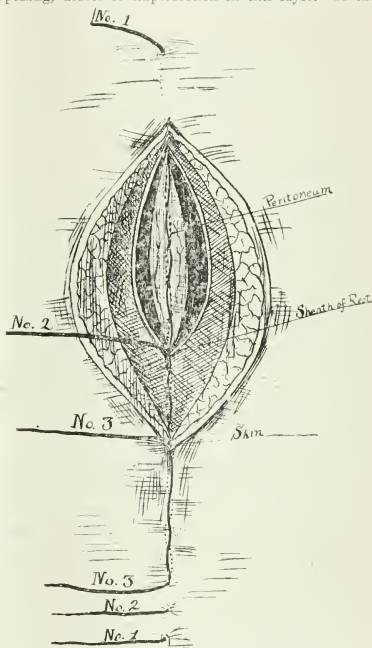
For the peritoneal layer, silver wire No. 24 to 22 is threaded directly to a smooth, round, non-cutting, curved needle. The needle is made to enter the skin in the midline, one to three centimeters from the angle of the incision, and penetrate obliquely all the tissues down to the peritoneum, where it should appear at the angle of the peritoneal incision. The obliquity of the transfixion prevents too sharp an angle in the suture at the peritoneum.

The peritoneum is now taken up with the needle, parallel with and quite near to its edge, first on one side and then on the other, constantly in an advancing manner until the entire length of the incision has been traversed. The grasp of the needle should not be more than a centimeter in length, and the point of entrance of one grasp should be but very slightly in advance of the point of exit of the last grasp. The suture is then brought obliquely to the surface about the same distance from the cutaneous angle at its point of entrance. The second suture, wire No. 22 to 20, enters in the midline, but a little nearer the angle of the incision. It penetrates as far as the sheath of the rectus muscle, where the edges of this fascia are taken up longitudinally in exactly the same manner as has just been described for the peritoneum.

No sutures are applied to the recti muscles. At no point in the midline do the recti muscles lie in contact with each other, hence, in closing a median incision it is unnecessary to suture together the recti muscles

with the expectation of obtaining union between them. The dense, thick, conjoined fascia of the linea alba in the upper part of the abdomen of the firm anterior layer of the muscle sheath below Douglas' fold is the all-important layer to be sutured. This is the layer in which the most perfect apposition, edge to edge, should be secured.

Ventral hernia never occurs with this layer covering the sac, but the sac invariably protrudes through an opening, defect or imperfection in this layer. If this



Showing the three layers of wire sutures in partially closed medial incision. Suture No. 1, peritoneal suture; No. 2, suture of fascia; No. 3, subcuticular suture.

layer be perfectly restored, if the edges be accurately coaptated and the union secured throughout between them, with the production of the least possible amount of cicatricial tissue, ventral hernia will never occur, regardless of the relations of the recti muscles.

The great trouble with all transverse or transfixion sutures is that the edges of this layer are not accurately coaptated, but gaping takes place between the stitches, thus materially interfering with perfect, close, definitive union. If the finger be passed along the line after the usual transverse suture, the tip may frequently be felt to engage in the small defects caused by the gaping between the stitches and at such places the occurrence of a ventral hernia may often be predicted with reasonable certainty. By the use of the longitudinal silver-wire suture, as here described, the edges of this fascia are

accurately coapted throughout in the most perfect manner, and the finger passed along the line of incision meets with a firmness and solidity of union not found in any other method of suturing.

The third suture is the usual subcutaneous or subcuticular suture. The wire enters and leaves at the angles of the incision running along in the corium, in and out, in the same manner as has been described for the other two. It does not appear on the skin at any point except where it enters and leaves. After the wires are introduced, they are drawn back and forth until they are perfectly straight and move easily through the tissues. The wound may now be dressed in any manner one chooses. The method I use, and think the neatest and best, is to seal the line of union with silver foil after Halstead. Place on this a compress of a few layers of plain sterile gauze over which are folded the ends of the wires, which should be left long. On these is placed another similar compress followed by the usual dressing of plain sterile gauze and cotton.

The wires are usually allowed to remain from ten days to two weeks. To remove the wires, they should be drawn back and forth gently until loosened in the tissue then one at a time cut close to the skin and withdrawn. They are easily removed, with scarcely any pain. Care should be taken not to break the wires by pulling suddenly before loosening them.

While the suture has been described in connection with the closure of median celiotomy incisions, it finds many other valuable applications. In closing the muscle-splitting incision in interval operations for appendicitis, one wire parallels the fibers of the internal oblique and transversalis, entering and leaving the skin some distance from the cutaneous incision, and crossing it almost at right angles. Another wire parallels the fibers of the external oblique, and a third forms the subcuticular suture.

In the radical operation for hernia after the general plan of Bassini, I think it a most valuable suture. The first wire unites the conjoined tendon with the inner edge of Poupart's ligament, closing firmly this layer, leaving but sufficient opening at the internal ring to permit the safe exit of the cord. The cord is then laid on this layer and a second wire paralleling the external oblique securely closes this layer with the exception of a small external ring. The usual subcuticular wire completes the operation.

I can not speak too highly of the longitudinal silver-wire suture "*en etage*" in the radical operation for hernia, as the results have been so very gratifying. There are no absorbable sutures to soften or non-absorbable sutures to come out at some future time. Other uses of this method of suturing will readily suggest themselves.

In addition to the reasons already given for selecting silver wire as the suture material, it possesses another distinct advantage over all other materials when applied longitudinally, in its rigidity. When the wire is drawn straight the edges of the wound are kept in perfect coaptation, the rigidity of the wire preventing the slightest gaping or bulging. The application of lead plates, shot, buttons, rolls of gauze, etc., to the wire to keep it tense are entirely unnecessary.

The technic of application of the suture is very simple; the following points, however, are of sufficient importance to merit mention: Keep the wire perfectly smooth, and free from kinks; do not draw the wire all the way through at each stitch, but have only sufficient lead to permit the use of the needle; draw the suture straight, and see that it can be moved easily through the tissues.

It is not advisable to have a single suture through firm, deep tissues longer than 15 cm., owing to the possibility of breaking it when attempting to withdraw it. A suture may be brought to the surface at any point and another one begun without in the least weakening the line or modifying the principle.

The advantages of the longitudinal silver-wire suture may be briefly summarized as follows:

The material can always be sterilized with ease and certainty.

It is non-hygroscopic, consequently does not convey infection to the deeper tissues thus producing stitch-hole abscesses, etc.

The edges of the wound throughout its various layers are more perfectly coapted than by any other method of suturing.

The accurate coaptation leads to an intimate union with the production of the least possible amount of new-formed connective tissue, and hence the greatest possible strength of union.

The very narrow linear cicatrix is a great improvement in a cosmetic sense, as there is an absence of the numerous lateral stitch-holes, the scars of which are often more disfiguring than that of the cut itself.

The suture will withstand any desirable amount of traction without yielding.

It can be easily and quickly applied.

DISCUSSION.

DR. J. P. LORD, Omaha, Neb.—I am greatly impressed with the value of this method, as exemplified in this paper. Following the work of those who early introduced the use of the buried silver-wire suture, I had some experience in the use of silver wire, and came to the conclusion which has been arrived at by those who worked with it, and that is that it is of no value as a permanent support. I discarded the deep silver-wire suture. I have used wire, wormgut and catgut for my superficial skin wound closures. I have used all of them; and I have buried them, to suit my fancy in individual cases. I, too, have recognized the relative merits of the different materials, and have acknowledged the superiority of wire; yet with the thorough methods of preparation which we have for silkworm gut, I have confined myself mostly to the silkworm gut for subcutaneous sutures. With this experience—which has been considerable, having closed most of my hernia incisions, most of my face-wound incisions with subcutaneous stitches—I have had opportunity to judge of the value of the subcutaneous method. Now, as the doctor has demonstrated the utility of the temporary silver-wire suture in the deep structures as well as in the skin-wound sutures, I am particularly impressed with the value of his method, so much so, that I am going to investigate its value. I believe that this is founded on scientific data given you in the percentages of the risk in the use of these different materials, and following out his technic, as given us, I believe much is to be gained in the use of this method.

DR. J. B. EGGLESON, Seattle, Wash.—Is the silver wire as easily removed as the silkworm gut?

DR. W. J. MEANS, Columbus, Ohio—I have been very much interested in the method of closing incised wounds by subcutaneous removable sutures, as outlined by the author in this paper. I have been using the same method in part for several years. It has been my experience that silkworm gut is much easier placed than silver wire, but harder to remove. I have had the wire break in removing it in a few cases. The suture is much harder to remove from the integument than from the fascia or peritoneum.

During the past two years I have been using galvanized, annealed steel wire. It was suggested by Dr. Baldwin of Columbus, and I believe, he has been using it almost exclusively. This wire is much stronger than silver wire, fully as pliable, and is tolerated by the tissues just as kindly. I have never had a suture of this material break in removing it. It is much cheaper than silver wire. I suggest a trial of this wire to those who use the subcutaneous method of closing incisions. It can be had at any good hardware store.

DR. M. L. HARRIS, Chicago—The silver wire is as easily removed as silkworm gut. The influence of silver on wounds has been found to be beneficial. The silver wire probably stands at the head of wire materials in the percentage of non-

infection of the deep parts. This is the particular advantage of still adhering to silver wire: There is less infection of the deep tissues following the use of silver than of any other wire, except perhaps aluminum bronze, which has also been found to have a beneficial effect when in contact with living tissues. These wires are superior to any of the iron wires which have been used.

FEMORAL ARTERY AND VEIN.

THEIR DESTRUCTION WITHOUT LOSS OF LEG.*

BY B. MERRILL RICKETTS, Ph.B., M.D.
CINCINNATI, OHIO.

The experiments of Niebergall upon the circulatory system have shown that the upper and lower extremities have many times been needlessly sacrificed. It was shown by him that the resistance of the valves of the veins could be overcome by moderate arterial pressure, thus making it unnecessary to ligate the artery in cases of venous occlusion. Branne taught that the presence of these valves precluded the possibility of collateral circulation, and that ligation of the vein alone would render gangrene inevitable.

The modern methods of dealing with blood-vessels have proved beyond peradventure that many teachings concerning them are fallacious, but, like the progress in all other departments of science, many erratic steps must be taken before the goal is reached.

While the anastomosis of arteries and veins has been accomplished, it has not been as satisfactory as hoped for. It has been shown that the lumen of an ass's abdominal aorta may be sufficiently restored by end-to-end anastomosis to permit of constant and sufficient circulation. This demonstration was the basis upon which all subsequent work in this direction has been done.

So far as the work with the blood-vessels of the human body is concerned, nothing has been presented which is at all satisfactory. The experiments of both end-to-end and lateral anastomosis in the smaller animals and the actual work with the human blood-vessels have shown that complete occlusion sooner or later takes place, thus showing that the results are no better than the immediate occlusion by ligatures. It is safe to say that sepsis has been more responsible for gangrene—especially in the moist form—than simple occlusion.

The older operators of this country found gangrene resulting from ligation of the subclavian artery—outer third—in from 8 to 12 per cent; external iliac artery 12 to 20 per cent; femoral artery 10 to 15 per cent. The mortality of ligation of the femoral artery is shown by the following reports:

	Operations.	Deaths.
Norris' tables	204	50
Crisp's tables	122	15
Grey's Hospital, 1862 to 1876	24	4
Syme	23	0
Pennsylvania Hospital, 1868 to 1876	11	2
G. H. Potter	5	0
McNamara	8	1
Gross	2	1
Total	399	*70
*23 per cent.		

Ligation in these cases was, no doubt, for various causes; and it is fair to presume that the leg was preserved in all in which death did not occur. The cause of death in four of Norris' fifty deaths is not stated. Twenty-three died from gangrene, eight from hemorrhage, five from phlebitis, one from sloughing of the sac, three from tetanus, and the rest from "fever, hectic, pyemia, etc."

These compilations, like many others, are very unsatisfactory. They do not show at what point upon the artery the ligature was applied, or the cause of its application. They do, however, indicate that the percentage of cases resulting in gangrene or death is far greater than with the modern method of doing the work.

Of the 299 operations reported by Norris, 7 per cent. resulted in gangrene. These percentages have been very much reduced during the days of more recent antiseptic surgery.

The obstruction of veins occurs as often, and is as serious as when it occurs in arteries. The sudden obstruction of either is likely to produce moist gangrene, while slow obliteration results in dry gangrene. Careful consideration of the collateral circulation of the thigh would doubtless disprove the statement that there is more danger of gangrene ensuing from a ligature applied between the epigastric and profunda than when it is applied either above or below them. Langenbeck's philosophy, which taught that it was necessary to ligate both in case of injury of one, has, like that of Branne, been proved erroneous. Hunter, who was the first to ligate the artery in the canal bearing his name, thought it safer to ligate the external iliac artery than any part of the femoral artery.

Billroth mentions a case of chronic occlusion of the ascending vena cava, collateral circulation having been established by the superficial veins, which could be seen enormously distended. Dr. R. J. Pumphrey of Massillon, Ohio, reports by private correspondence recovery in a case of injury during operation for strangulated hernia to both the femoral artery and vein, which necessitated complete occlusion of both by ligature; recovery was uneventful.

Dr. H. K. Adams of Maysville, Ky., reports a case of a male, 40 years of age, who received a pistol ball in the right Scarpa's triangle; the femoral artery was partially severed; large clots and distension prevented death from hemorrhage for forty-two days, when the leg was amputated below the knee, sepsis no doubt being more responsible for gangrene of the foot than mere occlusion; recovery followed with a useful knee-joint.

My own experience is limited to the following three cases:

CASE 1.—A male 38 years of age, with strangulated femoral hernia; the femoral vein was ligated below Poupart's ligament, for laceration; no unfavorable results.

CASE 2.—A male, 42 years of age, with sarcoma of the left iliac fossa; the external iliac vein was lacerated during operation; ligation without any indication of occlusion.

CASE 3.—A male 36 years of age, with sarcoma of the sheath of the sartorius muscle; new growth about three pounds in weight; incision extending from Poupart's ligament to knee; both the femoral artery and vein, together with the sartorius muscles were so entangled in the new growth that their removal was necessary; a former extirpation of the growth no doubt made their removal more difficult. Recovery was rapid and uneventful, comfort and the use of the leg being assured for eight months, at the end of which time the new growth caused him to take his bed, upon which he will soon find relief in death.

Either one of the following varieties of the femoral artery may exist, and thereby explain how the leg may be nourished when a femoral artery is ligated, especially if either one or more of them should be present with an apparently normal femoral artery.

"1. The femoral artery may divide below the origin of

*Presented to the Section on Surgery and Anatomy at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1898.

the profunda into two vessels which reunite at a variable distance above the opening in the adductor magnus, to form a single popliteal artery.

"2. A vas aberrans may leave the external iliac artery and running by the inner side of the common femoral artery, may join the superficial femoral about the apex of Scarpa's triangle.

"3. The main artery of the limb may be found wholly at the back of the thigh, and be derived from a greatly distended sciatic artery.

"4. The profunda may arise from the inner or from the posterior side of the main vessel, and may take origin more than one inch or less than two inches below Poupert's ligament.

"5. The circumflex arteries may arise in whole or in part from the femoral; this especially applies to the internal circumflex.

"6. The femoral may give off the deep epigastric, the circumflex iliac, or the great saphenous artery. The last named vessel arises above or below the origin of the profunda, and passing along Hunter's canal, becomes superficial at the inner side of the knee, and follows the internal saphenous vein to the ankle." (Treves.)

CONCLUSIONS.

1. Amputation of the leg is not always necessary when the lumen of the femoral artery or vein or both, is suddenly or slowly occluded by injury or otherwise.

2. It is better to ligate the femoral artery or vein, or both, and give the patient the benefit of a doubt than to amputate immediately.

3. It is impossible to determine the circulation of the thigh or any given part of the human body without a complete dissection, which can only be done post-mortem.

4. Ligating the femoral artery or vein, or both, in the various pathologic conditions of the thigh, seems less likely to result in death or gangrene than when the ligature is applied in case of accidents in a normal thigh.

5. It can not be determined what role, if any, any one of the six varieties of the femoral artery has played in any case in which the femoral artery or vein, or both, have been ligated, as no record of dissection seems to have been made.

6. While end-to-end anastomosis may be accomplished, complete occlusion sooner or later takes place.

7. Suturing and the application of ligatures to arteries and veins which have been lacerated have no advantage over complete immediate occlusion by ligature.

8. Gangrene is possibly due to septic infection and not merely to the occlusion of the femoral artery or vein, or both, unless the vessels for collateral circulation are absent.

9. The preservation of the leg does not seem to depend upon the ligating of the femoral artery or vein, or both, at any particular point.

DISCUSSION.

DR. THOS. H. MANLEY, New York City—This paper of Dr. Ricketts is peculiarly rich in suggestion and raises so many points for discussion, that to cover them all would be impossible, within the range of time permitted. Those of us who have made an experimental study of the circulation must come to the conclusion that all the phenomena of the circulation are not altogether understood by the physiologist. As an illustration of that, in the course of my own experiments I ligated the aorta, the iliac and the brachial arteries of a frog, but found that the circulation went on quite the same as when the heart was unhampered. I found, therefore, that the circulation was to a certain extent quite independent of the heart's action. The point raised by Dr. Ricketts is a very important one, and I have been able to verify it several times in cases of moist gangrene: the primary trouble beginning in the veins. It is probable that in almost all these cases where

the senile changes set in the primary lesion is in the veins of the periphery of different areas of the trunk. We have also found lately that what has been submitted by Bennett, in the operation for varicose leg, is another rebuttal of the theory, showing that the simplest way to treat a varicose vessel is to strip the saphenous vein, choke off the circulation, divide it, and destroy the vein, thereby diverting the blood from the periphery to the center, although the distal distended veins remain.

TUBERCULOSIS OF PHARYNX.*

WITH PRELIMINARY REPORT OF TUBERCULOUS INFECTION OF TONSILS AND LYMPHOID TISSUE OF NASO-PHARYNX.

BY CLEMENT F. THEISEN, M.D.

Instructor in Diseases of the Nose and Throat, Albany Medical College; Attending Laryngologist and Rhinologist to St. Peter's and the Child's Hospitals.

ALBANY, N. Y.

It is a strange fact that although pulmonary tuberculosis carries off more of the human race than any other disease, its local manifestations in the upper respiratory tract occur with comparative infrequency. The larynx is much more often affected than the pharynx. In 1226 cases of tuberculosis, Heinze found the larynx involved in 276 or 30.6 per cent. Mackenzie, in 100 cases in the second and third stages, found changes in the larynx in 71. Tuberculosis of the pharynx must be regarded as an extremely rare condition. Lennox Browne¹² states that acute tuberculous sore throat occurs in about 1 per cent. of all cases of tuberculosis of the upper air-passages. This percentage, according to the consensus of opinion, is if anything too large. Willigk, in 1307 autopsies, found only 1 case of pharyngeal tuberculosis. Bosworth¹⁸, who thinks that tuberculosis of the fauces is an evidence of acute miliary tuberculosis, has only seen 5 cases. Levy²⁰ has reported 162 cases of tuberculosis of the pharynx and larynx. In 17 of these, the pharynx only was diseased. It is rather difficult to explain if the statement made by Wright¹⁷ and Schmidt²⁶, that the tubercle bacillus may penetrate the perfectly intact epithelium, is correct, why tuberculosis of the pharynx is so rare, as bacilli are frequently found in the nasal cavities and throats of healthy people. Strauss⁵ examined the dust and mucus from the nasal cavities of 29 persons, all in the best health, with no indications of tuberculosis. Bouillon cultures were made and the fluid injected into 29 guinea-pigs. Injections were made into the peritoneum: Seven died of septicemia or purulent peritonitis, 13 remained healthy and 9 got tuberculous processes, which plainly started in the peritoneal cavity.

In children pharyngeal tuberculosis is even a much rarer condition. Schifferowitch³, in a thorough search of the literature, has been able to find only 87 cases reported up to 1887, and only 1 case in a child—6 years old. Other cases of faucial tuberculosis in children have been reported by Siegert²⁹ and Geel. In one of Siegert's cases, that of a boy aged 11, there were present superficial ulcers of both tonsils, mucous membrane of soft palate, uvula and a portion of the posterior wall of the pharynx. There was also tuberculosis of the lungs. In the second case, a girl of 4½ years, the ulceration involved the right side of the soft palate, the right palatine arch and the left faucial pillar. The lungs were not involved in this case. In Geel's case, a child 7 years old, there were tuberculous ulcers of the soft palate, uvula, base of tongue and epiglottis; there was also pulmonary

*Presented to the Section on Laryngology and Otology, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1890.

tuberculosis. Frobelius² has recorded 18,569 autopsies of infants in the first four months of life, in 416 of whom tuberculosis was the cause of death; the pharynx was not affected in a single case.

Pharyngeal tuberculosis is as a rule secondary to the lung involvement, or may be coincident with it and is usually a symptom of acute general tuberculosis. In many cases the sputum causes the infection, but in the large majority it is undoubtedly conveyed by the blood and lymph channels. The ulcers probably result from the breaking through of tubercles toward the surface of the mucous membrane, and the breaking down of many small tubercles forms the larger ulcers. The rapid extension of the ulceration is without doubt favored by the presence in the throat, at the same time with the tubercle bacilli, of pus-producing bacteria. Fraenkel⁴ has demonstrated the frequent presence of the staphylococcus pyogenes aureus and the streptococcus pyogenes in throat tuberculosis.

Pharyngeal tuberculosis may be also secondary to tuberculous caries of the cervical vertebræ. According to Osler¹³, tubercular adenitis of the cervical glands and tuberculosis of the pharynx in children, may follow tubercular processes of the axillary glands or carious cervical vertebræ.

Primary cases, although exceedingly rare, have been reported. Rosenberg⁴², in 22,000 throat diseases, has reported 22 cases of pharyngeal tuberculosis, 3 of which were primary. Out of 7 cases observed by Delavan⁴³, one had its primary seat on the velum. Pluder²³ has seen a case in a male of 16 years. There was extensive ulceration of the posterior wall of the pharynx extending into the posterior nares, and of the surface of the right tonsil and uvula. There was no evidence of pulmonary tuberculosis. Another case has been reported by Crossfield⁷; in this case there was primary pharyngeal as well as laryngeal tuberculosis. One case has been reported by Chappell²¹; Rethi²⁵ has reported a case starting from the posterior pharyngeal wall. A case of extensive ulceration of the entire palate and larynx with little lung involvement has been described by Zaruko⁹. Mention must again be made of Siebert's second case.

Other cases of pharyngeal tuberculosis have been reported by Heindl²⁶, Griffin¹⁵, Bowlby⁸ and Parker²². In Parker's case there was ulceration of the right tonsil, nasopharynx and soft palate, which developed after the removal of enlarged tonsils and adenoids. Smith²⁵ has seen 5 cases of tuberculous ulceration of the soft palate and adjoining soft tissues. Catti⁶ has described a pharyngolaryngeal type of acute miliary tuberculosis. In children it may be mistaken for diphtheria; it runs a very acute and rapid course.

Only two cases of pharyngeal tuberculosis have come under the writer's observation:

CASE 1.—Henry R., aged 21, native of U. S. The ulceration, when the case was first seen, involved a large portion of the posterior wall of the pharynx, uvula and tonsils, and extended into the nasopharynx. There was extensive lung involvement. The larynx was almost free from ulceration. The disease ran a rapid course, terminating fatally within six weeks after the patient came under my observation. Iodid of potash had been tried without effect.

CASE 2.—E. L., a young woman 22 years old, native of U. S. In this case the pharyngeal ulceration was very slight and started on the posterior wall. There was present a superficial ulcer half as large as a ten-cent-piece, on the posterior wall directly back of the uvula. There

was also a small ulcer in the larynx in the interarytenoid space. There was dulness at the right apex, with bronchial breathing. The pulmonary and laryngeal tuberculosis was first present in this case so that the development of the disease in the pharynx could be watched from the beginning. There was first some slight redness of the mucous membrane with several small grayish nodules; these, in the course of another week or so, broke down, forming the ulcer which had all the characteristic appearances. After continued applications alternately of lactic acid and orthoform in olive-oil, the pharyngeal ulcer got entirely well. The patient is now in Denver, where she is doing very well indeed.

A bacteriologic diagnosis was made in both cases.

The ulceration in the pharynx and particularly of the tongue sometimes extends quite deeply into the muscles of these parts. This has been demonstrated by Beale¹⁶.

If the cases above mentioned, which represent a considerable number of those reported during the past five years, are considered, it seems evident that tuberculosis of the pharynx is after all not so very rare. I quite agree with Shurley, however, that pure tuberculous conditions of the pharynx unassociated with other affections, are very rare. In fact, Shurley has made the statement, that he has not seen cases of tuberculosis of the pharynx except in mixed infection. While the diagnosis can usually be made by the appearance of the ulcers and the bacteriologic examination, in cases of mixed infection, it is at times very difficult. This is so in the cases of mixed tuberculous and syphilitic infection. It has been shown too by Naegeli²⁷, that localized tuberculosis may take on a carcinomatous character, the tuberculosis usually being the older process. On the other hand, tubercle bacilli may enter a carcinomatous ulcer. Loeb found in 111 cases of carcinoma, that in 31 it was combined with tuberculosis. Warthin²⁸ has reported a combination of sarcoma and tuberculosis occurring in a wart of the skin, has twice seen tuberculosis and carcinoma combined in the mammary gland, and in one case this combination occurred in the axillary glands.

Except in these combined cases, the differential diagnosis between pharyngeal tuberculosis and beginning carcinoma should not present any particular difficulties. The only other forms which, according to Mikulicz²⁸, may have diagnostic difficulties, are the severe ulcerations occurring in cases of advanced phthisis, and the very rare solitary tubercular ulcer usually situated only on the posterior pharyngeal wall. Another form of tuberculosis of the pharynx or nasopharynx, which is extremely difficult to diagnose clinically, is the tuberculous tumor. Hajek⁴⁴ has reported such a case which was at the time the first one on record. Then the type of acute miliary tuberculosis in children may present difficulties in diagnosis. A positive diagnosis of pharyngeal tuberculosis ought not to be made without a bacteriologic examination, and without first trying potassium iodid. It is really surprising how many ulcerative throat conditions, even with positive evidence of pulmonary tuberculosis, and which clinically present all the appearances of tuberculosis, get well when potassium iodid is administered. I have had a number of such cases.

Since the publication of Dieulafoy's experiments, in which he called attention to tuberculous infection of the tonsils and the lymphoid tissue of the nasopharynx, much greater interest has been taken in the subject. Dieulafoy¹⁸ inoculated portions of extirpated tonsils into 61 guinea-pigs, 8 of which became tuberculous. Guinea-

pigs were also inoculated with adenoid tissue from 35 cases, and 7 developed tuberculous processes. He distinguishes three stages: 1. Latent tuberculosis, in which the bacillus causes a multiplication of phagocytes and enlargement of the tonsils; this process, by development of fibrous tissue in the tonsils, may not extend, but often does. 2. The submaxillary and cervical lymphatic glands are invaded, and from there they may be extension through the lymphatics, until the thoracic duct or right lymphatic duct is reached, whence the bacillus is carried to the right side of the heart. 3. From the heart the process may finally reach the lung.

Wright²⁴ has questioned the accuracy of Dieulafoy's experiments. His investigations, made in the same way, were entirely negative. Guinea-pigs were inoculated with tonsillar and adenoid tissue from 12 unselected cases, which had before been histologically and bacteriologically examined. The experiments of W. H. Park and those of Botey were also negative. Lermoyez and Macaigne²⁵ have reported a case of primary tuberculosis of the tonsils of a young girl. There was no tuberculosis of the lungs; microscopic examination of the extirpated tonsils showed separate and confluent necrotic tubercles with giant cells and some bacilli. Tusseau¹⁹ has reported 3 cases of tuberculosis of the tonsils. Lermoyez, in 32 cases of adenoids found tuberculosis in 2. Brindell, in 64 cases, found tuberculosis 8 times in the adenoid tissue that was removed. Gottstein¹⁰, in 33 cases, found it 4 times. Fischer and Pluder¹⁹, in 32 cases, found tuberculosis 5 times; twenty-eight of these cases were children and 4 adolescents and adults; only 10 of the children were scrofulous; not one of them had general tuberculosis. The diagnosis was made histologically. Latent tubercles were found in the mucous membrane of the adenoids. A few bacilli were present in the diseased part, never in the epithelium nor healthy lymph follicles. Distinct caseation was found in half of the cases. Walsham²² examined the tonsils of 34 tuberculous subjects, on all of whom autopsies were held. During life, with two exceptions, there had been no symptoms of tuberculosis of the tonsils. In 20 cases, the tonsils were found to be tuberculous. Broca, on the other hand, examined the extirpated adenoid tissue from 100 cases, without finding evidence of tuberculosis in a single case. For some time, tonsils and adenoids removed in operations in private and hospital practice have been carefully examined histologically and bacteriologically, at the Bender Laboratory, by Dr. George Blumer. Of these, 23 were cases of adenoids and 12 of enlarged tonsils. These 35 specimens were all from unselected cases, children between the ages of 4 and 15 years. In each case a careful physical examination was made of the patient, particularly for evidences of pulmonary tuberculosis. None of the 23 adenoid cases had any tuberculosis that could be detected, and 11 of the tonsil cases were also free from general tuberculosis. In nearly all of these cases, however, the cervical lymphatic glands were markedly enlarged, and a number of the children had had operations for suppurating glands in the neck. On histologic examination, none of the hypertrophied lymphoid tissue removed from the nasopharynx was found to be tuberculous, but of the 12 tonsils, two were found to be tuberculous. In one case, the tuberculosis of the tonsil was probably primary. The tonsil of the one case (Specimen 51 of the report) was from a girl 6 years old, a patient in the Child's Hospital, who had had an operation for tubercular arthritis of the knee. In the second case (Specimen 52), a girl 5 years old, there

was absolutely no evidence, on careful physical examination, of tuberculosis anywhere else, so that the tuberculosis of the tonsil must be considered the primary condition.

Following is the report of the examination of the tonsils, at the Bender Hygienic Laboratory, Albany, N. Y., May 22, 1899.

Specimen 51.—The tonsillar substance is, for the most part, perfectly normal in appearance. At one or two points, however, there are areas of cells which contract very sharply with the tonsillar substance, on account of the lighter stain which they take. These areas consist of sharply circumscribed cellular nodules made up mostly of oval or irregular cells of an epithelioid type; and of small round lymphoid cells. There are also present, in some of them, large multinucleated cells, in some of which the nuclei have a peripheral arrangement. The centers of some of the nodules are entirely necrotic, taking a pink stain, containing a good many nuclear fragments, and into these necrotic areas a good many typical polymorphonuclear leucocytes have wandered. A few tubercle bacilli were found after appropriate staining.

Specimen 52.—The greater portion of the tonsil is normal, but at a number of places there can be seen, in the tonsillar substance, sharply circumscribed cellular nodules, made up, for the most part, of cells of an epithelioid type, but also containing small round lymphoid cells, and typical giant cells of the Langhan's type. The majority of these nodules are very small and show no signs of degeneration, but in one or two of the larger ones, beginning central necrosis can be made out. In this specimen also a few tubercle bacilli were found after appropriate staining.

GEORGE BLUMER, Pathologist.

Not enough consideration has been given to the fact that the tonsils are of considerable etiologic importance, as perhaps often the primary seat of infection in general tuberculosis. As mentioned before, Dieulafoy has shown how the tuberculosis may extend from the tonsils to the lungs.

Winckler¹⁴ found that in scrofulous eye affections, 50 per cent. had diseases of the nose or nasopharynx. He examines all eye cases for adenoids. If it is granted that scrofulous lesions are due to the development of the bacillus tuberculosis, the importance of diseased tonsils as a cause of scrofula is readily seen. It is a question whether hypertrophied tonsils and adenoids are not frequent causes of scrofula. As Baginski¹⁶ has said, "subjects of the lymphatic constitution are only selected cases of the most outspoken form of scrofula."

The bacteria cause an increased hyperplasia of the lymphoid tissue of the nasopharynx and tonsils, and from there the scrofulous process extends by way of the lymph-channels to the glands of the neck, and to the ears and eyes. Certainly children of this lymphatic type are extremely subject to infection. This is frequently shown by their enlarged glands, and the involvement of the lymphatic structures all over the body. We have all seen how wonderfully these children improve when their diseased tonsils and the lymphoid tissue of the nasopharynx are promptly removed, provided there are no tuberculous processes in other parts of the body. If not removed early enough, they are a constant menace to the general health. I do not think there is any doubt, even though our own examinations of adenoids were negative, that if all extirpated tonsils and adenoids were subjected to a very careful histologic and bacteriologic examination, tuberculous conditions would be frequently found. That other general infections, as well, have their origin in the tonsils, has been pointed out by Jessen¹⁴. He has reported four cases to prove this: a case of severe general infection following disease of the tonsils, and a second case of fatal pyemia, the result of tonsillar abscess. The third case was one of pneumonia with pericarditis, pleuritis and nephritis, following

a streptococcus angina. In the fourth case there was a fatal double pneumonia with its origin in the tonsils. The author states that without a bacteriologic examination it would be natural to attribute some of these cases to influenza. He also believes that these cases are not rare; that many of the septicemias, and the streptococcus and staphylococcus pneumonias, gain entrance into the system through the tonsils. Richardiere and Hanot have reported fatal cases of lymphangitis, pleurisy and sepsis, following non-phlegmonous inflammation of the tonsils. Hodenpyl has claimed that bacteria could not enter the tonsils unless there was a "loosened" epithelium. This, however, is always the condition of the epithelium in the crypts of the tonsils. Whether the scarlatinal angina is not the point of entrance for the scarlet fever is still an open question. Abrahams, Trousseau and others, have reported cases of rheumatism following inflammation of the tonsils.

In conclusion I would express my thanks to Dr. Blumer for his valuable aid.

BIBLIOGRAPHY.

1. Gee: Medical Times, 1877. (Reported by Siegert.)
2. Föbelius: Jahrbuch f. Kinderheilkunde, 1886.
3. Schöffelwitsch: Zeitschr. f. Chir., S. 327, 1887.
4. E. Fraenkel: Zur Aetiologie der Tuberculösen Kehlkopfgerewh., Cent. f. Rhin. Med., 1888.
5. Strauss: Münchener Med. Woch., No. 28, 1894.
6. Report Laryngol. Section, Eleventh Internat. Med. Congress, Rome, 1894.
7. F. S. Crossfield: Tuberculosis of Larynx and Pharynx, Med. Record, Sept. 29, 1894.
8. Report of London Laryngol. Soc., Nov. 14, 1894.
9. Zarniko: Tuberculöse Rachengeschwülste, Münchener Med. Woch., Nov. 17, 1894.
10. Tusseau: Lyon méd., No. 16, 1894.
11. Schnitzler: Klin. Atlas der Larynx u. Rhin., 1894.
12. Lennox Browne: Diseases of Throat, 3d ed.
13. Wm. Osler: Tuberculosis, Am. Text-book Diseases of Children, p. 108, 1895.
14. Winckler: Bericht u. die Abtheil. f. Larynx u. Rhin. der 67 Versammlung der Gesellsch. Deutsche Naturforscher u. Aerzte Lübeck, September, 1895.
15. E. H. Griffin: Case of Tuberculosis of the Pharynx, N. Y. Med. Jour. Feb. 16, 1895.
16. Report London Larynx Soc., Dec. 11, 1895.
17. Report Am. Larynx. Ass'n, June 17-19, 1895.
18. Dieulafoy: Centralbl. f. Inn. Med., 1895; British Med. Jour., June 1, 1895.
19. F. Pluder u. W. Fischer: Archiv f. Larynx u. Rhin., Bd. iv., Heft 111.
20. Robert Levy: Pharynx Tuberculosis, Denver Med. Times, June, 1895.
21. W. F. Chappell: Primary and Secondary Pharynx Tuberculosis from Clinical Standpoint, N. Y. Med. Jour., Sept. 19, 1896.
22. Report of London Larynx Soc., Dec. 9, 1896.
23. F. Pluder: Archiv f. Larynx u. Rhin., Bd. iv, S. 119, 1896.
24. J. Wright: Tuberculosis of Lymphoid Tissue in Pharynx, etc., N. Y. Med. Jour., Sept. 26, 1896.
25. Bericht der Wiener Larynx. Gesellsch., Jan. 7, 1897.
26. Ibid., May 6, 1897.
27. Otto Naegeli: Die Combination von Tuber. u. Carcinom., Virchow's Archiv, Bd. cxviii, S. 435, 1897.
28. F. H. Bosworth: Diseases of Nose and Throat, p. 513, 1897.
29. M. Schmidt: Die Krankheiten d. oberen Luftwege, 1897.
30. F. Siegert: Pharynx Tuberculose in Kindesalter, Jahrbuch f. Kinderheilkunde, S. 123, 1897.
31. J. Gibb: Differential Diagnose d. Geschwulstprocessen im Pharynx u. Larynx, Med. Chir. Centralbl., 5-6, 1898.
32. H. Walsham: Latent Tuberculosis of Tonsil, British Med. Jour., May 7, 1898.
33. Lermoyez and Macaigne: Tuberculose Primitif, des Amygdales, 1898.
34. Jessen: Aertzliche Monatschr., Dec., 1898.
35. E. D. Smith: Five Cases of Tuberc. Ulceration of Soft Palate, etc., N. Y. Med. Jour., Feb. 14, 1899.
36. A. Bucinski: Internat. Clinics, p. 97, April, 1899.
37. A. S. Warthin: Unusual Localizations of Tuberculosis, Medical News, May 6, 1899.
38. J. Mikulicz: Handbuch d. Laryngol. u. Rhinol, S. 394, 1897
39. Frudenthal: Klein. Beitr. zur Aetiol. d. Lungentuberc. Arch. f. Larynx., Bd. v, 1896.
40. Hottelstein: Pharynx u. Gaumentonsillen prim. Eingangspforten d. Tuberculose, Berliner Klin. Woch., No. 31, 1895.
41. Hajek: Tuber. d. Nasenschleimhaut, Klin. Rund., S. 118, 1889.
42. Rosenberg: Quelques Remarq. s. l. Tuberculose Laryngée, Rev. de Larynx., No. 22, 1895.
43. D. B. Delavan: Ueb. Mundtuberculose, Centralbl. f. Larynx., iii, S. 150, 1887.

DISCUSSION.

DR. ROBERT LEVY, Denver, Colo.—I regret that I was not here to hear all of the Doctor's paper, for it is one of exceeding

interest to those of us living in the section of country I do, and seeing as we do, a great many cases of tuberculosis and not a few cases of tuberculosis of the pharynx. A few years ago I reported seventeen cases of laryngo-pharyngeal tuberculosis and since then I have records of a number of additional cases. While potassium iodid often will clear up ulceration in the pharynx, those ulcerations in my experience have not been very suggestive of tuberculosis of the pharynx, neither in their own clinical appearance nor in the clinical appearance of the patient. In tuberculosis of the pharynx the general condition is usually quite distinctly tubercular. In laryngeal tuberculosis the diagnosis often is more difficult. I will not say there are not exceptions, but in a general way those cases which have cleared up under potassium iodid have given a history sufficiently suggestive to lead us up to the administration of potassium iodid with considerable certainty. As to the source and the mode of infection, in my hospital experience I was struck with the presence of acute pharyngitis in cases which afterward developed pharyngeal tuberculosis. In reading the works of a number of men as to the mode of infection I was particularly struck with the fact that frequently the infection is local and is the result of a destruction of the epithelial covering, whereby an opening is made for the entrance of the specific poison. I will not say that many cases do not occur through lymphatic infection, but I do believe that a local inflammation may exist which will assist in admitting the infection. As a rule tuberculosis of the pharynx occurs in advanced cases of pulmonary tuberculosis, and rarely is it found that tuberculosis of the pharynx occurs early in the disease.

DR. EMIL MAYER, New York City.—The Chair would ask the reader of the paper to state, if he can, the final outcome of the case where he found tubercle bacilli where the disease had not been suspected. And also, I failed to notice whether he had anything at all about the diagnosis clinically between tuberculosis of the pharynx and lupus.

DR. E. FLETCHER INGALLS, Chicago—I was interested especially in the views expressed in this paper as to the mode of infection of the pharynx. If the infection results from the sputum, we ought to have tuberculosis of the pharynx more frequently than we do in tuberculosis of the lungs, therefore it seems that the infection must usually be through the blood-vessels rather than from the surface of the pharyngeal mucous membrane. A form of sore throat, known as scrofulosis, that causes large and comparatively deep ulcers, sometimes occurs, in which we do not know the exact etiology. It has been thought that these cases are generally the result of an inherited mixed infection of tuberculosis and syphilis. At any rate the ulcer is likely to occur in individuals whose parents have had one or both of these diseases. These cases occur in comparatively young children; they do not present the appearance that we commonly see in tuberculosis of the pharynx, nor that of the deep ulcer of syphilis. As a rule, these ulcers have beveled edges and they are about midway in depth between the tubercular and deep syphilitic ulcers. In such cases it is difficult to determine whether there is a tubercular process or not for we are not likely to discover the tubercle bacilli, and I think they have been sufficiently studied. I have seen a few of these cases and have found that they generally yield to the treatment that I commonly employ in tertiary syphilitic ulcerations of the pharynx. This consists of the tincture of iodine in full strength, carefully applied until the surface has a dry brown glazed appearance. These applications are made daily for about ten days and they less frequently, usually for about two weeks until the ulcer is healed. At the same time the patient is given moderate doses of iodids, and nux vomica or other tonics as indicated.

DR. C. F. THEISEN, Albany, N. Y.—In reply to Dr. Mayer's query, I would say that in the cases I have seen in private practice, I was only able to make out these two positive cases of tuberculosis of the pharynx. In all the ulcerative cases the bacteriologic examination is made. In most such cases the streptococcus is found and I have no doubt it is the streptococcus that causes the rapid ulceration and destruction. But in all the other cases (except the two I reported), iodid of potassium cleared up the pharyngeal ulceration. Dr. Mayer asked about the child in which the condition was only found on histologic examination. The examination showed the necrotic tubercles with giant cells and tubercle bacilli, a typical microscopic picture of tuberculosis. It was impossible to tell whether the other case was primary or not. I did not go into the diagnosis of tuberculosis in detail, because I had to handle the subject in a short space of time. I think there is no doubt the diagnosis is easy between tuberculosis and lupus. The bacteriologic examination in these cases does not always clear up the case.

ACCESSORY THYROID TUMORS AT BASE OF TONGUE.*

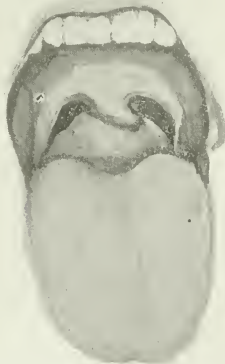
REPORT OF CASES.

BY JACOB E. SCHADLE, M.D.

Clinical Professor of Diseases of the Nose and Throat, University of Minnesota, Minneapolis.
ST. PAUL, MINN.

Accessory thyroid tumors appearing at the root of the tongue are a rare affection. For this reason, if for no other, I desire to bring the subject before the members of the Section for discussion. Several cases coming under my observation I will report, while at the same time I shall take the opportunity to refer to others, which have already been reported. It will be interesting to note the various methods employed for the removal of these tumors.

The first case coming under my notice was that of a Mrs. J., who consulted me May 12, 1896, in reference to a growth at the base of her tongue, which she discovered six months earlier. The condition seemed to cause her more mental annoyance than physical discomfort. She was 25 years of age, and married. Her weight was 133 pounds, and height 5 ft. 6 inches. Though presenting the appearance of a good physique, she was anemic, mus-



Accessory thyroid tumor of tongue. Schadle-McBurney case.

cular tissues soft and flabby. Evidences of malnutrition and nervous exhaustion were marked. She complained of insomnia and gastric derangement. A heavily-coated tongue, loss of appetite, constipation and distressing flatulency of the bowels were pronounced symptoms. During her unmarried life she had enjoyed excellent health. Menstruation commenced normally, and no irregularity in the epochs occurred. In two years and nine months she was pregnant three times, having given birth to two children at full term and "miscarried" once, suffering much discomfort during pregnancy. Her family history was good.

On examination of the patient's throat, the growth was found to be about the size of an English walnut (Fig. 1). It was plainly visible upon forcible protrusion of the tongue, and was covered with mucous mem-

brane which showed an intense superficial vascularity. The color was a deep, purplish-red. At times it seemed to quite fill the fauces, especially when in a state of acute hyperemia, crowding up the uvula and coming in close contact with the pillars and arch of the soft palate. After the birth of her last child menstruation appeared earlier than usual under such circumstances, but was irregular as to time and continuance of the epoch.

During the time of the apparently suppressed menstrual function, the lingual tumor would swell and become very vascular, a most peculiar phenomenon. On palpation it was found hard and immovable. Externally, underneath the lower jaw the same condition existed. No pain was present, and respiration and deglutition were not interfered with. Impairment of speech was noticeable, the voice being thick and non-resonant. On laryngoscopic examination, the larynx was visible and the epiglottis seemed normal, except, perhaps, being interfered with in its movements produced by the presence of the tumor.

Being in doubt as to the nature of the tumor, and judging from its physical appearances that severe hemorrhage was sure to follow radical removal, I determined on first testing its vascularity by the introduction of an exploratory needle into the growth, which procedure was followed by considerable bleeding. After this experience I concluded the removal of a piece for microscopic purpose was not justifiable, thus preventing me from arriving at a proper diagnosis. Comparing the tumor as to appearance and vascular behavior, with what seemed to me similar growths sometimes seen in the nose and nasopharynx. I made up my mind that this was a fibroma. Feeling that removal by the use of the snare, either hot or cold, would involve considerable danger as to hemorrhage, I accordingly suggested that a conservative line be adopted and await results. With this end in view I began the use of electrolysis. The tumor, under this method of treatment, was reduced to about one-third of its original size in a period of two months, from May 11 to July 15. On the latter date the withdrawal of the needle was followed by a copious bleeding, which was brought under control by applications of Monsel's solution.

The use of electrolysis was now continued. After another week a hemorrhage, more violent than either of the others, occurred, and left the patient in a weak and anemic state. I now advised consultation, and Dr. McBurney of New York was seen. But before visiting him Drs. Ingals and Lincoln also saw the patient, the former in a measure confirming my opinion, while the latter had no opinion to offer.*

Dr. McBurney's letter under date of Oct. 25, 1896, in answer to my note of introduction, reads as follows:

"Mrs. J., whom you kindly referred to me, has called on me twice, and I have carefully examined her. Her tumor is a rare one, and I have only twice before seen its counterpart. I regard it as a myxoma, or adenomyxoma. Its true seat is in the substance of the tongue, the portion that can be seen on the dorsum being only about one-third of the whole mass. There is only one method by which it can be safely and entirely removed, and this one I have no hesitation in recommending, a straight incision should be made in the median line, beginning a little below the symphysis menti and extending to the hyoid bone—as this incision is deepened and the edges separated, the surface of the tumor nearest the skin can be easily uncovered and the whole tumor dissected out. The muscular fibers of the tongue are pushed

*Presented to the Section on Laryngology and Otology, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1896.

*Since this paper was read Dr. Lincoln informs me that he viewed the growth as a tumor of the fibroid type.

to either side and the tumor enucleated with little or no injury to the tongue. This operation is safe and certain, and no danger from hemorrhage will arise. Every vessel would be tied as soon as cut."

The operation was performed by Dr. McBurney in accordance with the above description. Considerable loss of blood attended the removal of the tumor, which rendered the operation tedious and difficult. The patient made a good recovery, and has been well ever since.

The growth was microscopically examined by one of the pathologists connected with the Vanderbilt Clinic, who reported it to be a gland of the thyroid—ductless—type.

Dr. J. L. Rothrock of St. Paul also made a microscopic examination of a section of the growth which I gave him, and the following is his report:

"Microscopic examination of the section submitted to me shows it to consist histologically of structure identical with the thyroid gland. From the location from which this tumor is removed there is no doubt that you are dealing with an accessory thyroid gland."

I wish also to report the case of a young woman, aged 23 years, patient of Dr. A. C. Heath, who came under my observation during the past year. A growth appeared in her throat at least ten years ago, as the patient thought. Inspection of the pharynx revealed a tumor slightly larger than a hen's egg situated on the base of the tongue just anterior to the epiglottis. This tumor was smooth, dense, of a dusky-red color, with a characteristic resilient feel and appeared perfectly homogeneous. It filled the mouth so that it was impossible to get a view of the larynx or even the epiglottis. Her voice had entirely lost its resonance; it was dead and muffled. She had some difficulty in swallowing, and a shallow, resistant cough. This case was watched for four weeks, and surgical procedure advised. Unfortunately, however, she would not submit to an operation, thus preventing the verification of the diagnosis. But from its various characteristics the growth seemed very similar to the above case, and would justify the diagnosis of accessory thyroid situated at the base of the tongue.

On searching for literature on the subject of thyroid tumors at the base of the tongue, I found that Dr. J. Collins Warren of Boston reported a case¹. The following is a synopsis of his report, the patient being sent to him by Dr. F. I. Knight:

On examination of the throat a tumor presented at the base of the tongue about the size of a hen's egg. The laryngoscope showed that it was not connected with the epiglottis. It seemed to be covered with normal mucous membrane, and a tortuous vessel of considerable size could be seen running over the anterior surface. The patient was a woman over 52 years of age, who had always enjoyed good health, is at present strong and stout, mother of three healthy children, but her parents both died of consumption. She first noticed a lump in her throat about twenty-two years ago. Since that time it has been slowly but steadily increasing in size. The catamenia ceased about five years ago, but no special change in the tumor occurred. The removal was accomplished May 4, 1892. After etherization, a ligature was passed through the tip of the tongue, and two additional ones through the dorsum of the tongue on either side of the tumor in the region of the papillæ circumvallatæ. Traction brought the whole tongue forward, so that the tumor presented between the incisor teeth, then an incision was made on the median line of the tumor, which was enucleated. It

appeared to be situated just beneath the mucous membrane, and it did not involve the substance of the tongue. Three vessels required ligature. The patient made an uninterrupted recovery, and two weeks later returned to her home. Three months after the operation there was no sign of return of the tumor. Microscopically (Dr. Whitney), the structure was that of a ductless gland with colloid degeneration, and in all its essential histological details corresponded to the thyroid. In the *British Medical Journal*, Dec. 1, 1894, appears the following report of a case admitted to the Golden Square Throat Hospital:

A. D., a girl 17 years of age, complained of a lump at the back of the tongue. It was giving no trouble, and had only been discovered two months previously, when her singing master examined her throat and noticed the lump there. Her speech was somewhat thick. She was an undersized but well-nourished girl. Situated at the base of the tongue, close to the position of the foramen cecum, was a tumor about the size of a small walnut. The larger half of it was to the right side. It felt semi-elastic, and was immovable on the deep tissues of the tongue. It pressed backward on the epiglottis, and when the tongue was pulled out it almost touched the base of the uvula and the soft palate. The thyroid was normal. Under chloroform, Dr. Bond cut the mucous membrane round about it with a pair of curved scissors. The tumor was fixed with a pair of tenaculum forceps and removed with the aid of a raspatory and a Mackenzie's polyus snare. Bleeding was profuse, but was controlled by pressure on the base with a finger around which a piece of lint steeped in turpentin was wrapped, while the girl was turned almost on her face to allow the blood to run out of her mouth. There was no recurrence of hemorrhage, and the patient made an uninterrupted recovery, the wound being healed in ten days. Microscopic examinations showed the tumor to present the ordinary appearances of thyroid gland structure.

In the Transactions of the Clinical Society (Vol. xxiii, 1890), Butlin reports eight cases. The history of two of these cases is thus briefly stated:

The first occurred in a female 32 years of age, and was thought to be about the size of a hen's egg. Tracheotomy was performed, and the tumor was removed through the mouth by an incision on the median line and scooping out the soft mass. There was a recurrence, but the tumor remained much smaller in size. The second case was also a female, 23 years of age. The tumor, which had existed two years, and was smaller than the former, was removed by the galvanocautery loop.

The question arises: Why should thyroid tumors make their appearance at the base of the tongue? The occurrence doubtless is due to a congenital defect or a lack of closure of the thyroglossal duct as development goes on. On this point Sutton, in an abridged form, makes the following remarks:

Tumors which structurally resemble the thyroid gland are not infrequently met with in this region. They originate in connection with the lingual duct, a structure of embryonic significance. In the embryo a diverticulum takes place from the anterior wall of the pharynx, forming what is known as the thyroglossal duct, and about this the thyroid gland is developed. This duct opens at the base of the tongue at a spot represented in the adult by the foramen cecum, and, passing downward, bifurcates to form the isthmus of the thyroid, the branches uniting with the embryonic gland structure to form the lateral lobes. As development goes on the hyoid bone is formed, and in its growth divides the duct

¹ American Jour. Med. Sci., October, 1892.

into an upper (lingual) and a lower (thyroid) portion. Both of these are obliterated, as a rule, when development is complete; but sometimes, in the newly-born child, a fine probe or bristle can be passed for a short distance along the lingual part from the foramen cecum, between the geniohyoglossi muscles to the body of the hyoid bone, where it is continuous with a fibrous cord passing in front of it over the thyroid membrane, and down toward the thyroid isthmus. Occasionally either of the two portions persists—closed at both ends—and gives rise to a dermoid cyst. It is in connection with this lingual portion of the thyroglossal duct that a tumor such as above noted is developed.

DISCUSSION.

DR. EMIL MAYER, New York City—The Chair would like to report briefly a case that came under his observation some time ago, in which he was quite confident that there was a thyroid tumor at the base of the tongue. At the base of the tongue there was a large tumor pointing toward the epiglottis, so that the individual had suffocative attacks and for some time did not dare to go to bed. When I saw the patient I found him to be a stout man, and only with the greatest difficulty was I able to get a view of the larynx and the posterior portion of his tongue. The growth was fully an inch long at that time. I felt confident we would have some trouble, because of the suffocative attacks, but I advised the attending physician to give the patient potassium iodid in large doses. Some weeks afterward the patient returned, claiming that he was in much better condition. The growth was evidently a specific tumor of the base of the tongue, which is a very rare condition. Later I saw his physician, who had treated him some years ago for syphilitic iritis. Although he has no specific history he has two of the most pronounced tertiary syphilitic lesions.

DR. C. R. HOLMES, Cincinnati, Ohio—I have at present a case under observation, which I mention more for information than for any other reason. The patient is a young married woman, the mother of several children, who came to me about three months ago with a tumor about as large as a hen's egg attached almost throughout to the base of the tongue and extending up almost to the apex of the left tonsil. In fact, it was impossible to say where the left tonsil began and the tumor ended. The tumor was of a dark purple color, smooth and soft to touch. It was impossible to make a rhinoscopic examination, for there was only a small passage on the right side, and yet the tumor was so elastic that the patient had no trouble eating or drinking. The tumor caused only a charge in the sound of the voice. I called in Dr. Thorne, who also gave as his opinion that it was an angiosarcoma. On attempting aspiration, the moment the needle was passed, there was a spurt of blood that squirted through the open mouth and stained my operating gown. I determined on the use of the cautery. A surgeon was called, and he thought it best to ligate both common carotids and go in and cut the tumor out. But as I was not yet willing to place the patient in that condition, I used the galvanocautery. There is now only a small mass left at the base of the tongue. A microscopist reported sarcoma, but I have had cases that did not turn out to be what the microscopist reported. However, in this case the evidence seemed to point in that direction. In connection with the paper by Dr. Schade, it is of much interest to me now, because he speaks of one tumor that was about that color and resilient and vascular, and I would like to know whether he thinks from his experience that a tumor such as I have described would be likely to be a sarcoma or one of the tumors such as he has reported. I communicated with a doctor in Philadelphia who used electricity very much, and he advised using an anesthetic and a current of 400 milliampères, and having oxygen and everything ready, because the approximation of the phrenic nerve might stop the respiration and action of the heart. I have not tried that except under cocaine, and I found the patient could take only a much weaker current.

DR. J. SCHADE, St. Paul, Minn., in closing—I will only say that from his description I believe the case reported by Dr. Holmes was similar in character to the one I related.

CRIMINAL MORPHOMANIA.*

BY T. D. CROTHERS, M.D.

Superintendent of Walnut Lodge Hospital; Editor
Journal of Inebriety.
HARTFORD, CONN.

The physiologic action of opium and its alkaloids, with symptomatologies, is becoming more familiar with the increasing frequency of cases and studies of many persons. As in other fields of research, there are vast stretches of unknown lands awaiting discovery, and many new facts in the etiology, progress and treatment to be seen and described. My purpose is to point out a new phase in the symptomatology, and describe a condition which has been noticed, but not defined or studied before. I shall use the term "palsy of the higher psychic centers" to describe in part this condition. The former personality of the person is lost, and he acts from a different point of view; his conduct and thoughts vary widely from former conditions, and he seems to have new purposes and changing motives, foreign to any previous life. These strange inconsistencies of conduct and thought come into legal notice, in the question of responsibility in crime. The apparent cunning, honesty and reasoning are so unusual and foreign to all theories of mental failures that the expert is unable to detect any defined insanity, and yet, he can not doubt that some condition of brain disturbance is present.

One case was that of a woman who, after using morphin, went about the house secreting things of value and locking doors and windows, putting away matches, fearing robbers and fire. This was a clear, defined period of several hours, during which she appeared almost rational, and talked clearly of other matters, as well as the danger from these sources. Then she relapsed into her former indifference.

A still more prominent case was that of a noted banker retired from business, who became a morphin taker, following the constant use of spirits. He never appeared to be other than sane and clear on all matters. Occasionally he was stupid at night, at home, but always appeared well in public. Finally, he was detected setting fire to a building. He was found to have been the author of numerous fires in the villages about. He would go to a town and rise in the middle of the night, start a fire in some old building, return to his bed, and so secretly as to disarm all suspicion. He was caught in the act and stoutly denied it, explaining his presence in the most plausible way. The result of investigation showed that after using four or five grains of morphin, he would become very secretive and go about in a stealthy manner, but never at a loss to explain his conduct, or appear other than natural to others. He would show unusual cunning and frankness if found in some suspicious place, and yet without doubt set fire to old buildings, such as barns and outhouses with every opportunity. A number of experts could not find signs of insanity, and yet when the morphin was withdrawn there were many symptoms of dementia and mental instability. The morphin roused up another personality, giving clearness and power to his brain and breaking up all sense of right and wrong. When under these pyromaniacal impulses he acted with unusual cunning and judgment, and seemed to reason that it was clearly his duty to do so. When away from the morphia he had a confused notion of his conduct, and was filled with

*Presented to the Section on Neurology and Medical Jurisprudence, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

remorse at the changed conditions of his life. When under the influence of morphia a new personality of expansive character, came on. He seemed to have a desire to destroy and burn down old unsightly buildings.

A patient under my care for excesses in spirits, suddenly became a speculator, buying stocks on a margin. Fortunately his resources were limited, but the mania continued in lottery tickets and bucket-shop ventures. This was foreign to his past conduct and character, and was unexplainable until his secret morphia addiction was discovered. He left, and two years after began a career of cunning, sharp, dishonest speculations, and was arrested. On trial the resumption of the morphia addiction was shown, but the mental power and skill displayed indicated such unusual ability that he was convicted. I saw him in jail later, when the morphia had been taken away, and the evident unsoundness of his mind could not be mistaken.

A third case came under my notice as an expert. A graduate and prizeman of a college, who married wealth and spent two years traveling, suddenly left his home and began a career as a confidence man and forger. He traveled around under assumed names, passed bogus notes, raised checks, and when caught gave such clear explanations as to disarm all suspicion. Finally he was arrested and held for trial. As long as he could procure morphia he was calm, clear, adroit and possessed of unusual brain power, but after his sentence and removal to prison he became a partial dement and was very feeble mentally. In this case the morphia developed a new personality. He acted and talked as if he believed most firmly the honesty of his acts, and never doubted his ability to deceive and falsify, acting as if he was thoroughly in earnest. When confronted with his deception he did not recognize it, but showed the greatest skill to justify and explain it, never displaying any visible consciousness of the dual life, but always appearing honest and frank to an extreme degree. He passed a forged note, went out on a back street, changed his dress, put on false whiskers and came back on the street, walking about with extreme coolness. He went into a store, bought some morphia, and then purchased a pair of shoes, giving a forged note as before. A detective who had followed him closely, arrested him, and after a short examination before the chief of police he was discharged. His earnest, frank manner convinced them that he was not the man. The next week, in a neighboring city, he did the same thing, was arrested and discharged as innocent. Finally, a detective followed him, and found that he was constantly changing his dress, and assuming different disguises, buying clothes and other things which were finally pawned, giving checks, some good, others bad, and making deposits at banks and drawing them out. During this time he bought morphia freely, but never seemed other than calm and sane. He was finally arrested, and after serving a short sentence disappeared. While using morphia he appeared very frank and honest in his manner and conduct, especially in public and in conversation with others. He carried cards and bill-heads of different well-known firms far away and represented different members of these firms or traveling men connected with them. He always carried an overcoat and means for suddenly changing his appearance. While under the influence of morphia he appeared to be possessed of unusual clearness and cunning, with a most contagious frankness and honesty. There seemed to be no consciousness of the duplicity in his talk or conduct. When the morphia was taken away

the very opposite appeared. He was remorseful and depressed, timid and shrinking, displaying his motives and thoughts in a most marked way.

Another case reported to me was of equal interest. A series of very remarkable swindling operations had been carried on the Hudson River and Long Island Sound night boats. The detectives were unable to fasten the crime on any one, until finally, a young man of refined, delicate appearance, was arrested for passing a forged check. It was ascertained that he was the probable author of all the swindling for the past two years. He was a morphinist and had an income from an annuity. He spent his time traveling around, appearing to be a clergyman, an actor and a business man, and talked freely with every one, inquiring very minutely into the personal history of persons and offices. He would secure advances on brass watches, bogus diamonds, and pass worthless checks and railroad tickets; solicit loans and give in security worthless bonds and stocks, buy goods, giving bogus checks and receiving money in return, show bank deposit books of large sums, and leave them as security. He would make the acquaintance of some rich man, and after swindling him, disappear with some frivolous excuse. He changed his appearance frequently, wearing spectacles, false whiskers and wigs, appearing as a large fleshy man, then wearing half military suits, and so on. His wardrobe was composed of a great variety of theatrical suits, and he claimed to be an actor. In jail he was identified by many persons as assuming different disguises and defrauding them in various ways. As long as he could procure morphia, he was genial, self-reliant, open, honest, and very frank. He never appeared to be deceitful, and always acted and talked as if he believed everything he said and did. The most careful questioning and efforts to have him explain his conduct left a strong impression of his honesty, although it did not explain his life and conduct. The detectives called him an honest rogue while using morphia. His manner on the witness stand was so frank and clear that the mystery of his conduct deepened and the jury was half inclined to think that some mistake had been made. He was sent to prison and the morphia removed, and all his manner changed. His frank, honest, clear thought and talk disappeared and the fawning, lying hypocrite appeared with all the criminal instincts. He is still in prison, and is regarded with much suspicion by the keepers.

While these may be considered extreme cases, they are types of an unknown state, following the use of morphia. I find from inquiry that morphia criminals are regarded as the most dangerous by police authorities. They have full control of their nerves at times and can act a double part so clearly as to disarm suspicion. Such cases are bold, defiant, and adroit, and possess a rare power of deception entirely foreign to other criminals. This is sustained in the ordinary medical treatment of such cases. The cunning deception and the unconscious reasoning and concealment of their plans and motives, seemed to point to some local palsies of certain brain functions. Where a patient is suffering from withdrawal symptoms, and suddenly becomes cheerful, and quiet, and is loud in his protests against the suspicion of having used any morphia, some condition of psychic palsy exists. Innumerable instances of the most cunning intrigue and seductive falsehoods are common in such cases. They act and talk with the certainty of truthfulness, and seem unconscious of the deceptions they practice.

One such case was detected by examination of the urine, finding morphin reaction. For a long time it

was impossible to detect where and how the drug had been procured. The woman's earnest, emphatic denials were clearly impossible to a normal mind, and showed some obscure palsy of the higher centers. Yet during this period she went about in her usual way. She was a most earnest, praying Christian, whose high ideals of truth and honesty were beyond question or suspicion. This case aroused some bitterness among her friends. Her husband and family could not believe that it was deception, and when the morphia reaction was shown, thought it a fraud. She finally went to a secluded place in the country and after a time the morphia reaction symptoms appeared. Then all her former self-possession and boldness disappeared. She became very penitent and was a different person in every way. The mystery of this deception was called by the clergyman, "A possession of the Devil." It was a trance state, literally, in which reasoning and consciousness of her relation to others was suspended. Her mind was concentrated on procuring morphia and concealing it from others. This dominated every other consideration and was probably a sacred duty to be carried out above every other thing.

In the history of the two swindlers, the morphia roused a mania for deception and double life. The gain which they procured was of minor consideration, but the greatest pleasure was in taking advantage of the credulity of others. In one case the confusion and mystery which followed the deception seemed to be the most enjoyable part. They would stand around and talk about the act and show sympathy with the sufferers. In another case after changing his dress, and appearance, the morphinist would appear and show great interest about the act. I can not find from inquiry any cases where capital crime was committed in this morphia state. Thefts, swindling, and general falsehoods, with concealment of motives and conduct, seem to be the most common.

I have met with two cases where a will mania followed. Both the persons, men of some property, made from seven to eight wills a year for several years. These were concealed, and on the death of one this was brought to light. The other recovered and ordered them all destroyed.

The cunning, skill and ability shown in the deception must apparently be based on the dominance of the idea as true and real. No shadow of the real condition or the danger of exposure was apparent. Each case acted only as persons do who are fully possessed with the honesty and reality of their notions. A noted physician under my care displayed extraordinary deception to conceal his real condition and was fully unconscious of his acts or the consequences. Even when he was convicted of his deception, he seemed roused to greater efforts for concealment. No reasoning or counsel could displace the mania for deception. On other matters he was in no wise disturbed mentally—reasoning and acting with excellent sense and judgment. He could discern motives and deceptions in others, but was unable to realize his own condition. When morphia was removed this changed, and he realized and acted differently.

In another case, a man of noted honesty and strong character denied all use of morphia and when a quantity was found on him he persisted in explaining it in the most adroit way. He seemed actually to believe his own statements and could not be convinced otherwise. The foolish deceptions of alcoholists are quite different. They display a consciousness of their real condition and the concealment they are practicing. All morphinists do not exhibit these special phases, like alcoholists. They

are weak and childish in deception and show by their conduct a consciousness of their real condition and the efforts to cover it up. But these cases differ in thought and act, appearing to be thoroughly impressed with the idea of the correctness of the act and unconsciousness of the deception and danger of exposure, at the same time using wise precautions to make the act appear real. Two of these cases seemed to realize the danger of exposure in the unusual precaution to make their conduct appear honest. With this was a perfect self-possession and command of themselves. It was noticed that they took morphia frequently in small doses. When the amount taken was followed by the symptoms of narcotism they disappeared, and remained in bed until the effects wore away. This state has been noted in long intervals in other, less prominent cases. A physician displayed great harshness to his patients and family at times, then he would recognize it and be very penitent for his conduct. On one occasion he drove his wife away from the house, and two hours later went after her, showing great tenderness. This was not a so-called mania seen in alcoholics, but a calm, reasoning, morbid impulse, carried out deliberately and with every appearance of sanity.

In a case in which I was called in consultation, a delusion of sudden death appeared at stated intervals. The patient demanded most unusual preparations for a death-bed scene. Clergymen were called, and a large family gathered to witness his exit. Finally a slight interval of sleep would bring a change and a desire to live again. This was not a hysterical and emotional state, but a calm, reasoning, hopeful interval of several hours. He gave no signs of mental disturbance nor seemed unreasonable in his thoughts or conduct. He was known as a moderate user of morphia, and was never seen stupefied by its results. He was under treatment for its removal by the family physician, and was secretly using it when these trance periods arrived. He had only a faint recollection of these events after, and attempted foolish explanations, showing he did not realize his condition.

In another case, after using a certain amount of morphia, a quiet, unassuming dentist became a strong religionist. He would march with the Salvation Army and make eloquent prayers and exhortations. This would last for several days, then he would relapse to his former quiet life. In this religious period no signs of mental failure or weakness appear. He seems every way clear, sensible, and earnest, and explains his change of conduct in the most plausible way. These cases illustrate the mental state which I wish to make prominent, and which I believe occurs more frequently among neurotics of the higher classes—persons with culture, and more than usual mental development. They are called by detectives "dangerous first-class criminals," where detection only follows the limitation or withdrawal of morphia. The confinement of such a person for a few days, with removal of all opportunity for procuring drugs, reveals their real condition. This condition resembles reasoning mania, only the usual signs of mental defects are wanting. There is mental calmness and self-possession, and the brain operations seem clear and rational. The strange acts and conduct are explained with a conscious honesty that is convincing. It would seem that a new personality is involved, and that new ideas or motives take full possession of the mind, and all other conditions and surroundings are ignored. Yet, with this appears the unusual cunning to make the act a success.

In a recent murder trial, a morphinist who had evidently been associated with the crime in some indirect way displayed masterly ability in the explanation of his

conduct. He shed tears and created a strong feeling that he was the victim of deception by others. After the trial, the facts of his complicity came out, but he continued indifferent. He, no doubt, actually believed his own statements, and used cunning measures to make them appear true. A man under observation has on several occasions sent startling telephone news which was false. He has defended his acts with unusual plausibility and his associates believe him. He is an editor of ability, and a user of morphia. The same apparent notion of enjoyment in the emotion produced by such news was possible. He talked of this false news, and seemed as startled as others at the time. He is under medical care, although working at home daily.

There are no theories to explain this condition other than some obscure palsy of certain brain-centers, which breaks up the consciousness of right and wrong, or suspends reasoning on the nature and consequences of acts. It may be a state of local poisoning which centers in some psychic function, giving prominence to some idea and defending and explaining it with all the force of a normal brain. The usual efforts to explain and defend acts committed when under the influence of alcohol and opium are so obscure as to carry their own refutation. The morphinist in this state, as long as he can secure a sufficient amount of the drug, makes few mistakes and shows no weakness in making his position and conduct clear and sensible. There may be many inconsistencies and acts not common to the average man, but he has no difficulty in explaining them to his apparent satisfaction.

The clinical fact that I wish to make prominent is that in certain conditions of morphia addiction a new personality appears—some psychic trance state, in which great mental clearness, self-possession and cunning, with unusual frankness and candor, are the prominent symptoms.

Criminal acts and purposeless deceptions are common. Forgery, swindling and manias for certain acts, and adroit concealment of them have appeared so far. In the court cases no study has been made; the only recognition is that they are most dangerous criminals because of their superior capacity to lie, steal and cheat, because they appear to be honest and have no conception of the nature of their acts. In the medical cases no one has studied this symptom of deception. It is even doubted by some persons whose experience should have taught them differently. It is a distinct pathologic condition, which may be understood, and is the most significant of the brain defects and degeneration. It is only a step from childish falsifying to criminal acts, and on to more serious symptoms.

Morphin may be said to cultivate the crime instinct; at all events, it prepares the way to certain criminal acts, which often have some previous predisposition. The perversion and damage to the higher centers which govern the ethical relations of life are always associated with morphinists. The criminal side of these cases is the psychic wreckage of the criminal relations of the higher operations of the brain. The criminal who is a morphia taker is such a wreck. No exhibition of mental power and acuteness in such cases is evidence of sanity.

Again I wish to emphasize the need of exact study of these cases, of the delusions, of the manias, of the strange symptoms of strength, cunning and weakness, and indicate the possibility of medical means for relief. The criminal side of morphia cases is practically a sealed book, awaiting psychologic research and study, and promising a new field of the most practical facts.

RATIONAL TREATMENT OF CHRONIC MORPHINISM.*

BY AUSTIN J. PRESSEY, M.D.
CLEVELAND, OHIO.

I submit for your consideration a method for the treatment of chronic morphinism which has been, in my hands, very satisfactory, both to myself and patients. The principal advantage to be derived from this method of slow reduction is the lessened amount of discomfort to the patient. Usually there is no pain or diarrhea, no vomiting, no profuse perspiration, no extreme nervousness, and never anything like a state of collapse; in fact, there are none of the severe symptoms, such as described by those who have written on the subject of chronic morphinism.

It is a most barbarous thing to suddenly withdraw the morphia, as in the method described by Levenstein, and now called the Levenstein method. A patient with knowledge of the symptoms which follow the sudden withdrawal of morphia who would then have the fortitude to place himself under that form of treatment, certainly must have the courage to face any event that one is liable to meet with in this life. The modifications, as described and practiced by others who have withdrawn the morphia more gradually, but yet have minimized the dose in advance of restoration of the nervous system, seem almost equally severe.

Erlenmeyer says that the sum of the suffering from the gradual reduction more than equals the suffering of the sudden withdrawal. While, perhaps, this is true with a fixed rule for reducing the quantity of morphia so much for each twenty-four hours, or if the reduction is conducted on any plan that reduces the dose before the patient is prepared for the reduction, it is not true if the reduction of the amount of morphia is made only as the condition of the patient is so improved that his necessity for the drug is lessened to the extent of the reduction made.

I always endeavor, and in 90 per cent. of the cases I am successful in so far restoring the nervous system to its normal condition in advance of withdrawing the morphia that the amount withdrawn is not discovered by the patient. I never withdrew the last fraction of a grain until the quantity used is so small that the patient is unable to tell the day he took his last dose. It is easily understood that the nervous system is in a most unfavorable condition for recuperation while the patient is suffering for want of morphia. He can neither eat nor sleep. He can not rest easy in any place or position. The effect of any drug that may be given him as a substitute, or to quiet him while withdrawing the morphia, is equally as bad and may be worse than that of morphia itself.

Nearly every patient, when he presents himself for treatment, is taking more morphia than he requires to make him comfortable. Some take two, three, or four times as much as needed. This surplus can at once be withdrawn and the patient feel and be the better for it. When the largest amount has been withdrawn that can be and still leave the patient quite comfortable, then the reduction must cease until the system has had time to adjust itself to this new condition of things. With this lessened amount of morphia the secretions become more active. The appetite improves; sleep, while not so profound, is yet more refreshing; in fact, every function of the body approximates a more normal con-

*Presented to the Section on Neurology and Medical Jurisprudence, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

dition, except it be the heart. The heart, which has for perhaps many years been constantly stimulated by the use of morphin, now becomes weak and fast or irregular. However, this symptom will soon pass away under the influence of small doses of strychnin or hydrastin. In a few days the system will have so far accommodated itself to the lessened amount that another very small reduction can be made. This and all future reductions should be so small that the patient is unable to tell when they are made.

The first point that I wish to emphasize—the real key to success—is to keep the patient on just as small a quantity as is compatible with comparative comfort, and yet not to get his dose so small that he will be in misery before the next regular hour for morphin. A patient should feel almost perfectly comfortable, so far as morphin is concerned, for three or four hours after getting his dose. I give the morphin four times a day, at 7 a. m., 12 m., 5 p. m. and 9 p. m. I divide the time in this particular manner for the sake of giving the morphin just previous to meals and bedtime. Patients will eat and sleep much better thereby. It is useless to ask a patient to take nourishment when he is needing morphin, and no one thing is more essential to an easy and rapid recovery than a good appetite. There are no drugs that can compare with plenty of good food and sleep to restore the nervous system, and the patient can neither partake of the one nor secure the other when too much of his accustomed amount of morphin has been withheld.

Erlenmeyer condemns the gradual reduction severely. However, it is evident from his description of the symptoms that, while the reduction extends over three, four or more weeks, the reductions have been made in advance of recuperation. He says that during reduction patients cannot recuperate, and convalescence is very tedious. This certainly has not been my experience. I have recently discharged two patients, one of whom was taking eight to ten grains of morphin a day when he came to me, and weighed one hundred and twenty-seven pounds. He was under treatment two and one-half months. On the day he took his last dose of morphin he weighed one hundred and forty-nine pounds. He remained with me two weeks after the morphin was entirely discontinued and at the end of that time weighed one hundred and fifty-four pounds—a total gain of twenty-seven pounds, and he never felt better in his life. The other was a man 51 years of age, who had taken morphin for fifteen years, and for a number of years had taken as much as twenty-five or thirty grains per day. There was only one night during his treatment that he did not sleep well. He ate well after the first week's treatment. He was with me four months and had increased in weight twenty-four pounds.

These are exceptional cases, but the majority will improve more or less in weight during the stage of withdrawal, and four out of five patients say that they feel better during the treatment than while taking morphin *ad libitum*.

Perhaps there is no way in which I can better illustrate the method than by giving a condensed report of a case. Mr. T. B., aged 26 years, married, general health fairly good, bowels badly constipated and appetite poor, had used opiates six years. The first three years he smoked opium; the last three he had used morphin, and was using from twenty to thirty grains per day hypodermically when he came to me for treatment. I ordered

B. Strychnin	gr. $\frac{1}{4}$	016
Hydrastin, hydrochlor.	gr. vi	39
Sparteïn sulph.	gr. iii	195
Atropin sulph.	gr. $\frac{1}{6}$	01
Aqua	ʒ i	31 10
M. Sig. Twenty minims hypodermically four times a day at the same time morphin was given.		

I also prepared a solution of morphin containing thirty-two grains to the ounce, or one grain in fifteen minims, of this solution I gave him thirty minims, or two grains four times a day. Finding that he was very comfortable on this amount, I quite rapidly reduced the quantity of morphin until, twelve days after commencing treatment, he was taking fifteen drops at a time, or one grain four times a day. Seventeen days later he was taking ten drops or two-thirds of a grain. Up to this time I had reduced the amount of the solution given, one drop at a time whenever a reduction was made, but to reduce one drop now would mean one-tenth of the whole, and he would feel quite perceptibly the loss of that proportion, so I prepared another solution of one-half the quantity of morphin—one grain to thirty minims—and gave him nineteen minims, nearly twice the quantity of the solution. I then very gradually reduced this quantity one minim at a time, and only as that could be done without his knowledge, for no progress can be made while he is suffering for the want of morphin. March 1 he was taking four minims, when the morphin solution was again reduced to one grain to sixty minims, and of this seven minims given at a time. Again the quantity was reduced as before until March 14 when he was taking three minims at a time. A solution was then made containing one grain to 120 of water, and five minims given. The quantity was then reduced to three minims on March 17, when a solution containing one grain to two hundred and forty of water was made and five minims given; and reduced to three minims on March 20. At this time a solution of one grain to the ounce was made, and on March 25 he was taking four minims or 1/120 grain. This was the last day that he took any morphin, three months from the day that he came for treatment. His improvement in flesh and appearance was constant while being treated. He was uncomfortable only a few times during the entire period; at such times I always gave him enough extra morphin to relieve him.

This I consider an important factor. The physician must have the confidence of his patient. Unless the patient can feel sure that he can get morphin when he asks for it, he is sure to imagine that he is badly in need of it much of the time, when otherwise he will feel fairly comfortable until the regular hour for taking it. Many times a patient imagines that he requires morphin when a syringe of water will do as well. One has to study each case and be constantly on guard that he does not give morphin when water would do as well. Some patients are continually asking for extra hypodermics, and water will satisfy perfectly.

One who treats morphin has no time for other practice. He must devote his entire time to his patients. I never leave my patients with a nurse for a few hours that some or all of them do not require more morphin than they would if I were with them. On the other hand, be as careful as possible not to make mistakes and give water when morphin is required. The patient gets nervous, becomes irritable, does not eat and loses sleep unless the error is rectified in time. There is no disease with which I am acquainted that requires the constant study and watchfulness that morphinism does. Patients can seldom be treated successfully at their homes; gen-

eral hospitals or sanitariums, for obvious reasons, are not good places to treat this class of patients. The most suitable place to care for them is in institutions devoted exclusively to that class of work, where physicians and attendants can constantly have an eye on each patient in the institution. So far as medicine is concerned, no fixed formulæ can be given, every case is a law unto itself and must be treated according to its particular condition and requirements. The one thing that is to be done in every case is to build the patient up physically, improve the general health just as much as possible. Give general tonics, heart tonics, nerve tonics, according to indications. Keep all the secretions in a condition as nearly normal as possible, and look well after the condition of the stomach. When the quantity of morphin has been reduced to a very small amount, or, in some cases after it has been entirely discontinued, the patient will have a better appetite than digestion. A little care should then be exercised that easily digested food is used.

Baths and massage are beneficial in many cases. Often a hot bath at bedtime will secure a good night's sleep. In others dry heat will be more successful. The more exercise one takes, the more morphin he will require, therefore, where it is desirable to get rid of the morphin as soon as possible, the patient should take little or no exercise. In the treatment of about two hundred cases upon the above plan, my experience has been that in direct proportion to the success that I have had in recuperation previous to the reduction of morphin, has been the lessened amount of discomfort to the patient, and in the cases, only, that have shown little tendency to recuperation in spite of all efforts has there been sufficient discomfort to be worth mentioning.

900 Fairmount Street.

PERSISTENT PYORRHEA.*

SOME POINTS ON ITS ETIOLOGY, PATHOLOGY AND TREATMENT.

BY GEO. T. CARPENTER, M.D., D.D.S.

CHICAGO.

It is not my intention to give a new name to the so-called pyorrhæa alveolaris, but to call attention to that class of so-called incurable cases of pyorrhæa in which, after all efforts at treatment on the part of both practitioner and patient, pus continues to ooze from the pocket. I do not wish to be understood as including in this class the teeth that are ready for the forceps, having lost two-thirds or more of their natural support, but teeth that in the judgment of the operator should be saved, yet do not yield to his attempts to eradicate the disease.

The one word that covers more than any other in the handling of pyorrhæa is thoroughness; thoroughness in diagnosis, thoroughness in mechanical and surgical procedures, and thoroughness in all subsequent treatment. It is very generally known and accepted by most practitioners that the extraction of any tooth affected by pyorrhæa will in time result in a permanent cure of the disease. It has also been repeatedly demonstrated that, in the majority of cases where pyorrhætic teeth have been extracted and thoroughly cleansed of deposits, and the roots trimmed, removing all roughened parts, also pulp removed and canals filled and then replauted, such teeth grow firm, and pus and pockets are not present. There must be some good reason for this changed condition,

and I am convinced that this change is brought about by removing the exciting or irritating cause. I do not wish to be understood as not believing in constitutional predispositions to pyorrhæa. I do believe that cachexia, in some cases, will render pyorrhæa incurable through malnutrition. But even in this class of cases we must not lose hope. Do something, and do it with thoroughness; break up the sameness of life; change the conditions. Tonics and alteratives are valuable, especially rest, sunshine and fresh air; also constitutional treatment for syphilitic or other taints may prove very beneficial. But the exciting causes are by far the most common and will be the principal theme of this paper.

There are three points in the irritating or exciting causes of persistent pyorrhæa to which I wish to call attention: 1. The failure to reach, recognize and remove deposits. 2. Infection, indefinitely continued from septic pulp. 3. Decalcification or molecular change in cementum and dentine.

The causes of failure in removing deposits are twofold: 1, a failure to locate the deposits; and 2, a failure to reach the deposit with any set of instruments now on the market. In pyorrhæa cases, that have received previous treatment, and where pus is still found present, we should make a careful differential diagnosis between deposits, pulp infection, and roughened spiculi. To aid in this work I use a 5 to 10 per cent. aqueous solution of cocain on cotton, pack it firmly into the pocket and allow it to remain for fifteen or twenty minutes, then protect the parts with a napkin, dry the surroundings and carefully remove the cotton, holding the mouth mirror in position so as to see all parts of the pocket the instant the cotton is removed. In cases where a better view is required pack with antiseptic gauze, and allow it to remain two or three days. If deposits are seen remove them if you can.

To insure success in removing deposits I use a pyorrhæa model of thirty-two natural teeth set in rubber tubing, and arranged in upper and lower sets in an articulator with a heavy rubber band in front, which acts as lips, and all tooth surfaces and pockets must be reached through the rubber lips. By fastening this model to the head-rest of the operating-chair, an instrument can be readily fitted by using annealed stovepipe wire, one and one-half to two inches in length, in a socket-handle. Flatten the point of the wire and bend it so as to reach the required spot or surface; then bend or make an instrument of the same angle, with a spoon-shaped point, and with it remove the troublesome deposit. I have a set of twenty-four special shapes, but I find cases where it is necessary to change the angles of these instruments in order that the spoon point may rest at the proper angle against the affected surfaces. In this way any deposit in any location can be reached and removed. The instruments should be kept sharp for this work, and the pull motion should be used, as with the push motion there is danger of dislodging and forcing a scale of calculus into the tissues, where it will be difficult to find it, and if not removed it will again become attached and the disease will continue in a more aggravated form.

The rough deposits can be detected by the tactile sense, but the hard, smooth, or glazed deposits can only be detected by actual sight. A true alveolar abscess does not discharge pus through a pyorrhæa pocket. But it is not uncommon, as a result of encroachment of pyorrhæa at the apex of a root, for inflammatory action to cause the death of the pulp, which becomes infected, and in turn will reinfest the cleansed or treated pockets, and this state of affairs will continue, or be repeated, until

*Presented to the Section on Stomatology, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1898.

the pulp is extirpated and the canals antiseptically cleaned and filled.

Circumscribed abscesses may be the result of incased deposits caused by some local irritation, and swelling that forms a barrier to the free escape of pus. From experiments which I have been making on rabbits I find that after infecting a fresh wound in the gum, with pyorrhea or other pus, the parts will continue inflamed from two to four days, and then rapidly heal, but by putting a rubber band around the tooth and pressing it under the gum and allowing it to remain, and in this way establishing a pocket, and then infecting this wound with pus from pyorrhea or chronic ulcer, you will establish the disease, which will be self-sustaining.

There have been experiments made in the human mouth where the teeth have received little or no care, but where there was no pyorrhea present, with similar results as in the rabbits, but there was a tendency to outgrow the disease without treatment; but with treatment the cases yielded quickly and a cure resulted. I think that in these cases the condition of the system was such as to resist disease, and re-establish health, and also that the exciting cause was not continued long enough or to the extent where we have deposits or other causes named in this paper.

From recent examinations for a specific alveolar pyorrhea bacillus, from cultures infected by pus-germs taken from pyorrhea pockets, a competent bacteriologist¹ has thus far been unable to find bacilli that are not found in pus from other infected traumatizations of the mouth. Yes, we mean traumatism, the same as an infected condition from a sliver in the flesh, and that is the condition that we have in pyorrhea alveolaris, with the same results becoming chronic from long standing, as fistula, ulcers, etc., in other parts. The condition of the apex of the roots of some teeth will remind one of a condition known as absorption, and is generally acknowledged as such. But can tissue be absorbed and still remain as debris in the pocket? Such is the condition found in pyorrhea pockets, which can be easily proved by taking the contents of a pocket, dissolving it in hydrochloric acid, then adding three times its bulk of water; filter, boil, and when cold add a solution of ammonia, which will precipitate the phosphate of calcium². The same result is attained by rinsing a freshly extracted roughened pyorrhea root in cold water, then with a stiff brush and water brush the roughened parts and put the resulting product into a test-tube; add hydrochloric acid and water, if necessary; filter and boil, and to this add a solution of ammonia, and the lime salts are precipitated. The decalcified cementum and dentine, through their roughened surface, spiculi and debris, act as irritants to the already inflamed tissues which are in the depth of the pocket, and as a result pus will continue to flow. Many teeth affected with pyorrhea may have a pocket only on one side of the root, leaving the three remaining sides healthy. Other teeth may have only one root affected, and the other root, or roots, as the case may be, are in good condition. To illustrate, I will cite some persistent cases from practice:

CASE 1.—Mr. G., about 30 years of age, was employed indoors at very confining work. The color of the skin and mucous membrane would suggest anemia. Lacerations or injuries to soft parts are slow to heal. He had very serious trouble after the removal of an impacted

third molar. In 1898 I made an examination of his mouth and found the right upper central and left lower central affected, having deep anterior pyorrhea pockets, with a profuse flow of pus. I gave both cases thorough surgical treatment, which consisted in the removal of all deposits and the curetting of pockets and margins of the process. I then filled the pockets with iatrol which had been moistened with equal parts of oil of cassia and carbonate of creosote, and painted the gums with tincture of iodine, repeating the iodine treatment about twice a week³. He derived little, if any, benefit from this treatment. I then put the patient on tonic and alterative treatment, and in about three months the pus in the pocket of the upper central disappeared, and the pocket closed. About this time I drilled into the lingual surface of the lower central and found the absence of the pulp. I used thorough antiseptic treatment of the canal and filled the same with chloral percha and guttapercha points. Treatment was continued from once to twice a week for two months longer, but pus still persisted. In June I examined the apex of the root and found it denuded and roughened. I amputated the lower fourth of the root and rounded the stump, and the soft parts healed kindly under antiseptic treatment, and no pus has been present at any time since the operation. The gums are not yet entirely restored, but the tooth is doing good service.

CASE 2.—Mr. H., about 50 years of age, has given his teeth considerable care, and, I think caused pyorrhea from the injudicious use of a wooden toothpick. He had several teeth affected by, and treated for, pyorrhea during the last ten years, and in all but two cases a cure had been effected. In June, 1898, he was referred to me by a brother practitioner, and on examination I found the upper right second bicuspid, and first and second upper right molars, also the interproximal space between right lower second bicuspid, and first lower molar, also lower central on same side, diseased. He had an old chronic pocket on the anterior root of the left lower first molar. This tooth and the first upper molar on the opposite side had been treated by a good dentist and given up as hopeless about eight years previous, and the patient was instructed to use a syringe with an antiseptic to keep the pockets clean, as the best that could be done for them. I gave the usual surgical treatment, as in the former case for the four other teeth, which yielded readily and where a cure was affected. At my solicitation the gentleman allowed me to experiment with the two chronic cases. On examination I found the pulps dead in both teeth; they were removed and the canals filled. I then gave them both a most thorough surgical treatment, which resulted in the almost entire cessation of pus for a short time, but the old condition was resumed. I re-examined the pockets for the cause, and continued antiseptic and stimulating treatment until September, when I considered the cases hopeless and decided to amputate the roots. In the upper molar I removed the anterior buccal root. The soft parts closed up and yielded readily to treatment and we have not had the appearance of pus up to the present time. After becoming satisfied with the result obtained in the upper molar, I amputated the anterior root of the lower molar, with similar results. The teeth are now doing good work with an absence of pus. The roots were found roughened, with slight nodules of cementum around the apices, showing Nature's attempt to recalcify and thus produce a cure.

¹ The author of this experiment will give a full report of his work on pyorrhea bacilli as soon as he completes his course of experiments.

² Atfield's General Medical and Pharmaceutical Chemistry—Calcium Reaction.

³ Talbot: Pyorrhea Alveolaris. International Dental Journal, April, 1896.

Many other cases could be reported to show the success following the thorough removal of the cause for persistence of pus in pyorrhea, which to my mind proves the local character of the disease, and shows that malnutrition plays but a small part when the actual irritation is removed.

103 State Street.

THERAPEUTICS OF INFLAMMATION.*

BY WARREN B. HILL, M.D.

Professor of Materia Medica and Therapeutics, Milwaukee Medical College; Professor of Therapeutics, Dental Department, MILWAUKEE, WIS.

This subject would indicate a paper of wide scope and the consideration of a matter which has often been thoroughly aired and discussed. I do not wish, however, to weary you with any generalities, but rather to take up some forms and conditions of inflammation which will interest you as dentists, as well as practitioners of medicine. As was suggested here last year, there is a common ground upon which dentists and doctors may meet, and the therapeutics of inflammatory conditions about the mouth, though a place oftentimes studiously avoided by both professions, should be cultivated in common by both.

I do not wish to enter into a controversy as to the definition of inflammation, but will merely state that my remarks have to do more particularly with the pathologic condition characterized by an exaggeration of physiologic function in which engorgement and pain are the two characteristic symptoms. The rational treatment for all inflammatory processes is to remove the cause, if possible. This usually takes us into the field of surgery, as nearly all the inflammatory processes are of bacterial origin, but there is still left for the therapist an opportunity of relieving the pathologic conditions present when the other alternative is not to be accomplished, or during the time when a diagnosis is being made.

Heat and cold are the two remedies most extensively used for the relief of congestion and pain and there has been considerable discussion as to which is the more efficacious for this purpose. When the up-to-date surgeon appears before a learned body of his professional brethren he advocates the use of cold only, as that impedes the propagation of the germs which he assumes cause the trouble. In his private practice, however, he allows the use of hot applications and poultices, because it relieves the pain, and nobody will find out how antiquated his practices are in comparison with his precepts. On the other hand, the empiricist adheres strictly in precept and practice to the use of hot applications, because experience has taught him that they alleviate the two prominent symptoms present—engorgement and pain. For my part, however, it appears that each has a proper place in the therapeutics in inflammation without violating the laws of reason or repudiating clinical experience.

In the first stage in inflammation, when there is dilatation of the afferent blood-vessels and an increase in the rapidity of the flow of blood, cold applied to the part will contract the vessels and prevent the subsequent engorgement, and in this manner pain may be avoided. On the other hand, when the engorgement is already present and blood stasis has supervened, then the application of heat will dilate the afferent vessels, relieve the engorgement and alleviate the pain. This same principle

applied to internal medication will also be useful in the relief of these symptoms.

The immediate indications in the treatment of these conditions are for the relief of pain. In true inflammatory processes pain is caused by the engorgement of the blood-vessels and the impingement of the nerve filaments by the consequent exudate. The rational method, therefore, of relieving it is to reduce the arterial tension. This may be done by dilating the peripheral vessels, either by the use of diaphoretics, cardiac depressants, or counterirritants. Arterial tension is also reduced by the use of hydragogue cathartics, and congestions about the head are particularly benefited by the use of cholagogues. On the other hand, opiates, by checking alimentary secretion and increasing the blood-supply to the head, not only fail to be useful, but are contraindicated, except when given in the form of Dover's powder, which acts as a powerful diaphoretic, and relieves the congestion. In painful affections of an asthenic type, such as in neuralgias caused by faulty nutrition of the nerve-centers, they act promptly and well. In treating inflammations about the mouth I think the following hints will be of service: 1, a powerful purge, such as calomel in 10-grain doses, should be given, followed by a saline cathartic; 2, a coal-tar analgesic acting upon the skin, such as antipyrin in from 5 to 10 grain doses, or, in people of rheumatic tendencies, salol and phenacetin in 5-grain doses, each, or acetanilid and salicylate of soda in similar doses. If, on account of the condition of the patient, these heart-depressing coal-tar derivatives may not be deemed advisable, Dover's powder in 5 to 10 grain doses may be substituted. This treatment is not calculated in any way to remove the cause of the malady, but rather to mitigate the pathologic conditions presenting during the interval between the time of diagnosis and the completion of the surgical procedure. In inflammation, especially in the bony cavities about the mouth, such as pulpitis, this treatment will be found to be particularly valuable, as a considerable time often elapses before an accurate diagnosis can be made. The rationale of this treatment is apparent, as the lowering of the arterial tension by cathartics and diaphoretics not only prevents any further exudate and consequent pain, but also promotes absorption, while the coal-tar derivatives have specific analgesic properties. Illustrative of this point I wish to relate a case:

Mr. X., aged 45 years, laborer, was attacked with severe headache. A physician was consulted, who pronounced it neuralgic in its nature. The patient was told to consult a dentist, who extracted one or two teeth in the neighborhood of the most painful portion of the jaw from which the pain seemed to start. This afforded no relief. The dentist was asked to remove the one remaining tooth, which he refused to do, because it was perfectly sound. He was referred back to the doctor, who was convinced that his diagnosis was wrong and proceeded to treat the case symptomatically, as he had no basis for a diagnosis. Morphine was given in $\frac{1}{6}$ -grain doses, which was increased until the patient received $\frac{1}{3}$ grain in every three hours, the result being that the pain increased to such an extent that he could not lie down at all. At the same time, on account of the soporific action of the morphine, he could not stay awake long enough to stand up. When in this pitiable condition I was called to see him. I made a diagnosis of a circumscribed inflammation within a bony cavity and too much morphine; and prescribed 10 grains of calomel and 10 grains of jalap to be taken in one dose, followed in four hours by one ounce of Epsom salts. The relief

*Presented to the Section on Stomatology, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1898.

as remarkable, and to my mind-strengthened the diagnosis. Dr. G. V. I. Brown was called in consultation, and a careful examination was made. Percussion elicited the fact that an inflammatory process was going on in the pulp of this apparently sound tooth. Dr. Brown removed the cause, and an immediate recovery followed. The conclusions that I wish to draw from this case are:

1. Patients should not be sent from doctor to dentist and back again when a consultation is possible.
2. We should not take such a radical view of surgical procedure as the only method of curing inflammatory processes as to prevent our using all possible means for the relief of the patients during the time when a diagnosis is being made and the surgical treatment instituted.
3. We should not resort to the promiscuous use of opiates or any other analgesic as a temporary measure when the pathologic conditions may be treated rationally.
4. Having made our patients comfortable we should make plenty of time to make an absolute and accurate diagnosis, thereby saving the patient the annoyance of undergoing unnecessary and painful operations and possibly preserving for him his teeth or other necessary organs.

MEDICAL JOURNALISM.*

ITS END AND AIMS.

BY JOHN DUNCAN EMMET, M.D.

Assistant Surgeon to the Woman's Hospital in the State of New York; Assist. Gynecologist St. Vincent's Hospital New York; Consulting Gynecologist to St. Joseph's Hospital, Yonkers, N.Y., and to St. Mary's Hospital, Passaic, N.J.; Fellow of the American Gynecological, the N.Y. Obstetrical, the Woman's Hospital and Celtic Medical Societies; Charter Member of the Periodical International Congress for Gynecology and Obstetrics; Editor and Proprietor of the American Gynecological and Obstetrical Journal.

NEW YORK CITY.

Let me preface my paper with an expression of my deep appreciation of the honor which your President has conferred upon me by asking me to address you. But the personal element in his invitation, however flattering, was entirely overshadowed by the fact that the invitation itself was an evidence that the principles whose adoption by the profession I was perhaps the first to urge, in an insistent and chronic fashion, were to receive the recognition of a public hearing before the representative body of American medical journalists. For your President suggested that I write upon part of the general subject to which my editorials have been devoted.

My paper is not a long one because, not devoted to a scientific subject, it gives no scope for the usual padding of domestic and foreign quotations and references; it is, moreover, upon a theme of such paramount and urgent importance that any save the directest treatment would be inappropriate and nugatory. I have chosen for this dissertation "The End and Aims of Medical Journalism," and I shall endeavor to show that this journalism, if true to itself, can adopt but one End though its Aims may be many.

In the economy of human nature there is a principle to which all of us are at all times subject. It is a necessity of intelligent existence and is called "the law of accomplishment." In every act or series of acts of every man, whether it be to pass an idle hour or the performance of some serious work, there must always be, latent or expressed, one dominant idea—a purpose, an ultimate

object, an end. So complex are we, for the accomplishment of every ultimate object or end one or more subsidiary acts are necessary and the particular purposes or objects of these secondary acts are properly defined, in their relation to the main object, as *aims*.

It is in this sense and thus defined that I would consider the end and aims of medical journalism. It is beside the question to discuss the end and aims of individual journals or the special ideas of individual editors; it is the idea of *united accomplishment*, conveyed by the term "journalism," and its special application not only to medical subjects but to the medical profession, as expressed by its adjective, which shall occupy our attention.

It is not enough to minister to the wants of the profession merely as individual men, for it means little save irony to the average practitioner that he may read of the latest advances in his science if his family be constantly at the starvation point because his profession is powerless to protect him against the rivalry of pseudo-charitable hospitals and dispensaries, legalized quacks and other malignant enemies. To enlarge upon this idea I would say that everything which makes not only for the advancement of scientific knowledge but for the better application of this knowledge in the prevention and cure of disease comes within the scope of medical journalism. But the higher the profession stands as a corporate body in the estimation of the community, the greater must be its influence for good upon the public health. The piping voices of individual physicians can not command more than the passing, casual attention of the body politic or social but the united voice of the medical profession would come as an authoritative, irresistible force. It would be the decision of the supreme court of science, against which there is no appeal.

The end of medical journalism, therefore, must be to strive for the corporate interests of the profession, to struggle to obtain its recognition as a corporate force in fact as well as in name, that thus the public well-being in all that pertains to health, of which the profession avowedly stand as the mentors and arbiters, may be best protected and advanced. Nothing less, evidently, than this idea in its broadest scope can fill the end of medical journalism.

With this end in view, what are the means to be employed in its accomplishment, what are its "indications?" Some of these are self-evident, others are not. If medical journalism is to become the constructor of an united, corporate profession, if hereafter it is to be the defender and the mouth-piece of this great body, it must first construct *itself*; it must subordinate its special, individual interests, when necessary, to the common good and must unite in earnest for the same end and with the same aims. Petty jealousies, born of the fear of competition, and distrust must be put aside. The great journals, of far-reaching influence owing to a larger capital, must not contemn and elbow out their smaller brethren who are conscientiously working, to the extent of their ability, for the same great end. On the contrary, a policy of encouragement and helpfulness is absolutely called for here. And indeed it is needed. No society was ever reformed by those, no matter how well inclined, whose existence was a daily struggle for bare maintenance; it is there we must look rather for a natural resentment against the irony of an undeserved fate. And it is well if, beset as they are by spacious temptations, they maintain the ethical code of their more fortunate fellows. What a parody upon honesty and truth, what hypocrisy, if the great and well-to-do medical journals, preaching altru-

*Read before the American Medical Editors' Association, June 7, 1899.

istic principles and high ideals for the regeneration of the profession, turn in the same breath to their smaller struggling brethren and say: "You are too poor and insignificant to be of any assistance to us" (not to the cause, mark you!); "on the contrary you impede our influence by taking from us a certain number of subscribers who, if you did not stand in our way, would come to us!" Think you that medical journalism will become powerful and united by means of such a policy? And may we expect the editors and proprietors of the smaller journals, who for years have manfully and unselfishly struggled to maintain an ethical standard and to work for the interests of the profession, to be favorably impressed by any plan for its regeneration which involves their own extinction? No, let those of us whose influence is greater win the confidence of those who have less than, recognizing the justice and earnestness of our intentions by the consistency of our actions, they may come in with us and form a strong and united journalism. Then indeed can we successfully crush the mass of unethical, money-grubbing, journalistic small fry, who have so long been a reproach, a hindrance and a pollution to the profession.

I have heard it said that there were too many small journals in this country, that many of them were too poor and insignificant to assist the cause of medical science by the presentation of useful matter; hence, by catering to a cheap and unscientific taste, they degrade the standard of journalism and retard the development of the profession. There is much truth in this complaint, but I do not believe the remedy lies in a policy, on the part of the higher class of journals, of extermination. If these small journals maintain the code of medical ethics they accomplish within their own sphere, even though their taste from a scientific and literary point of view be execrable, what the great journals edited in our great cities can not do—they appeal to and satisfy the taste of a class of honest and hard-worked practitioners to whom a finer and more expensive mental diet, under present conditions, would mean starvation.

This class of men will not subscribe, under present conditions, for the great scientific journals. They are comforted and not abashed to read of the perplexity and ignorance of physicians of their own class and opportunities; their wives enjoy the announcement that "Dr. Smith, in the adjoining county, became the proud possessor, as the journal went to press, of a fine and healthy pair of twins and that the mother is doing well." This supplements the weekly newspaper and the interspersed jokes are not too deep or original to puzzle the fired brain of the physician when he returns to a late supper from professional calls in a thirty-mile circuit. Yes, they supply a demand. Not in contemptuous aloofness or organized attack lies the remedy against this class of journals. On the contrary, it lies in the opposite policy. By encouraging the editors of these journals, whose subscriptions are more frequently paid in chickens and potatoes than in cash, to keep in touch through their exchange lists with the journals of happier fortunes, we will make them realize that they are joined in close brotherhood with those who are ready to share their greater opportunities for the advancement of a united and powerful press. Not long could such influence be resisted; insensibly would the subscriber feel the inspiration and remember the days of the medical college, when he came face to face with the great men of his profession and dreamed that Life held something more for him than hard knocks in her closed fist.

Thus would the regenerative principle leaven the pro-

fession and the idea of union and co-operation become fixed and practical. Medical journals *then* which, through a natural inaptitude or the perverseness of their editors, refused to respond to the new awakening and, not fit to lead still dragged in the wake of their subscribers, would quickly die of inanition.

We who call ourselves the representatives of medical journalism in this country must recognize the fact that we are first called to this responsibility and we can neither ignore nor shirk it. We can not work for ourselves alone nor withhold recognition and assistance in lifting others because we fear to let them stand by our side. There is room for all who in themselves are worthy.

If all medical journals would adopt the motto "When we help each other we help ourselves," would believe it and practice it, there would soon cease to be so great a disparity in the prosperity of equally ethical journals; nor would anyone be less prosperous because another became so. For example, if the medical press would unitedly demand prompt payment from its subscribers, each journal urging this justice not for itself alone but insisting upon the broader principle that *all* medical journals are equally entitled to the support of their subscribers, the great journals, who can afford to be pioneers of reform, would not only benefit themselves but give heart of grace to their less prosperous brethren who do not dare, without such initiative, to demand that which is not only their due but for the want of which their influence for good to the profession is retarded and minimized. Then would enter into the field of journalism the only form of competition which should exist there—the personal equation of editorial ability and conscientious work.

As a beginning or working basis for the union or co-operation of the medical press I believe the following to be essential factors:

1. The formal adoption by an organized and representative body of medical editors of the End or ultimate purpose which I have outlined in this paper; by unremitting dissemination through editorials to inculcate the profession with the idea of union and co-operation; an insistence upon the necessity of this action and an explanation of its urgency and of the immense power and influence which would accrue therefrom; and the financial betterment as well which must be felt throughout its ranks, especially by those who are now struggling with the grim problem of bare existence owing to the unholy competition which is engendered and necessitated by the powerless of our disintegrated profession to protect its members from outside attacks.

2. The prompt and generous response of all journals to the call, by any one journal, for editorial support on any subject which clearly tends to the unity of the profession or its betterment as a whole.

3. The encouragement of medical proprietorship of medical journals and the discouragement of all journals whose policy is not entirely under medical control. Especially does this cause apply to those journals which do not contain editorial comment. They are "dead-wood," so far as the true end of medical journalism is concerned, and must always remain a hindrance and a clog by their immobility.

4. The adoption by all of the principle that medical journals, like other journals, must be paid for *in advance*; the abolition of the credit system and the ruthless cutting off the subscription list of all subscribers who are too dishonest to pay for what they have bought and consumed. The adoption of this principle is absolutely necessary to the existence of independent journal-

ism and the absence of it has been the sole cause of the weakness and insignificant influence of the medical press hitherto and consequently of the segregation of the profession. In order to make this rule effective, so that all may benefit, and none may suffer, it will be necessary that all should enter into a specified agreement. Moreover it will be necessary to force by all legitimate means—and they are many and practicable—those journals whose financial resources are independent of their subscription-lists and who have pursued the policy of long credits for the sake of competition to change their policy and follow our lead.

These cardinal points I believe to be the stepping-stones to an united and powerful press, whose advance in material prosperity and the dissemination of knowledge, in honor and influence, no man can gauge.

When this first aim has been accomplished, when medical editors show an united front and concerted action, we may undertake the next with full surety of accomplishment. This is to awake the profession to a realization of its corporate needs, to point out to it not only the benefits which must accrue to it, individually and collectively, by union and co-operation, but to convince it that only through these means can the elements of disintegration within itself be counteracted and even the existence of its influence for good be maintained.

We can further show how necessary it is to increase and to exert this good influence, until it shall become a controlling one, upon everything which ministers and is necessary to the dissemination of medical science and its application to health and disease.

There are several trades which are entirely dependent upon the profession for their existence. They live by us and yet here, in reversal of all laws of trade, it is the supply and not the demand which governs the equation. Large profits have been made in each of these trades at the expense of the profession; yet all the benefits have gone to enrich the producers except in so far as competition, regulated not by our demands but by themselves, have worked in our favor.

First in order of these is the medical book trade. Absolutely necessary as medical literature is to the medical man, its quality and quantity are entirely outside his control. Representing as a medical book does to its author the arduous and difficult work of years and of incalculable benefit as it frequently is to the whole world, he rarely receives from his publisher more than a pittance in comparison with the compensation of the lay author. The profits from its large sale enrich the publisher, while the medical author is expected to be content with the personal advertisement and increase in practice.

Let us take next the manufacturers of medical instruments. Here the case is far worse. No matter how much time, labor and experience an instrument has cost its inventor; no matter how valuable and even necessary its use may be in a large field of work; no matter how great and profitable its sale, its author receives his compensation again in notoriety and honor, while to the manufacturer go the financial benefits. When once the model has been given to the maker of instruments, its control passes out of the surgeon's hands. It is generally materially altered, after a varying period, to suit the exigencies of trade and a so-called improvement made by an irresponsible and usually ignorant person is expected to give another boom to its sale. In this way the most valuable instruments have passed out of their author's recognition and their usefulness has been entirely destroyed. There is no protection and no redress.

In the drug trade we find a similar state of things. The interests of the physician are ignored on all sides. Many of the most valuable preparations are proprietary while, owing to the evil of "substitution," he can not even be certain that his patients will obtain the medicine which he prescribes. Patients can procure drugs of all kinds without prescription and the retail druggist does not even hesitate to usurp the physician's rights and prescribe. The daily press teems with advertisements of drugs and remedies for every form of disease, the inducement to buy which is that thereby a physician's diagnosis and prescription are rendered unnecessary. Thus the profession can protect neither itself nor others.

In the necessary process of regeneration the profession will realize the importance and the justice of taking under its own control and regulation the output of all trades which are dependent upon it. It will thereby secure a more equitable division of the emoluments, great abuses will be remedied and the benefit conferred upon itself and on the general public will be incalculable.

Until very recent years, the end of medical journalism in this country was that of all commercial enterprises—money-making. It was entirely in the hands of the publishers of medical books. The means they employed for the accomplishment of their end were undoubtedly of benefit, if only a partial one, to the profession, in that they supplied medical literature which the profession could not or would not supply for itself, but the greater interests of the profession, its dignity, its immense potential influence, its opportunities for greater prosperity and power were never touched upon—as how could they be?—and the profession has slumbered on or quarreled and fought, taking its pap contentedly from whatever careless hand would give it.

But to-day, when medical journalism is coming rapidly into the hands of medical men, its end and aims have changed. We will no longer feed the profession upon pap with a medium of soothing syrup; we will say: *Stand up and feel your limbs; they are massive and strong. Here is a man's food; feed yourself.*

For we are not hirelings; and the interests of the profession are our own interests.

RECENT BACTERIOLOGIC RESEARCH.*

ITS EFFECTS ON MODERN SURGERY.

BY JAMES J. CLAUSEN, M.D.,

Instructor in Pathology and Bacteriology, Kansas City Medical College;
Pathologist to the Kansas City, Fort Scott and
Memphis R. R. Hospital.
KANSAS CITY, MO.

The prevention of infection and the securing of ideal aseptic healing of wounds inflicted by the surgeon's knife being almost entirely a question of mechanics, many physical difficulties have become familiar to us. We have learned to mistrust the efficiency of antiseptics and have become aware of their toxic and devitalizing effects upon wound surfaces. Fortunately, bacteriologic experimentation has been revolutionized, and led to more reliable results, owing to the recognition of the very different behavior of bacteria in test-tubes and in wounds. With the inauguration of aseptic principles by Neuber, Bergmann, Schimmelbusch¹ and a host of others over ten years ago, the perfection of simplicity seemed within reach. And yet, while in our days, phlegmonous inflammation, erysipelas, tetanus and malignant edema following operations are almost unheard of, we not infrequently see a

* Read before the Missouri State Medical Association, at Sedalia, May 17, 1899.

stitch-abscess, an escaping ligature or a local suppuration interfere with the ultimate cure for which the operation was undertaken.

Of the four sources of infection, only one has been satisfactorily eliminated by boiling or steam sterilization. I refer to instruments, ligatures, sponges, dressing material, etc. The remaining three sources—the air, the surgeon's hands and the skin of the patient—are still with us. To prevent infection from the air, it is well to have the operating-room well ventilated, and then thoroughly closed a short time before the operation, and every one entering the room should wear a sterilized gown. The shoes take a not inconsiderable amount of dust into the room, which dust is liable to be deposited upon the wound; to avoid this, some advise the use of rubber overshoes, moistened with bichlorid solution, on operator, assistants and spectators.

A much more fruitful source of infection than dry dust is the bacteria thrown into the wound enclosed in minute droplets of moisture from the mouths of the operator and assistants. Tyndall's² experiments seem to show that air, quietly expired from the lungs, is practically free from microbes. Flügge³, however, has proved that numerous and often virulent microbes exist in the air expired during the acts of speaking, coughing, sneezing, etc. This virulence is due to their existence in a moist state, ready for immediate reproduction, while those in dry dust require a period of incubation. Silence while operating is the best preventive against this accident, but when one considers the prevalence of "catarrh," it may perhaps be wise to wear a mask consisting of two layers of fine mull, as devised by Hübener⁴, and also a protection for the beard and hair. Nutrient plates exposed for ten minutes to air expired from a man talking without a mask have given 100 to 600 colonies, while with a mask the colonies varied from 0-1 or 2, or exceptionally 10-20.

Recently, Gottstein⁵, in Mikulicz's clinic, has shown that it is impossible to render the hands bacteriologically sterile by any present known method. He found that hands apparently sterile, immediately after disinfection, were often not sterile soon afterward, and never sterile at the end of an operation. Pyogenic organisms were often found among the colonies. These experiments led to a technic in which no brush was used twice without re-sterilization, and each individual had his own supply of alcohol, lysol or bichlorid. The finger tips were dipped in strong Tr. iodine, and during the course of the operation, the hands were frequently antiseptized. Finally, in the same clinic, the superior asepticity of sterilized thread operating-gloves, changed frequently during the work, was demonstrated beyond a doubt by means of a large series of culture-tests, but whether they should come into general use in aseptic work, remains to be determined, as they are a hindrance to delicate manipulations. At present, many of the world's best surgeons are making use of them.

In view of ascertaining to what extent the last source of infection—the patient's skin—can be overcome, Lowenstein⁶ in over 100 cases placed small pieces of disinfected skin into culture-media at the time of operation. He obtained absence of growth in 40 per cent. Lockwood⁷ and Samter⁸, similarly, but at times dividing in smaller particles, found absence in 30 per cent. Gottstein⁹, in a much larger series, by scraping the excised piece, using three sterile knives, and planting separately, superficial, middle and deep layers, found absence of growth in only 20 per cent. The deeper layers most frequently contained microbes, consequently disinfection is seldom if ever ob-

tained. Not only the deeper layers of epidermis, but hair-follicles, sebaceous glands and even the lymph-spaces of the true skin often harbor microbes. Formalin wet dressings changed every six hours for twenty-four or forty-eight hours previous to operations seem to have given the best results. Fortunately, the ordinary skin bacteria are not of a very pathogenic nature, the staphylococcus albus, the cause of stitch-abscess, being most frequently met with.

Hægler¹⁰, of Socin's clinic, found that sutures and ligatures from stitch-abscesses often gave negative results from culture, but that if microscopic sections of the knots or threads were made and stained by Gram's method, bacteria were always demonstrable inside the fabric.

To avoid stitch-abscesses and escaping ligatures, it is advisable to impregnate the ligature and suture material with some antiseptic—bichlorid, iodoform, silver—in order to inhibit the growth of any bacteria which may gain access to and find shelter within the thread, and thus escape the bactericidal action of the primary wound secretion. The necessity of returning to antiseptics in this particular is shown by another observation of Hægler. Silk ligatures, sterilized by boiling, when pulled through the fingers of disinfected hands almost always become infected, and give positive results on culture, while if, in addition, the ligature has been impregnated with bichlorid, all growth is inhibited.

While the larger absorbing surface presented by the peritoneum is capable of looking after microbes—which are introduced during all so-called aseptic operations in the abdomen—and thus our gynecologic brethren may be able to discard antiseptics more or less safely, I am firmly convinced that it is dangerous to discard them in general surgery.

510 Riatio Fidd.

BIBLIOGRAPHY.

1. Anleitung zur aseptischen Wundbehandlung, Berlin, 1892.
2. Tyndall: Floating Matter in the Air.
3. Allgemeines Med. Central Zeitung, 1897, No. 66; Zeitschrift für Hygiene, 1877, Bd. xxv.
4. Centralblatt für Chirurgie, No. 11, 1897.
5. Archiv für Klinische Chirurgie, Bd. lviii, Heft 2, 1898.
6. Ibid., Bd. liii, Heft 1, 1896.
7. Ibid., Bd. lvii, Heft 2, 1898.
8. Ibid., Bd. lvii, Heft 2, 1898.
9. Ibid., Bd. lvii, Heft 2, 1898.
10. Centralblatt für Chirurgie, No. 5, 1896.

A CASE OF MIDDLE EAR DISEASE.

SIMULATING MENIERE'S DISEASE.*

BY WILLIAM LINCOLN BALLENGER, M.D.

Lecturer on Laryngology and Rhinology, College of Physicians and Surgeons.

CHICAGO.

This case has excited some interest inasmuch as it has been diagnosed and treated by several physicians for very varying diseases. The same complex of symptoms has led the physicians to widely different conclusions. A few have diagnosed some form of stomach trouble, and one, Meniere's disease. My conclusions will be given after reviewing the history and symptoms of the case.

J. A. B., aged 41 years, a business man, was referred to me for examination, by Dr. W. H. Weaver, who has him on treatment for his ear disease. It is by the consent of Dr. Weaver and the patient that I report the case. He complains of recurring attacks of dizziness, nausea, vomiting and tinnitus. The tinnitus is likened to the roar of a distant moving locomotive. When the right ear is stopped the subjective noises cease. Stop-

*Read before the Chicago Laryngological and Climatological Society, May 20, 1896.

ping the left ear has no effect on the subjective noises. There is slight pain in the occipital region, occasionally. The attacks of dizziness, nausea, etc., are preceded by a full feeling in the head for about fifteen minutes. In walking there is a tendency to walk off into the gutter, or against the side of the adjacent building.

The first attack came on about four years ago and lasted for thirty days. During the height of the attack there is usually nausea and vomiting; after two to four weeks the symptoms subside and dizziness remains as the chief sign. The attacks are usually about one year apart and seem to depend somewhat on the season. The onset of winter seems to precipitate one. The last attack came on in November, 1898, and lasted until April 4, 1899, when it was suddenly relieved by Politzerization at the hands of Dr. Weaver. The ears have been inflated about three times a week since then.

In the physical examination of the drumhead in the left ear the drumhead was markedly retracted, lusterless and thickened along the manubrium, in the right slightly retracted, lusterless, and also thickened along the manubrium. Tuning-forks ranging from 26 to 2048 vibrations per second were heard with both ears, but more faintly in the left. The Weber test gave plus in the right or better ear. The Rinné experiment gave right ear $=+5''$; left ear $=$ no bone conduction. The Politzer accoumeter was heard but a few inches from either ear. The Galton whistle was heard to about 40,000 vibrations per second in each ear.

The above group of symptoms seems somewhat contradictory at first thought, but when these are studied carefully they are found to be characteristic of a certain type of middle ear instead of labyrinthine disease, or of stomach disorder. The presence of increased bone conduction on the right side, and the absence of bone conduction over the left mastoid seem to point to some form of nerve or labyrinthine deafness. When the deafness is due to middle ear disease there is usually an increase of bone conduction on that side, while if the deafness is due to nerve or labyrinthine disease there is a decrease of bone conduction on the deaf side. This gentleman is most deaf in the left ear and bone conduction is entirely lost on that side, while it is comparatively greater on the right side or side of best hearing. Thus far the signs point to nerve or labyrinthine disease. When, however, we remember that the Galton whistle was heard to the normal limit—10,000—it becomes apparent that there is need of further investigation before deciding as to the exact nature and location of the disease. If it were true nerve deafness the high tones of the Galton whistle would not be heard. I accordingly inflated the tympanic cavities through a catheter and again tried the Rinné experiment with the remarkable result as shown in the following statement: Rinné right ear, $+10''$; left ear $+10''$. In other words, bone conduction had been restored in the left ear, both ears now approaching well toward the usual normal Rinné test.

The explanation is simple: the extreme retraction of the drumhead had forcibly driven the foot-plate of the stapes into the oval window, thereby producing increased intralabyrinthine pressure which accounts for the loss of bone conduction on the left side. Real nerve deafness does not exist, but there is a functional disturbance due to a change of tension. The nausea and vomiting were also due to the increased intralabyrinthine pressure and not to real stomach disease. The case is certainly not one of Meniere's disease, as in that disorder there is sudden and complete, or almost complete, loss of hearing,

attended by nausea and vomiting, all of which are due to an effusion of blood and plastic lymph into the semi-circular canals and vestibule. The hearing is rarely if ever improved after such an effusion. In this case there was no great loss of hearing and there are abundant evidences of disease of the middle ear to account for all the phenomena in the symptom-complex herein recorded. The case may be called Meniere's symptoms, but not Meniere's disease. It is in reality a case of chronic otitis media with great retraction of the left drumhead whereby intralabyrinthine tension is increased.

100 State Street.

Correspondence.

Malarial Hemoglobinuria.

CINCINNATI, OHIO, July 30, 1899.

To the Editor:—I have been particularly interested in the articles on malaria, in the JOURNAL of July 29. Coming from such acute observers as Dock and Fackler, they can hardly fail to attract attention, and certainly influence if not compel belief. Of especial interest is Dr. Dock's handling of that much discussed subject, malarial hemoglobinuria, and his remarks concerning the frequency with which this complication is reported on insufficient grounds, i. e., without corroborative blood examination, leads me to report a case in which the diagnosis was repeatedly confirmed by the use of the microscope. In brief, the history is as follows: A white adult male, aged 40, with frequent attacks of chills and fever for over a year previous to passage of blood in his urine, had taken quinin irregularly during that time, but had not taken any for several weeks previous to his hematuria. Blood had appeared constantly in his urine for two weeks previous to his coming under my observation, at times, he claims, almost pure blood being passed. In addition, he complained of progressive weakness, rapid emaciation, nausea, anorexia, dizziness, shortness of breath, palpitation, slight tremor of limbs, and cough. Physical examination: temperature 100, pulse 100, respiration 30; lungs showed a few coarse and fine mucous rales at apices anteriorly and posteriorly; heart normal; spleen somewhat enlarged; no enlargement of liver. Urinalysis: color light amber, acid reaction, sp. gr. 1016; sediment reddish, amorphous and very abundant; albumin present and in considerable quantities; no sugar; no bile. Microscopic examination shows a few red corpuscles and a large number of "shadows," a few crystals of uric acid, urates, granular and epithelial casts. Examination of the blood revealed crescents and ovoids; no other form found at that time. He was put on Fowler's solution, grt. iii, three times a day, to be increased one drop per day. By the next day he had passed nineteen ounces of urine, and the red sediment and albumin were much less abundant. He was not given quinin at that time, the latter drug having but little influence over the estivo-autumnal parasite. On the second day he passed fifty-one ounces of urine with but slight red sediment. Quinin bisulphate was now started, 5 grains three times a day; the quinin did not increase the amount of blood in the urine. On the seventh day he passed seventy-three ounces of urine; flagellate bodies were seen in the blood for the first time. By the tenth day the blood had disappeared entirely from the urine, though albumin and casts still persisted, but no "shadows." At that time the quinin was increased to gr. x, t. i. d., and the Fowler's solution had increased to grt. vi, t. i. d. This treatment was kept up for forty-five days, and by that time no plasmodia had been observed for over a week. I then lost sight of him for a time, but subsequently, on dropping his treatment after a few months, he was again attacked with the passage of bloody urine. One other point of interest in the case was that after a month's treatment as above, the hemoglobin was found un-

changed, on both occasions registering 37 per cent. division of two drops; nevertheless he gained markedly in weight and in health and strength. I am somewhat inclined to the belief that the destructive action of the quinin on the red blood-corpuses neutralized in a way the good effects obtained by the administration of arsenic. Here then is an unmistakable case of malarial hemoglobinuria which was given quinin during the time of the passage of the blood, yet the blood in the urine, so far from increasing, steadily diminished. I have never seen an instance of hemoglobinuria in one of the regularly malarial intermittents, but have no doubt that if such occur, the result would be more favorable under quinin even than the case I have just reported. I do not think that even if quinin does produce hemoglobinuria in malaria, which I do not believe, that factor alone should deter us from using a drug which is almost a specific to the disease which we do know is frequently accompanied by this complication.

In regard to hypodermic injections, I wish briefly to state my experience with 7 cases of malaria all treated in this manner: all young adult males with fairly good family history; all of tertian malaria, 6 double and 1 single, in all of which the diagnosis was made by microscopic examination. In 3 all manifestations of the disease were stopped by one injection; in but 1 was no influence felt by one injection; in but 1 case was more than 6 grains given at a dose; the bisulphate was the preparation of the quinin used; all the injections but one were made deep in the gluteal region; very little pain was experienced, and that only at the time of the injection; but ten injections were used in all; no abscesses resulted from their use. In the cases in which an endeavor was made to change a quotidian or double tertian malaria into a single tertian by hypodermic injection of quinin, 1 was completely successful; 2 were partially successful; 3 were unsuccessful. Of these 3 cases 2 were completely cured by one injection, as shown by subsequent clinical history and blood examination; the remaining case was not much affected. I might say in conclusion that the injections were given at the very beginning of the chill. Very truly yours,

MARK A. BROWN, M.D.

Dr. Murphy's Letter on Optical Diagrams.

RICHMOND, IND., July 31, 1899.

To the Editor:—In the JOURNAL of July 29, there is a letter by Dr. Murphy of Kansas City as to "Misleading Statements and Illustrations in School Physiologies, Physics, and in Text-books on Diseases of the Eye," but unfortunately in this case it is Dr. Murphy who is misleading. He states that the text-books teach that parallel rays of light focus on the retina in the normal eye. This is just what they have taught, do teach, and always ought to teach.

The first three illustrations, which he states are incorrectly drawn, are just as correct as his Figures 5, 6 and 7. Possibly some slight objection may be made to them all, in that they take for their basis the old ray theory, which is entirely superseded by the wave theory.

Scheiner's experiment any one can perform by taking a visiting card through which two pinholes have been pierced, the distance between which is less than the diameter of the pupil; it will be found that if this diaphragm is held close to the eye while a bright star is being observed, and the subject is ametropic, there will appear to be two stars. If the upper right pinhole is covered with a red glass, while the subject is hyperopic, the red star will appear below; whereas, if myopic, the red star will appear to the observer as if from above. In the emmetropic there will be a fusion of the red and white stars into one.

This merely proves that Figures 1, 2, and 3 are consistent, for waves or rays from a star, that enter the pupil, are parallel. If we can suppose a case in which the upper part of the

star was flattened so that we could tell it from the lower part, then in Scheiner's experiment, no matter if the observer was myopic, emmetropic, or hyperopic, in every case the flattened part of the star would face the lower part of the retina, while to the observer it would appear erect with the flattened part at the top, as in Nature.

DAVID W. STEVENSON, M.D.

Retention of Life.

WASHINGTON, PA., July 31, 1899.

To the Editor:—Apropos of the editorial on "Retention of Life," in the JOURNAL of July 29, allow me to mention two cases which came under my observation in the past two years, while an interne in Western Pennsylvania Hospital.

The first patient, a slender youth of 19 years, slipped while attempting to board a moving train. The wheels crushed the right upper arm, right side of the pelvis, and left thigh. He reached the hospital in ten or fifteen minutes. Bleeding had stopped, but the cinder-covered bowels were protruding over the crushed right os innominatum and lateral abdominal wall. The patient was conscious and rational for fully an hour after the injury, until he died.

In October, 1897, a young tramp was found beside the Pennsylvania tracks, and brought to the hospital by ambulance. Examination showed both thighs entirely severed from the body, so closely to the pelvis that no operation could have given the needed flaps. The wounds were merely dressed; yet the patient lingered for almost a week. During this time death was expected almost hourly, yet consciousness remained till near the end.

To my mind such cases illustrate Nature's method of arresting hemorrhage from severed vessels—torsion. In this section of the country some surgeons rely almost exclusively on twisting the arteries to stop bleeding during an operation, and I have seen no untoward results, even when the popliteal and brachial arteries were twisted. The method certainly is deserving of more prominence than our works on surgery give it. Very truly yours,

THOS. WRAY GRAYSON, M.D.

[Arresting hemorrhage by torsion has been discussed in medical journals, is mentioned in most of the text-books, and is used to a great extent by many surgeons. Our correspondent is mistaken if he thinks the method is not recognized.—Ed.]

Yellow Fever.

WASHINGTON, D. C., Aug. 5, 1899.

To the Editor:—Among the outbreaks of yellow fever that have prevailed at Fortress Monroe, Va., and its vicinity let me mention one that has never been reported. In the early part of August, 1869, I had just come from quarantine duty at the mouth of the Rio Grande River, Texas, and being ordered to Fortress Monroe, found a French man-of-war quarantined in Hampton Roads because of yellow fever. Many of the crew having died, as well as the medical officers, the ship was visited daily by a surgeon from the fort, who went unrestrained about his duties after coming ashore. It was not long, however, before an unmistakable case of the fever broke out in a member of the family of one of the surgeons who had most to do with the fever patients on shipboard. We decided to keep the matter strictly secret, even from the commanding officer, and await developments. Happily the patient made a good recovery, and the disease did not spread. To this day no one but the two medical officers in attendance have ever known of its existence. To be sure, one case does not demonstrate much, but this instance shows the transmissibility of the disease, and the fact that its spread was controlled by isolation, and perhaps secrecy; for had the presence of yellow fever become known at that time among the twelve hundred people in this fort, many of them women and children, there is no telling how the panic ensuing from publicity of the fact would have ended.

IRVING C. ROSSE.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Gynecological and Obstetrical Journal, (N. Y.), July.

- 1.—"Etiology of Eclampsia and Diagnosis of Impending Eclampsia. Edward P. Davis.
- 2.—"Preventive Treatment of Puerperal Eclampsia. Richard C. Norris.
- 3.—"Use of Parotid Gland in Treatment of Ovarian Disease. E. Pierre Mallet.
- 4.—"Vaginal Incision and Drainage for Simple Broad Ligament Cysts. Thomas J. Watkins.
- 5.—"Infrapubic Route in Surgery of Uterus and Its Adnexa. William H. Wathen.
- 6.—"Hour-Glass Constriction of Membranes in First Stage of Labor: Clinical Study and Report of Five Cases. Ervin A. Tucker. Southern California Practitioner (Los Angeles), July.
- 7.—"The Nurse's Duty. F. T. Bicknell.
- 8.—"Christian Science—Divine Healing and Osteopathy. F. W. Bullard.
- 9.—"Radical Cure for Hernia. Wm. Le Moyné.
- 10.—"Use of Water as a Remedial Agent. John C. Fisher.
- 11.—"Ethics and Methods of Preventing Conception. John C. King.

Western Clinical Recorder (Chicago), July.

- 12.—"Rational Diagnosis. Henry B. Favill.
- 13.—"Atypical Pneumonia Following Grippe. A. T. Halbrook.
- 14.—"Report of Case of Probable Thrombosis of Right Sigmoid Sinus, Arising From Acute Purulent Otitis Media; Recovery without Operation. F. D. Brooks and Thomas C. Phillips.

Obstetrics (N. Y.), July.

- 15.—"Operative Treatment of Labor, Complicated by Pelvic Deformities. George W. Dobbin.
- 16.—"An Embryo at Six Weeks—Difficulty of Producing an Abortion in Certain Cases. Turner Anderson.
- 17.—"Symphysiotomy. With Report of Case. Arthur Devoe.
- 18.—"Physical Diagnosis in Obstetrics. E. A. Ayres.

Post-Graduate (N. Y.), July.

- 19.—"Diagnosis of Renal Tumors. Leonard Weber.
- 20.—"Remarks on Gastric Ulcer, Especially on its Cicatrization. Achilles Rose.

Interstate Medical Journal (St. Louis), July.

- 21.—"Medical Clinic on Diseases of Children. Augustus Callie.
- 22.—"Pneumonia Consecutive to Typhoid Fever, with Report of Case and Remarks on Bacteriology of the Disease. R. B. H. Gradwohl.
- 23.—"Black Water Fever. W. L. Brown.
- 24.—"Silver Salts in Ophthalmology. Edwin C. Renaud. Journal of Tuberculosis (Asheville, N. C.), July.
- 25.—"Some Notes on the Tuberculin Test. Edwin O. Otis.
- 26.—"Diagnosis of Early Phthisis. Llewellyn P. Barbour.
- 27.—"Early Diagnosis of Pulmonary Tuberculosis. Chas. F. Denney.
- 28.—"Diagnosis of Joint Tuberculosis. James K. Young.
- 29.—"Report of Twelve Cases of Tuberculosis treated with Watery Extract of Tubercle Bacilli. J. Sutherland.
- 30.—"Local Treatment of Lung Diseases. Benj. P. Lyle.
- 31.—"Use of Protargol in Diseases of Larynx and Pharynx. H. J. Chapman.

Hot Spings (Ark.) Medical Journal, July.

- 32.—"Case of Gall-Stones—Medically and Surgically Treated. W. R. Blalock.

Alabama Medical and Surgical Age (Birmingham), July.

- 33.—"Adenoid Vegetations in Vault of Pharynx, with Especial References to their Influence on the Ears and Mental and Physical Conditions of their Victims. J. H. Blanks.
- 34.—"Future of Medical Science. G. C. Chapman.
- 35.—"Examination of Urine. Edgar A. Jones.

Toledo Medical and Surgical Reporter, August.

- 36.—"Typhoid Fever—Its Symptoms and Diagnosis. James C. Reinhart.
- 37.—"Therapeutic Action and Usefulness of Alcohol. Harrison Hathaway.
- 38.—"Retropitoneal Abscess Simulating Morbus Coxarius or Hip Disease. O. M. Main.

Medical Sentinel (Portland, Ore.), July.

- 39.—"Pathology and Therapy of Cancer—With Special Reference to Cancer of the Stomach. A. C. Bernays.

- 40.—"Acute Gastro-Intestinal Affections in Children. Geo. M. Wells.

Southern Practitioner (Nashville, Tenn.), July.

- 41.—"Are the Uses of Tobacco Detrimental to Mankind? T. H. Marable.
- 42.—"New Operation for Hernia. Emory Laupber.

Southwestern Medical Record (Houston, Tex.), July.

- 43.—"Acute Bright's Disease, Superinduced by Pregnancy. B. S. Ezell.
- 44.—"Comatose Malaria. R. T. Morris.

The Philadelphia Monthly Medical Journal, June.

- 45.—"Pathology of Foreign Bodies in the Lungs. Geo. B. Wood.
- 46.—"Application of Following Underlying Principles for Sterilization of Lung Tissue in Tuberculosis. J. Mount Bleyer.
- 47.—"The Patient's Secret. Paul Stock.
- 48.—"Fractures of the Extremities, a Report of 500 Consecutive Cases, Verified by Radiographs. G. G. Rees and M. J. Wilbert.
- 49.—"Primary Sarcoma of the Nose, with Report of Five Cases. Thos. H. Hare.
- 50.—"The Pathologic Significance and Treatment of Leucorrhœa. C. R. Hyde.
- 51.—"Human Hemoglobin in High Altitudes. W. H. Bertold.
- 52.—"Rationalism in Practice of Medicine. Felix Kleeberg.
- 53.—"Successful Use of Thyroid Extract in Treatment of a Cerebral Neoplasm. S. Loving.

Northwestern Lancet (St. Paul), July 15.

- 54.—"Modern Veterinary Practice. M. H. Reynolds.
- 55.—"Surgical Treatment of Strabismus and Heterophoria, with Report of 47 Cases. H. A. Beaumont.
- 56.—"Ventrosuspension of Uterus. Aug. Eggers.
- 57.—"Lights and Shades of Life Among the Insane. D. S. Moore.
- 58.—"Report of Surgical Cases. John T. Rogers.
- 59.—"Probing the Nasal Duct. J. H. Rindlaub.

Medical Age (Detroit, Mich.), July 25.

- 60.—"Tubercular Osteomyelitis. Angus McLean.
- 61.—"Modern Medical Text-Books. C. C. Mises.
- 62.—"Four Cases of Tuberculosis Treated with Nuclein. S. H. Wellington.

Medical Record (N. Y.), August 5.

- 63.—"Question of Gruels in the Feeding of Infants. Henry Dwight Chapin.
- 64.—"Angioneurotic Edema and Allied Conditions: Report of Seven Cases. B. Onuf (Amfrowicz).
- 65.—"Reflex Cough. George L. Richards.
- 66.—"Case of Traumatic Neuritis with Hemorrhages from the Pharynx. Edward von Adelung.

New York Medical Journal, August 5.

- 67.—"The American Soldier and Venereal Diseases. A Refutation of Some of the Statements of Mr. Edward Atkinson. William A. Hammond.
- 68.—"Anesthesia: Nitrous Oxid; Ether; Chloroform. S. Ormond Goldman.
- 69.—"The Industrial Position of Woman in its Relation to Health and Vigor. Mary Jordan Finley.
- 70.—"Observations on the Typhoid Fever Epidemic in Southern Camps, and its Treatment. Joseph F. Chmelieck.
- 71.—"Nasal Polypus Weighing an Ounce, and Three Inches and a Quarter Long, Springing from the Septum Nasi of a Child of Twelve. H. R. Coston.
- 72.—"Case of Puerperal Septicæmia. Stephen J. Maher.

Medical News (N. Y.), August 5.

- 73.—"Ocular and Orbital Symptoms of Lesions of Frontal Sinus. Robert Sattler.
- 74.—"Some Salient Points in the Treatment of Hip-Disease. B. E. McKenzie.
- 75.—"Vaginal Colpotomy in the Treatment of Pelvic Disease. James H. Glass.
- 76.—"Treatment of Incipient Laryngeal Cancer. W. Scheppegehl.

Boston Medical and Surgical Journal, August 3.

- 77.—"Treatment of Acute Diarrhœa of Infancy. John Lovett Morse.
- 78.—"Hygienics of the Skin. L. D. Judd.
- 79.—"Hernia Following Operations for Appendicitis. Francis B. Harrington.

Philadelphia Medical Journal, August 5.

- 80.—"Sketch of Century's Progress in Medicine and Surgery. J. Ward Cousins.
- 81.—"Otitis Media and Earache in Lobar Pneumonia of Children. J. S. Meltzer.
- 82.—"Susceptibility and Immunity. D. H. Bergey.
- 83.—"Contribution to Study of Menstruation and Pregnancy in Nursing Women. S. M. Brickner.
- 84.—"Report of Case of Typhoid Fever: with Perforation, Operation and Recovery. Najeeb M. Saleeby.
- 85.—"Heat versus Fever. Frederick W. D'Erelyn.

Medical Review (St. Louis, Mo.), August 5.

- 86.—"Report to the Investigating Committee upon the Chicago Drainage Canal. Max C. Starkloff.

Maryland Medical Journal (Baltimore), August 5.

- 87.—"Gunshot Perforation of Intestines. J. M. Spear.
- 88.—"Accidental Uterine Hemorrhage. V. M. Reichard.

Cincinnati Lancet-Clinic, August 5.

- 89.—"Skin-Grafting by Thiersch's Method. Edward P. Adams.

AMERICAN.

1. See abstract in JOURNAL, May 20, p. 1116.
2. Ibid. p. 1117.
3. **Parotid Extract in Ovarian Disease.**—After noticing the experiences of Shober, Mallett reports and analyzes some twenty cases in which he has used parotid extract for ovarian disease, and his summary does not attempt any physiologic explanation of the action of the parotid gland, but simply states some of its effects as he has observed them. 1. It has seemed to relieve the pain of dysmenorrhœa in all cases, without regard to alleged causes and present conditions, to a greater extent than any of the numerous so-called uterine sedatives which he has been able to obtain. 2. It relieves those dull, aching pains referred to the back and ovarian regions, usually designated by those familiar, though vague and unsatisfactory terms "reflex pains, neuroses, ovarian neuralgia," etc. 3. Menstruation, when deranged, becomes more regular as to periodicity and less in amount and shorter in duration. 4. During its exhibition pelvic exudate seems to soften and become absorbed more rapidly under abdominal-pelvic massage. 5. The general health, strength, appetite, and spirits seem also to improve under its use, and those dull headaches, which constitute such a persistent and annoying symptom in these cases, are almost invariably

relieved and in some disappear entirely. 6. The only counter-indication that he has thus far met in its use has been in cases of the artificial climacteric, in which cases the flashes of heat and cold were distinctly made more frequent and severe. In concluding his paper he remarks on the decreasing birth-rate and the importance of conservative treatment of ovaries and tubes.

6. **Hour-Glass Constriction of Membranes in Labor.**—Tucker calls attention to this complication of the first stage of labor, and reports five cases which he finds due to six factors; namely: partial opening of the cervix; resistance to further opening; non-engagement of the presenting parts; separation of the choroid; toughness of the membranes, and uterine contraction. The diagnosis of this condition, if its possibility is kept in mind, ought to be made with certainty and it is of importance as enabling us to guard against too early rupture of the membranes and the unpleasant consequence of a dry labor.

8. **"Christian Science," Divine Healing and Osteopathy.**—Bullard shows up the character of these frauds very fairly, quoting from osteopaths themselves to show that they admit that their sect has no reason for existence except the financial one, the ability to extract money from their gulls.

9. **Radical Cure for Hernia.**—Wills describes and compares the various methods, viz., when the sac is not removed but used for a stop gap, or reinforcement (Koehler, Duplay, McEwen); 2, when the cord is allowed to remain in the canal, the walls being re-formed before and behind by peculiarly placed sutures (Bassini, Lucas-Championniere); and 3, entire obliterations of the canal, the cord being lifted out entirely and brought out higher up than the internal ring, through the muscular tissue, and left outside in subcutaneous tissues (Halsted, Fowler, and others). He then gives his own results. In his former series, reported two years ago, he used Halsted's method in all cases but one, and had two relapses. In the present series of fourteen cases he used Halsted's once, Fowler's transperitoneal method twice, and Bassini's method nine times. Two died; the rest have all done well. Each case was treated by the method that seemed best adapted to it. Wills believes that over-preparation of the skin about the groin, by lessening vitality, is responsible for some infection by the white skin germs whose home is in the follicles, and that interrupted s. w. g. sutures draw this down into the wound where moisture and heat favor their exciting supuration. The subcuticular suture lessens this danger. He does not especially favor the use of rubber gloves, and has had better results since he began, a year ago, to place a rubber drainage-tube in the lower angle of the wound. He admits that this looks like partial aseptic failure, but the result is what is aimed at. The method of operation is a matter of choice, but there is danger in ligating the sac neck in that it leaves a dimple on the peritoneal side, and this receives the impact of the bowels and favors a relapse. He has been in the habit of ligating the sac neck by transfexion with double suture, and with two long ends of the suture, drawing the ligated neck as far up as possible behind the abdominal wall and suturing it there, bringing out the sutures and tying outside of the aponeurosis of the external oblique muscle, fixing the dimple against sound muscular wall, thus preventing downward pressure on it and bringing a relapse. This plan has served him well. He keeps his patients in bed four to six weeks, and makes them wear a spica bandage for a month or more, but never a truss.

11. **Prevention of Conception.**—King has taken pains to collect the opinions of physicians and clergymen, Catholic and Protestant, on this subject. He finds that Catholic clergymen are almost unanimous against these practices, and physicians generally of the opinion that while they may be socially dangerous and condemnable, they are not necessarily dangerous to health, and are advisable in certain cases. He combats the Catholic view, supporting himself on physiologic and ethical grounds and by scriptural references. In conclusion he specifies the conditions on which he thinks physicians may select, and prescribes some methods of prevention, viz.: 1. When conception would prove dangerous to the mother; 2, when the child would inevitably inherit serious and incapacitating disease; 3, when the parents are obviously unable to afford the child reasonable food, raiment and care.

12. **Rational Diagnosis.**—This paper is the annual ad-

dress on medicine before the Wisconsin State Medical Society.

13. **Influenza Pneumonia.**—Holbrook, first stating that reliable statistics show that within the Lake Michigan region, out of every hundred deaths from influenza, fifty are due to complicating pneumonia, remarks that a large number of these pneumonias conform to no frank type of the disease, but present symptoms not described in the text-books or taught from college platforms. Although it has lately been somewhat the subject of writings and discussion, there is yet much to be done for the better understanding of the pneumonia that follows la grippe insidiously, with a pulse not above 90, temperature below 100, respiration of 25 to the minute, and no lancing pains, cough or expectoration, and with physical signs too obscure for diagnosis, and is yet a pneumonia that may eventually consolidate the lungs and be one of the most dangerous forms of this dreaded disease. As to the etiology, it is certainly due to the toxins, but just how is not entirely explained. The most probable theory is it causes, through the nerve-centers, a passive congestion. The bacilli of influenza and pneumonia are generally present, but as to whether the pneumococcus is essential there is a difference of opinion. After noticing the classification of grippal pneumonia of Lemoine, and stating that the symptoms are not constant with it, he reports a case which he offers as a type of atypical pneumonia of influenza. The treatment is that of other pneumonias, with special care during the convalescence. The prognosis is generally given as bad. Following a depressing disease, it is a serious form, but other things being equal, there is not so much difference between it and other pneumonias in this respect, except the greater likelihood of a slow recovery and serious complications. He calls attention in conclusion to the importance of a correct diagnosis, repeated chest examinations, and painstaking study of the case.

15. **Labor Complications.**—Dobbins' paper is to be continued, and can better be noticed when complete.

16. **Tolerance of Pregnant Uterus.**—Anderson reports a case in which he was called on to operate for vesicovaginal fistula. He found laceration of the cervix, which had extended, involving the bladder wall up to very near the angle of the right side. He operated and succeeded in pulling the uterus down far enough to pare the edges and close the bladder opening and perform trachelorrhaphy. The operation seemed to him unsatisfactory, but he introduced a drainage-tube into the uterus, irrigated the bladder with a boric acid solution, and, after a time, on examination, found that he had had perfect results. Before dismissing the woman, wishing to satisfy himself that the cervix was pervious, he had her taken to the operating room and introduced a sound into the uterus. The operation was performed Dec. 15, 1898. Menstruation had been irregular, the last having been November 25. Everything went smoothly along for some time, when he was informed that she was developing a tumor, and she was brought back to be examined. He found her seven months pregnant, so that trachelorrhaphy had been performed, drainage-tube introduced into the uterus, the uterus had been sounded, all during the early stages of pregnancy, and yet without producing abortion. All the data he can gather show that the woman was two months pregnant at the time of the operation.

18. **Diagnosis in Obstetrics.**—The previous installment of Ayers' communication was noticed in the *JOURNAL* of July 8, par. 8, p. 93. This one considers: The fetal body, movable and fixed; the highest point reached by the body in right, left, or middle of fundus; anterior lateral position, etc.

19. **Renal Tumors.**—After noticing the various forms of renal neoplasms, Weber remarks on the signs and symptoms, and says the growth and enlargement is the most constant sign; it always occupies the lumbar region except in rare cases of movable kidney. Lying between the ribs and iliac crest, it extends forward into the abdomen; the fingers can not be got behind it, and there is no resonance between the tumor and vertebra. Distinct bulging from behind is rare. The tumor usually retains the renal outline more or less. It may be somewhat nodulated, but never presents distinct notches like the spleen. The colon is invariably found in front or by the side of it, and it is very rare not to have the bowels in front of the kidney tumor. When on the right side, the cecum and

ascending colon may be displaced inward, and on the left side it may extend forward and inward, pressing the descending colon to its outer side, though it will be more frequently found on its anterior surface. The colon is practically never found in front of an enlarged spleen, and only rarely overlaps an enlarged liver. In some instances the tumor has been observed to leave its position and float forward in front of the small intestine, and may then be readily mistaken for an ovarian tumor. Renal tumors are found slightly mobile on palpation, as well as by the act of inspiration, and a deceptive sense of fluctuation is sometimes obtained. Hematuria, when nephritis or disease of the bladder and urinary tract can be excluded, is a very important symptom. It is said to occur in 50 per cent. of cases, and is more common in adults. Sometimes it is the first sign; in a few it persists throughout the case. In many cases it is intermittent, or it appears only near the close of the history. Pain, from a dull ache in the loin to severe, lancinating, colicky pain extending to the bladder, has been observed, but too much importance must not be given this symptom. The examination of urine is not generally of great value. The diagnosis is made largely by exclusion, and Weber gives the following points in regard to this: 1. By recent observations it is shown that degeneration and neoplasm of the suprarenal bodies occur more frequently than was formerly known; tumors starting in the suprarenal capsules primarily might in some instances have been diagnosed as renal tumors; when they are of considerable size it will be next to impossible to say whether the corresponding kidney be involved or not. 2. Perirenal lipomata may grow to enormous size, filling out the greater part of the abdominal cavity; dropsy, emaciation of the body and cachexia follow in the course of time. 3. Omental tumors are flattened, cake-like, and may be often palpated as a band or elongated mass passing transversely across the abdomen. 4. Mesenteric tumors, either cystic or solid, are generally round and freely movable; their prominent part is near the umbilicus; there is resonance all around them; urinary symptoms are absent. 5. Peritoneal growths, peritoneal abscess and induration, cystic and tubercular kidney may come up in the question of differential diagnosis. 6. Gumma of the kidney weighing up to one pound has been, may also be the seat of a growth. Hydatids may Israel. A case of syphilitic cirrhosis closely resembling tumor has been reported by Kelynach. 7. Hydronephrosis, pyonephrosis, nephritic and perinephritic abscess and renal calculus will be associated with renal colic and show important symptoms in the urine, such as blood and pus, which will assist us in diagnosing them. 8. Movable kidney, it is to be remembered, may also be the seat of a growth. 9. Hyatids may be deceptive when retroperitoneal; hydatid tumors of liver, projecting tongues of liver may present considerable difficulty when we try to eliminate the presence of renal tumor. An enlarged gall-bladder will be pushed upward and more prominent when the colon is inflated. A movable kidney will be pressed back into the loin under the same circumstances. 10. Splenic enlargements; no intestine in front, notched border, resonance between it and the spine. Ovarian and uterine tumors, and fecal impaction have also to be eliminated. The "phantom" tumor of the abdomen may readily simulate a number of abdominal disorders; considerable swelling of the abdomen is often noticed secondary to pelvic and other inflammatory conditions of the abdomen.

Having diagnosed a renal tumor, it is well to bear in mind that our knowledge of the biology of these growths at the present time is too limited to allow of our making a definite diagnosis as to their structure and essential nature during life. We may, however, safely make the following statements: A rapidly increasing growth of the kidney is almost always of a malignant nature. The forms usually met with in infant life are sarcomata; adenomata occasionally occur in early life, but do not often produce secondary deposits. In adult life almost any form of growth may develop; carcinomata are particularly limited to adults. The various forms of cystoma especially belong to adult life; sarcomata do occur, but much more rarely than in the young; malignant suprarenal and perirenal tumors are generally met with in adults alone. Weber reports four cases.

21. **Diseases of Children.**—In Caille's report, cases of the

following are considered: incontinence of urine; convulsions of reflex origin; acute emphysema; muscular insufficiency; eczema, and apex pneumonia.

22. **Pneumonia and Typhoid.**—Gradwohl, noticing an incorrect usage of the terms typhoid pneumonia, pneumonia typhus, etc., points out the three varieties which he thinks ought to be recognized: That form in which with croupous pneumonia there are marked typhoid symptoms without gross intestinal lesions and Vidal reaction. Here we find a true croupous pneumonia with marked toxemia and severe general symptoms, but bearing no relation to the specific attack of typhoid. This has been called by misnomer, "typhoid-pneumonia." There is also a form called by the French and Germans, "pneumo-typhus," characterized by sudden onset with symptoms of lobar pneumonia, and after the crisis we have the symptoms of typhoid fever. This is a mixed infection of pneumonia and typhoid. There is also a third variety which has been recently described by Fränkel, in which pneumonia signs appear after the appearance of typhoid symptoms. Fränkel divides this into three groups: 1. Cases of pneumonia, accompanied by typhoid symptoms, irregular fever, and diarrhea, coma, etc. In these cases, if the consolidation is central and the physical signs obscure, the diagnosis becomes very difficult. 2. In the second group he places those cases of frank lobar pneumonia which arise in the course of typhoid fever. They are extremely rare; he has seen but six in over 500 cases of typhoid fever. 3. Those cases where, in the course of typhoid fever, a pneumonia caused by the Eberth bacillus is set up. Fränkel says that pleuropneumonia often develops in the fifth week of typhoid, and that aspiration will evacuate a purulent exudate containing the bacillus typhosis in pure culture, and autopsy later will reveal the interstitial pneumonia. Gradwohl reports in full a clinical history, post-mortem and bacteriologic findings of a case of this third category of Fränkel. He closes his paper with remarks on differential diagnosis of the bacillus coli and typhus bacillus, with special mention of Hiss's culture-method for their distinction.

24. **Silver Salts in Ophthalmology.**—After noting the testimonies of various authorities in regard to protargol, Renaud gives his own experience. He finds it decidedly beneficial in catarrhal conjunctivitis, but slow in action in the gonorrhoeal form, though reliable and satisfactory in every respect. He has not found it satisfactory in trachoma. It worked well in chronic conjunctivitis and corneal ulcers.

25. **The Tuberculin Test.**—Otis' article first notices the fact that the test has been objected to, that in certain cases the reaction is not reliable, and suggests that above a certain dose, maximum to the individual, what at least stimulates a general reaction may occur in a healthy individual from temporary poisoning by the tuberculin. His observations are extended over 111 cases, and his results up to the last year were published in the *Medical News* of July 9, 1898. He adds them to the figures for this year. Out of 56 cases of unselected cervical adenitis there were 23 reactions, 6 slight reactions and 2 doubtful. Throwing out the slight and doubtful, we have 58.9 per cent., including them, 73.2, or an average of 65 per cent., indicating the proportion that were tuberculous. He compares these with the results of others and thinks it probable they are correct. In eight cases of syphilis and one doubtful one, there were 4 reactions. There does not seem to be any doubt that a certain portion of such cases will react. In 6 cases of more or less advanced pulmonary tuberculosis, bacilli and sputum, three gave no general reaction after 10 or 12 mg., and one none after 5 mg. It would appear, therefore, that the pulmonary tuberculosis when more or less advanced will not give a general reaction from 5, 10 or 12 mg. of tuberculin, and he calls attention to the fact that in advanced cases the reaction may be slight, while the reverse is true in any case. He summarizes his conclusions as follows: 1. The tuberculin test indicates early tuberculosis by a general reaction in the majority of cases, before it can be detected by other methods, the X-ray excepted. 2. The dose to accomplish this is from 5 to 10 mg. of Koch's original tuberculin. 3. No injurious results occur from the use of tuberculin in these doses. 4. Proved tuberculosis in a more or less advanced stage may fail to give a general reaction with doses of from 10 to 12 mg. 5. Syphilis gives a reaction in an undetermined proportion of

cases. 6. A non-tuberculous person may give a general reaction with a dose above the maximum used in the test. 7. The reaction may be delayed from six to twenty-four hours. As rules to be observed in making the test: 1. Always use the same tuberculin and of a standard strength. 2. Use aseptic precautions in giving the injection. 3. Make the injections deep into the muscles. 4. Keep a two, three or four hourly chart of the temperature if possible, beginning twenty-four hours before the injection. 5. Allow several days to elapse before repeating the test. 6. In early cases depend on the general reaction; in later cases, if the general reaction is wanting carefully look for the local.

26 and 27. **Diagnosis of Early Phtthisis.**—Barbour asks, "Can the early stages of pulmonary tuberculosis be diagnosed with reasonable certainty without diagnostic injection of tuberculin?" and he answers, "With reasonable certainty, yes." The earliest physical signs in the respiratory murmurs being percussion notes, pleuritic friction sounds, and sometimes moist or dry rales, in very limited areas, may often be detected before bacilli can be found. One can also be helped by the family and personal history and clinical symptoms. The clinical history of phtthisis is variable, as much so in the early as in the late stages. A slight cough of insidious onset continued over two or three months, hemoptysis, and pleuritic pains are quite suggestive. Slight rise of temperature, failure of digestion, etc., are all of value as aiding the expert to diagnose early tuberculosis. He cautions, however, those not practiced, against using tuberculin as a diagnostic aid, as it has dangers that can be avoided only by the expert and cautious. Denny's article covers much the same ground, noticing, however, in addition the signs of the pulse and the X-ray revelations.

28. **Joint Tuberculosis.**—Young's paper considers the two symptoms most positive in joint tuberculosis to be spasms and atrophy, and he gives a contrasted statement of the principal signs of non-tubercular chronic synovitis; tubercular, chronic, articular arthritis; and specific syphilitic arthritis. Beyond those already mentioned, the points he gives for tubercular disease are the lack of fluctuation, and the non-thickening of the capsule, the acute pains on motion, and the night cries.

29. **Watery Extract of Tubercular Bacilli in Phtthisis.**—Sutherland reports his own case and his treatment, by Dr. von Ruck, with the watery extract of tubercle bacilli, and reports twelve cases of his own practice. He has had, in the past year, five cases of unmistakable tuberculosis in which there has been an apparent recovery. He cautions physicians and patients, about trusting too exclusively to climate, which he thinks has, perhaps, less value than is commonly supposed.

30. **Local Treatment of Lung Diseases.**—Lyle advocates the use of local treatment of the lungs, and describes the method as used by him. The remedies are introduced in a state of minute subdivision by inhalation. The objections to this method, he thinks, have been more theoretic than practical, and are not borne out in practice.

39. **Cancer of Stomach.**—This address by Dr. Bernays, we believe before the Oregon State Medical Society, takes up the now familiar subject of cancer and its cure. He is in favor of operative treatment whenever possible, and his opinions are summed up in the following conclusions: "Knowing that cancer is incurable if totally extirpated, and knowing that it is fatal if not totally removed, I have arrived at the following method of dealing with patients who seek aid from me when they are afflicted by a cancer. 1. When the case is clearly curable, and the danger is slight, then I feel it my duty to urge the operation, and insist on an immediate performance of the same, and represent the prospects of a cure as highly favorable. 2. When there is considerable involvement of the lymphatics I do not strongly urge the operation, but tell the patient that the chance of a cure, though small, still exists, and in fact feel it a duty to make the attempt at a radical extirpation. 3. When the danger of an operation is very great, but where I still think the removal of all involved tissues can be completed, I mean by that where the operation is anatomically thinkable, I present the grave dangers of an immediate death on the operating-table, and though holding out but little hope of a cure and only probable pro-

longation of life, I still give enough encouragement to inspire the patient with some expectations of being benefited. As 2 rule, I find that these patients will decide to have the operation done. 4. Finally, in anatomically impossible cases I do not think it is justifiable to refuse to operate in some fashion if, after knowing the truth as to the hopelessness of the condition, a patient demands that an operation be done. In these cases the psychical effect of even an imperfect partial removal of the offensive cancer sometimes is very beneficial, and puts off for months the inevitable morphia syringe, which we are compelled to use during the last weeks." The latter part of Bernays's paper treats of cancer of the stomach, in which he reviews the experiences of others before stating his own. Out of 21 resections he has had only 2 deaths immediately following the operation. All of the others were benefited, and one lives from whom he removed a pyloric cancer as large as a child's head, seven years ago; thirteen died within a year, from return of the cancer, and seven lived from one and a half to four years; two of these are still in good health. He concludes by saying that should a few cases be radically cured, and twice as many killed by the operation, they would have derived more benefit than if none had been operated on. Those who are killed by the operation are saved from a most horrible slow death.

41. **Tobacco.**—Marable's presidential address is especially on smoking, and goes at considerable length into the literature of the subject. He believes that tobacco in any form is very bad for the growing boy, and especially the practice of cigarette smoking.

42.—See JOURNAL, June 17, par. 74, p. 1382.

43. **Bright's Disease Caused by Pregnancy.**—Ezell reports a case of acute dropsy with urine loaded with albumin. The woman was 21 years old, and three months pregnant. After numerous tappings she was somewhat relieved by the use of elaterium, the only drug which seemed to be effective, but after confinement this also proved inefficient. The patient died about eight or nine weeks after confinement, in convulsions. His diagnosis was acute Bright's disease, superinduced by pregnancy; he asks as to its correctness.

44. **Comatose Malaria.**—Norris describes comatose malaria, which is the most common form of pernicious malaria in temperate climates. The coma may develop suddenly, as in the apoplectic form, or the patient may fall asleep and deepen into profound unconsciousness. The coma, if not fatal, may last twenty-four hours and the temperature falls, the skin becomes moist and consciousness returns. The diagnosis is as a rule easy, but it may be confused with apoplexy, insolation and uremic coma. The microscopic examination of the blood and discovery of the parasite is the surest method. He is inclined to agree with Thayer that exposure to the sun may tend to determine the cerebral accumulation of the parasites. The treatment is with the specific quinin, and he gives it in 15-grain doses, hypodermically, in the form of the bimuriate of quinin and urea, and repeats the dose in four or five hours. If the pulse flags, he gives strychnin and digitalis, also hypodermically keeps the bowels well open, and watches the action of the bladder, catheterizing if necessary. He reports three cases.

45. **Foreign Bodies in Lungs.**—By compilation of recorded cases it is shown that the mortality attending the entrance of foreign bodies into the lungs through the air passages is about 34 per cent. when they enter by direct penetration—as bullets, etc.—other conditions being equal, there is less apt to be serious disturbance than when a bronchial tube is blocked. When a foreign body has entered the bronchiole through the trachea, in about 57 per cent. of cases it has been spontaneously expelled with favorable results. There seems to have been no special predisposition toward phtthisis following the lodgment of foreign bodies in the lung, any more than after other chronic irritations of the organ. The chance of bodies becoming encapsulated when entering the lung through the air-passages is slight, but when they result from direct penetration, Wood has experimentally proven that encapsulation may take place, but the formation of a fibrous envelope would be very slow owing to the scantiness of fibrous tissue, and such fibrous tissue is always poor in its blood-supply, and is to be considered a *locus minoris resistentiae*. From his experiments he corroborates

the theory that infarction in the lung will not take place without there be predisposing disease of the lung or circulation.

46. **Sterilization of Living Tissue.**—Bleyer advances the theory that ozone is generated in the blood, and then almost immediately transformed into H_2O_2 , which would coagulate the albuminous matters, and partly with the oxyhemoglobin, probably forming a compound which he calls *peroxyhemoglobin*. He has been able to appreciably increase the amount of ozone in the blood by passing weak currents of galvanic electricity through the body. It is probable that as the current passes through the blood, it decomposes the chlorids, which are normal constituents, forming hypochlorites or some highly oxidized compounds of chlorin. He considers these theories strengthened by the results of his treatment of tuberculosis by electric stimulation during the past few years; no report of cases is given.

47. **The Patient's Secret.**—According to the law of New Jersey, there can be no hindrance to the extraction of any testimony from a physician: the judge deciding that the testimony is pertinent, the physician is then compelled to respond, it may be to the extent of disclosing all of his patient's confidences. In half our states and territories are statutes exempting the physician from giving testimony of personal matters revealed to him by the patient in his professional capacity. Lack of uniformity marks the laws of the various states, but the majority exclude such testimony in the civil courts alone, while in New York and some other states the law applies to criminal courts also. The lesson Strock draws, after discussing the subject at length, is that a physician called to give testimony in a case that may disclose by probing a professional secret, should first ascertain the patient's wishes in the matter, and if testifying in a state where the law provides for his protection in case he refuses to answer on the ground of "privileged communication," should cautiously answer all direct questions, for fear that he make it possible for a disclosure of this secret on subsequent cross-examination. In giving testimony of such a nature as is calculated to injure the patient's character, a clear understanding is first to be had with the patient, and in case of his demise, the immediate family should always be consulted and their permission obtained. And it is urged that medical societies in such states as do not provide legal protection to the physician guarding his patient's secret, should combine and take action necessary to secure proper modification of the laws relative to this subject.

48. **Fractures of Extremities.**—Some interesting variations from existing statistics are noted; 349 of these fractures were of the upper extremities, while but 151 occurred in the lower. Fractures of one or more metacarpals were found in a proportionally large number of cases (51), due both to direct and indirect violence; in the difficulty frequently attending the late examination of these fractures the value of the radiograph was enhanced. Attention is directed to possible fallacy in reading the radiograph in supposed epiphyseal fractures, the normal epiphyseal line being frequently mistaken for a fracture. Exception is taken to the accepted rule that fractures of the shaft of the long bones are apt to be more oblique than transverse; the radiograph shows the contrary to be true. A large number of drawings in outline are reproduced from the original negative.

49. **Primary Sarcoma of Nose.**—The cases reported by Thomas are 5 in number, 3 in males, and 2 in females; the ages ranged from 27 to 59 years. Early symptoms were nasal obstruction and hemorrhage. One was found to be an adenocarcinoma, 2 were of the spindle-celled variety, one had the structure of a myxosarcoma, while the other was made up of small round cells. Degeneration of nasal polypi are cited as an important etiologic factor in the various forms of nasal sarcoma. The site of origin is more commonly the cartilaginous septum.

51. **Hemoglobin in High Altitudes.**—Averaging his observations in 69 cases recorded by Bergtold within three weeks after their arrival at Denver (5200 feet), he finds the blood's sp. gravity to be 1.059, which is exactly the average of sea-level individuals; after a residence of three weeks or more in Colorado, he finds the specific gravity to be 1.064, and allowing 5 per cent. for each degree above 1.059, the hemoglobin

normal at Denver altitude is to be considered 125 per cent.

53. **Thyroid in Cerebral Neoplasms.**—Evidence of the presence of a cerebral neoplasm was based on the symptoms of constant, increasing headache, gradual impairment of vision, indistinct outline of optical discs, with beginning atrophy. On the supposition that he had a glioma to treat, Loving administered the extract of thyroid for a period of five months, with the result of relieving all symptoms. The ophthalmoscopic examination demonstrated a marked improvement in the condition. The patient subsequently used his eyes at very exacting work, without recurrence of symptoms.

54. **Modern Veterinary Practice.**—Keynolds describes the methods of education in veterinary medicine, the social position of the veterinarian, which he thinks depends entirely on himself, the rewards of practice, and its importance in the field of public medicine.

56. **Ventrosuspension of Uterus.**—After discussing the indications and operations for retroposition of the uterus, Eggers closes his paper with the following conclusions: 1. There are three operations for retroposition which need to be taken into account, viz., Alexander's operation, or extra-peritoneal shortening of the round ligaments, Wylie's operation, or intraperitoneal shortening of the round ligament, and ventrosuspension, according to Dr. Kelly's method. 2. In cases of retroposition without adhesion, where the uterus can be lifted up, but where no relief is obtained by medical treatment or by pessary, Alexander's operation is to be performed. 3. In cases of retroposition with adhesions, where laparotomy has to be performed to loosen the adhesions, ventrosuspension ought to be preferred if both ovaries are extirpated. If one or both ovaries are left, the choice will be between ventrosuspension and Wylie's operation, with a possible preference for Wylie's, as it is impossible, even with Kelly's method, to be perfectly sure that the adhesions will be yielding enough to permit normal pregnancy and labor, while no such objection can be made against Wylie's operation. Still, the choice here might be individual with the different operators. If there are numerous very strong adhesions, leaving the posterior surface of the uterus very raw, hysterectomy would be indicated if the appendages have to be removed to avoid the danger of adhesions forming between the bowels and the denuded surface of the uterus. 4. In cases of complete prolapse, ventrosuspension is indicated.

60. **Tubercular Osteomyelitis.**—The object of McLean's article is to urge the importance of early diagnosis in tuberculous bone disease. After remarking on the pathology, methods of attack, and noticing that tubercular infection especially affects the epiphyses, because of the minuteness of the vessels in these parts, and the constant cellular change, he states that it seems natural that the bacilli should prefer the vertebrae and the head of the femur where several such unions are going on at the same time. We would not expect a primary focus in the femur after the twenty-first year, for the changes are complete at that time, while we might expect such in the vertebrae up to the twenty-fifth year. The nearer the center of circulation the focus is located, the more rapid will be its growth. The general condition of the patient does not always indicate bone tuberculosis. There may be no impairment of the general health and pain; the first symptom may be referred to some distant point, as in hip-joint disease it is frequently located in the knee. Tenderness is not marked until the bone begins to soften. If an area of tenderness can be detected around the epiphyseal line and no pain on movement of the adjacent circulation, disease of the bone may be suspected and both extremities should be carefully examined. Swelling does not occur until the compact layer is perforated and the periosteum bulges. Redness does not appear until the disease extends toward the surface. Atrophy of the limb is an important symptom and appears early. In disease of the vertebrae before puberty, it is usually confined to the bodies of the vertebrae and the first symptom detected is frequently the attitude and the effort to avoid vertebral motion. Little or no pain can be detected by pressure on the arches, but sudden jars elicit it. In young adult life, when the arches are affected pain can be elicited by pressure. The only difference in the symptoms of a primary bone and primary synovial affection is tenderness over the epiphyseal margin. The ther-

monometer is frequently a great aid, as any tubercular affection has its evening rise of temperature, though it may be very slight. In all cases the family history should be inquired into, and a careful search be made for lesions elsewhere in the body. The exploratory or aspirating-needle may be used, the bone having become softened and easily perforated, this being also a diagnostic point. Ignipuncture has been recommended, and is performed with a heated needle point of a Paquelin cautery, and has a therapeutic as well as a diagnostic value. Treatment is constitutional, mechanical and operative, the latter when the bones of the extremities are affected. To obtain benefit from constitutional and mechanical treatment an early diagnosis is of greatest importance. It is easier to prevent spinal curvature and deformity than to cure it, and a plaster-of-paris splint or braces properly applied, with good hygienic measures and surroundings and the use of constitutional remedies, will terminate many cases favorably.

61. **Modern Medical Text Books.**—Mapes criticizes the multiplication of modern text-books, many of which he thinks are useless and altogether superfluous, and merely compilations without any thing new. The illustration he gives is that of a modern author on surgery, who has had the audacity to introduce a chapter on hydrophobia which Mapes says is not entitled to be classified in the category of surgical diseases, or even as a disease at all, the arguments of nearly every medical and surgical authority notwithstanding. The bulk of his paper is taken up with extracts on this disease.

62. **Nuclein in Tuberculosis.**—Wellington reports four cases of tuberculosis treated with nuclein, two of which seem to be greatly improved and one completely cured, though in neither case was there any examination for bacteria after apparent recovery.

63. **Gruel in the Feeding of Infants.**—This paper gives the results of certain experiments made by Chapin as to the effect of diluting cow's milk with decoctions of cereals. The experiments were made *in vitro* and upon a healthy dog with a previously prepared gastric fistula. The result showed that the additions improved the digestive quality of the milk not only in attenuating the casein but by also increasing the nutritive value of the food. The proper addition of gruels to milk will not infrequently prevent wasting in bottle-fed babies who are losing flesh. The large proportion of lactose, a carbohydrate, in human milk shows the desirability of this food principle in the growing infant. Apart from the experiments, the clinical test is the real one as regards the value of this product. Chapman maintains that the common opinion that infants should not be given starch in any form is incorrect except as regards excess. The youngest infant can tolerate and digest a small amount. The paper goes into details as to preparation of infant's food.

64. **Angioneurotic Edema.**—The purpose of Onuf's paper is to show from the seven cases which he reports, the close relation of angioneurotic edema to urticaria, certain forms of erythema and other disorders which may be considered as due to disturbances in that part of the nervous system presiding over the vegetative functions in the organism. He analyzes these cases in detail as to their etiology, finding that neuropathic and psychopathic taint is the most prominent predisposing cause, while psychic influences are the most prominent exciting cause. The symptoms are reviewed in detail and the diagnosis between these disorders and mechanical local edema, hydropic edema, hysterical and blue edema, myxedema, insect bites and erythema nodosum. The treatment seems to be chiefly in a general tonic nature, and a tranquillizing action on the nervous system. More attention will have to be paid to the questions of rheumatic and lithemic diatheses. He thinks the cases reported demonstrate convincingly the affinity of this disorder with urticaria and fugitive neurotic edema. There is also a great resemblance to the so-called enteritis tubulosa or membranacea, except that here secretory innervation appears to be mainly disturbed, while in angioneurotic edema the alteration chiefly affects vascular innervation. If we consider further the tendency to coexistence with angioneurotic edema of nervous angina pectoris, anomalies of menstruation, or other disturbances, whether of vascular or of visceromotor or of a secretory innervation, either in the same

individual or in his family, the following conclusion suggests itself:

Certain individuals are especially predisposed to disease of that division of the nervous system which presides over the vegetative functions of the organism. This special predisposition may be only individual or it may be hereditary. In either case it may extend over several vegetative functions or over one in particular. Thus one patient may show predisposition to disorders of vascular innervation only; in another patient, if he suffers from asthma for instance, visceromotor innervation may be exclusively disturbed; or several vegetative functions of the nervous system, such as vascular, cardiac, and secretory innervation, may be involved in the same patient. In some cases finally the predisposition mentioned might produce the symptom complex known as Basedow's disease.

The author mentions in conclusion that what he has called visceroneurotic taint, the predisposition to disorders of the vegetative functions of the nervous system, is frequently associated with a general neuropathic or psychopathic taint.

65. **Reflex Cough.**—Richards discusses the cough due to nervous reflex from various sources pointing out the anatomy of the nerve supply of the larynx and giving the diagnostic points between nervous and respiratory cough. These are chiefly as follows: Sudden appearance; rhythmical character; free intervals when no signs of cough are present; expectoration absent or slight in amount; no fever or marked constitutional disturbance; may continue for years or stop at any time, or eventuate in other symptoms; may come at regular intervals; stops when person's attention is fully occupied; is most marked when the patient is under observation; if stopped for a time begins with an explosion; is usually absent at night, always if purely nervous; absence of physical signs in respiratory tract; cough apparently a useless one, does not accomplish anything; patient complains of usual symptoms of catarrhal cough in the respiratory tract; its tone is various, sometimes hacking, bellowing, shrill, croupy, metallic, at other times hoarse from insufficient cord tension. This latter is an imperfect cough, and according to Professor Gardner is somewhat distinctive of thoracic tumors or aneurysm pressing upon the recurrent laryngeal nerve. Its chief features are hoarseness and imperfect explosion; it is a noisy, not infrequently harsh, brassy cough. The diagnosis is often difficult. He then enumerates points from which reflex cough may be excited; the central nervous system, as in glottic spasms which commonly issue from the cortical centers, uterine and visceral coughs, ear and nasal cough, and those due to direct pressure on laryngeal structures. Cases illustrating these are reported. The therapeutics of these cases depends on diagnosis. This once accurately made, the treatment is readily adaptable to the individual.

66. **Traumatic Neurosis with Pharyngeal Hemorrhage.**

—Von Adlung reports a case of a woman who was jerked from a moving train, suffering severe mental and physical shock and had an immediate uterine hemorrhage. Has since that time had various symptoms of a hysterical traumatic neurosis and pharyngeal hemorrhages, occurring at first two or three times a week, and latterly only about once a fortnight. The previous history was not neuropathic. He speculates on the cause of these hemorrhages, and notices the observations of Laurent of similar cases. He suggests that there may be some molecular change in the nerve centers accounting for the dilated condition of the blood vessels at the base of the tongue and their occasional rupture.

67. **Soldiers and Venereal Diseases.**—Hammond remarks on the statements of the prominent anti-imperialist, Atkinson, and shows his errors as regards the American soldiers and the conditions in the Philippines.

68. **The New Industrial Position of Woman.**—Dr. Finley claims that the enlargement of the duties and life pursuits of women will tend to greater physical vigor and mental health and the perfection of the race.

69. **Typhoid Fever in Southern Camps.**—Chmelieck describes the conditions observed by him in the camps at Tampa during the late war with special reference to typhoid as it there occurred. He attributes the spread of the disease largely to the ignorance and recklessness on the part of the volunteers and their officers. In his experience there was about 78 per cent. of typhoid fever to 22 per cent. of all other disorders. He

describes the symptoms and treatment, and concludes as follows:

1. The camp should be frequently changed.
2. The division hospital is here to stay, as only in this hospital can female nurses be employed, and
3. The proper person as attendant is the female nurse.
4. All soldiers should be educated in plain sanitary hygiene.
5. The sooner the patient takes to bed the fewer complications are likely to follow. The hemorrhagic and perforation complications develop in patients who walk until they fall, and who use indigestible food during the first stages of typhoid.
6. Milk is not suitable for every case; many of the patent foods on the market, especially "predigested" foods, must replace it in many cases.
7. Sugar used during convalescence will cause relapse quicker than solid food.
8. Every case requires special study.
9. The severest case, with hemorrhages and other complications may get well, while the lightest case, apparently doing well, may prove fatal. Never give up a case as hopeless.
10. All the patients in the southern camps showed a remarkably low pulse-rate, even with high temperature, for which I can not offer any explanation.

73. Ocular and Orbital Symptoms of Lesions of the Frontal Sinus.—The recognition of lesions of the frontal sinus, their course and their treatment are discussed by Sattler, who claims that the acute disorders are quickly diagnosed but the chronic lesions are much less easily recognized. The orbital symptoms are, first, localized tenderness without redness or swelling, generally unilateral, this giving away later to transitory, painful swelling of the periosteum and bone with frequently redness and swelling of the overlying soft parts. These symptoms come and go for days and weeks, and headache may become general. At the same time there is a characteristic symptom, the change of contour of the inner, upper and sometimes even of the inferior margin of the orbit, giving rise to a change of physiognomy, pointing to an existing sinus lesion. With this there may be no serious nasal trouble. If the grade of inflammation is not high a chronic empyema may undergo absorption or thickening and terminate in a contraction of the cavity, or, in other words, hyperostosis. It may also occur that a spontaneous evacuation of the contents occurs into the nose, or the temporal angle of the sinus may give way, but this more frequently occurs at the lateral or orbital wall at points near the inner canthus of the eye. The most frequent outlet of the dissecting trail is under and at the outer or temporal border of the tear-sac. They may, however, take still other courses. With hyperostosis occurring as above stated, severe neuralgic seizures may follow as a remote result. The ocular symptoms are first noticed in the lids. A serous infiltration of the loose cellular tissues of the orbital roof depending on exacerbations of the sinus lesions may interfere with the action of the levator muscles of the upper lid and the superior rectus. Drooping of the lids and slight restriction of motion upward is often observed. Proptosis due to the same cause and lateral downward displacement of the globe may also be present even thus early. To these symptoms are added an edema of the inner third of the upper lid with dusky discolorations looking so much like the inflammatory edema of chalazion that it may lead to error. On the conjunctiva, especially the retrolateral and ocular divisions, engorgement of the veins and chemosis are frequently observed, due to venous obstruction. In some cases the upper fornix is everted. Proptosis is variable, and not conspicuous even in pronounced cases. Exophthalmos is only conspicuous in exceptional cases, in which perforation takes place behind the orbital margin and the dissecting trails push backward toward the apex of the orbit. He reports a case and remarks that the surgical methods which enable us to explore the frontal sinus from without are so satisfactory that few surgeons attempt it from the intranasal opening. He uses the external method exclusively with chisel and mallet.

74. Hip Disease.—McKenzie concludes his paper as follows: 1. Hip disease is a local manifestation of a constitutional disease. 2. Early operative treatment is seldom justifiable. 3. When softening can be determined the surgeon should operate and obey indications, observing all care not to needlessly injure

the mechanical integrity of the joint. 4. In the subsequent management of the wound asepticism and antisepticism must be carefully observed. 5. From the earliest moment efficient protection for the joint should be secured and constantly maintained by a well-fitting mechanical appliance. 6. A proper splint should fulfill two indications, i. e., secure rest for the affected joint and prevent deformity. No effort should be made to employ the splint as a crutch; ordinary crutches should be used. In the adjustment of the splint the knee should be slightly flexed. 7. Constitutional treatment is indicated as in other tubercular affections. Great emphasis should be laid on obtaining the freest exposure to direct sunshine and fresh air. Free use of iodoforn is a valuable adjunct. 8. After excision a perfect recovery never follows because the mechanical integrity of the joint is not preserved. 9. Following mechanical and constitutional treatment complete restoration of function is sometimes obtained. 10. Even when breaking down of tissue occurs which necessitates incision, there is sometimes a perfect restoration and frequently a highly useful return of the joint function.

75. Vaginal Celiotomy in Pelvic Diseases.—Glass advocates the vaginal route in a large proportion of cases. He summarizes its advantages and disadvantages as follows: 1. A preliminary or exploratory vaginal section is always warrantable. 2. Drainage when necessary is more free and natural. 3. There is less danger of extending infection. 4. The limited peritoneal field exposed and handled reduces to a minimum pain, shock and intestinal paralysis, frequent sequelæ of suprapubic abdominal section. 5. Post-operative nausea is lessened and movements of the patient are less constrained, contributing much to her comfort and general welfare. 6. Vaginal section may frequently be performed when the condition of the patient, especially in abscess cases, would interdict any other procedure. 7. The danger of hernia through the scar is practically nil. 8. Recovery is quicker. 9. The mortality, as calculated from all reported cases, is materially lessened.

The contraindications for the vaginal operation are: 1. An unusually small or septic vagina. 2. Such fixation of the uterus that it can not be drawn down, or such enlargement of the organ that operations on the adnexa, when desired, can not be carried out. 3. Evidences of tubercular degeneration or appendicular disease. 4. Carcinoma with involvement of the uterine ligaments or iliac glands. 5. Cases of pelvic hematocèle with active non-circumscribed hemorrhage.

76. Treatment of Incipient Laryngeal Cancer.—The importance of early surgical treatment of laryngeal cancer is emphasized by Scheppegrell, though he notices the non-operative methods as applicable only to cases where operation is contraindicated. Among these are the use of the animal toxins, arsenious acid, an apparent cure by which has been reported by Costinin; and pyoktanin. He discusses the operations, thyrotomy and total extirpation. In tracheotomy with thyrotomy he prefers the operation in two tempos with an interval of a week between them, unless an immediate complete operation is urgently required. As regards total laryngectomy he thinks that when malignant disease has advanced to such an extent as to require it, the prognosis is very bad.

77. The Acute Diarrheas of Infancy.—In this lengthy article Morse describes the principal varieties of infantile intestinal troubles, which he divides, first into simple or nervous diarrheas, quickly relieved by removal of the cause. If it is due from fright and fatigue, this is readily done, and if climatic, change of air is necessary. If due to indigestion, purgation followed by, in rare cases, washing out the stomach and bowels may be necessary. In this form alone, opium in the form of paregoric, a few drops in a dose, and astringents are advisable. In infective diarrheas, which he divides into fermental, floecolitis, and cholera infantum, the removal of the cause also is required. Prevention and hygienic measures are, of course, important. Opium and astringents are counterindicated. In the fermental diarrhea, which includes most cases, removal of the cause by purgation by castor-oil or calomel, occasionally washing out of the stomach and bowels with salt and boric acid solutions, temporary withholding of food for about twenty-four hours, and subsequently employing only carefully selected milk, of low percentages, in frequent doses, and use of bismuth in form of subgallate, and subnitrate is ad-

vised. In ileocolitis flushing of the bowels with the same solution as is used in the stomach, large quantities being employed until perfectly clear, followed by injection of bismuth and chalk mixture and mucilage are very useful, with other treatment on the same lines as in fermental diarrhea.

Cholera infantum is rare. The name is to be applied to all cases with extreme cholericiform symptoms. The indications are to remove the toxins from the stomach and bowels; supply fluid to the tissue by subcutaneous injections of normal salt solution, a pint daily; reduction of temperature by cold sponging, etc.; restoration of surface circulation, and keeping the patient alive until the disease is cured. Stimulants are advisable, atropin, in doses of 1/500 to 1/800 of a grain. Hypodermically is the most useful. Morphin may be given when diarrhea and vomiting are extreme or nervous manifestations very marked, in doses of not over 1/100 of a grain.

78. **Hygienics of the Skin.**—The principal points of Judd's paper, aside from his advice of the use of warm bath daily, followed immediately by cold sprinkling and full bath once every seven days with the same sequence is the importance of using linen instead of woolen underwear. He thinks that the general popular notion in regard to the value of woolen underwear is a delusion.

79. **Hernia Following Operations for Appendicitis.**—The summary of Harrington's paper is as follows:

Hernia and bulging occur frequently after operation for appendicitis, and result from the separation of muscles and other tissues in the scar. They are very common when drainage has been used.

The muscular and tendinous fibers should not be transversely cut in any appendix operation unless it is unavoidable.

As little drainage material as safety will permit should be used. When drainage is necessary the wound should be closed as far as possible with sutures, and the drainage removed as early as safety will permit. If the wound can be closed immediately the tissues should be restored to their normal position by suturing each layer.

Stout belts and trusses are of little value, and may even do harm.

The abdominal muscles from the earliest period possible after operation should be developed by appropriate exercises.

If hernia or marked bulging appears, operation for cure is safe and satisfactory.

81. **Otitis Media and Earache in Pneumonia.**—In this paper Meltzer has pointed out the relationship that frequently exists between lobar pneumonia in children and earache. The cases he observed were similar in that at the onset of the disease earache was a prominent symptom, but disappeared in the course of twenty-four hours, or else continuing in a mild degree—to disappear entirely either before the crisis set in or with it. In none of his cases did the pain outlast the disease, neither did the earache terminate in a suppurative otitis. Earache was usually on the same side with the pneumonia; hearing apparently was unaffected. The age of the children upon whom the observations were made ranged from 18 months to 8 years, the initial pain being more intense the younger the child.

In further discussion of his observations that in all the cases of lobar pneumonia complicated by otitis media not one has resulted in a discharge from the ear setting in during the course of the disease, the writer inclines to show a certain antagonism, in children at least, between pneumonia and otitis media suppurativa, "possibly because the pneumonia, by its hyperleucocytosis, acts as a derivative on the otitis."

83. **Menstruation and Pregnancy in Nursing Women.**—In this paper Brickner discusses the influence of lactation upon menstruation and pregnancy, and a number of interesting deductions may be drawn from his review of nearly 4000 cases under observation at the dispensary of the Mount Sinai Hospital. These statistics show 442 of the patients were nursing women, of these 191 had menstruated, a percentage of 43.3. Of these 20 per cent. had menstruated at regular intervals after the catamenia first returned, although the type of the flow sometimes differed from that existent prior to the pregnancy just ended. In explanation of this deviation from the normal, he considers it due in a large proportion of these cases to an unusually strong "menstrual habit." Heredity also plays an im-

portant role—four of the above cases were women whose mothers, and in one case a grandmother, had had a similar experience. Of the 191 women who had menstruated during lactation 26, or 14 per cent., were found to be pregnant, conception occurring most frequently in the fifth and ninth months of lactation. In the consideration of the influence of the milk of a menstruating woman upon the child at breast, occasionally the child is unaffected, again the larger proportion of women menstruate but a few times, or but once during lactation, the single catamenia is apt to be very profuse and then perhaps not again appear during lactation, hence the wisdom of not at once determining upon the removal of the child from breast unless the mother becomes worn and anemic.

The conclusions are different when the mother of a nursing child becomes pregnant. Ordinarily lactation should cease. In exceptional cases, if the mother is strong and healthy and capable of doing justice to both child and fetus, the child may continue nursing for a few weeks.

84. **Report of Case of Typhoid Fever.**—The case reported by Saleeby is one of typhoid, the perforation occurring early in the course of the disease, probably about the thirteenth day, coming on insidiously, with no marked reduction of temperature, pain being the most constant and pronounced symptom, the first vomiting occurring after eighteen hours. An operation was resorted to after this and the perforation located in the ileum, the intestine was brought into the abdominal incision and anchored by suture. Twisted iodoform gauze was used as a drain and placed deeply into the pouch of Douglas. Other similar drains were placed into each iliac fossa. Recovery from the surgical affection was rapid, little or no discharge resulting. A relapse in the typhoid condition occurred, with a moderate febrile run. Normal temperature was attained on the forty-second day.

86. **Chicago Drainage Canal.**—Starkloff gives his objections to the Chicago drainage canal, his arguments being mainly on *a priori* theoretical considerations.

87. **Gunshot Wounds of the Intestines.**—Spears reports a case of gunshot wound of the intestines producing thirteen perforations, all in the jejunum except two or three, treated successfully with the exception of a fecal fistula, which lasted for several months after the injury was received.

88. **Accidental Uterine Hemorrhage.**—By accidental uterine hemorrhage, Richard understands placental hemorrhage due to detachment other than in placenta previa. He reports two cases.

FOREIGN.

British Medical Journal, July 22.

Rest and Exercise in Open-Air Treatment of Phthisis. ARTHUR RANSOME.—The chief theme of this article is the value of rest in the treatment of phthisis, the claim that it produces gain in weight, better oxygenation of the blood, more continuous warmth of the body, more repose given to the bony levers overlying the injured part, and the beneficial influence of the recumbent posture on the state of fever. As regards exercise in these cases, we can attain our object by limiting the movement of the body to such a degree of exercise as will not quicken the action of the muscles of forced respiration. One source of danger is the increase of blood-pressure associated with respiration. Any exhaustion that may diminish the vital powers must be avoided. The degree of rest prescribed must depend first on the presence or absence of fever, and, again, on the digestive and assimilative powers. The amount of exercise will depend on the muscular and bodily vigor and on the amount and extent of movement allowed by the disease to the ribs in forced respiration, and especially to the bones over the injured parts of the lungs.

Treatment of Chronic Diarrhea. I. BURNEY YEO.—The writer reports a case of chronic diarrhea treated by various methods. The most interesting point, however, was the improvement under pancreatic emulsion. The cause of symptoms was obscure, but there was one that was constant, i. e., the whiteness of the motions, and this suggests the use of the remedy. The leaving off of this pancreatic emulsion was followed by a relapse of the diarrhea, and, at last report, the patient was still continuing to use it though apparently in first-rate health.

On Experimental Production of Hydrosalpinx and Hydrometra in Animals and Its Relation to Hydrosalpinx in the Human Subject. C. J. BOBO.—From his experimental investigations Bond finds that in the lower animals and in the human subject, as far as the Fallopian tube is concerned, the mucous membrane lining the canal of the oviduct has a certain secretion of a peculiar and definite character, and that this is absent during pregnancy. Human hydrosalpinx is not a final condition in infective inflammation of the tube; it is merely a mechanical distension by normal secretion in a tube the two openings of which have been closed by inflammation.

Loss of Knee-Jerk and Peripheral Neuritis in Diabetes Mellitus. KARL GRUBE.—Grube's paper is based on the study of the facts already known, and 11 personal cases. He concludes that we have three manifestations of the nervous disturbances caused by the increase of sugar in the blood: 1, cramps or an acute irritation of the nerves, probably not accompanied by any material change in the nerves; 2, neuritis or acute inflammation of the nerves, and 3, a slow degeneration or nutritive change in the nerves which seems to have a preference for the crural nerve, and is then accompanied by loss of the knee-jerks, but which may also occur in other nerves, as, for instance, in the optic. It then leads to a gradual diminution of vision with central scotoma. The impotence which is so frequently a symptom in male diabetic subjects is also probably caused by nutritive changes in the corresponding nervous apparatus. He has frequently found it to be associated with loss of the knee-jerks.

Case of Traumatic Epilepsy Following a Compound Fracture of the Skull Sustained Eleven Years Previously. PHILIP JAMES.—The author reports a case of a man suffering from epilepsy dating back within a year, but attributed to an injury received ten or eleven years previously. There was, besides the fits, marked peripheral contraction of the visual fields. The cicatrix in the scalp of the former injury measured about four and a half inches in length on the right side of the vertex extending from near the median line outward and backward. It was considerably depressed anteriorly and posteriorly. Near its middle it was divided by a bridge of apparently unfractured bone. Posteriorly pulsation of the brain could be seen and anteriorly pulsations could not be detected, but just in front of the bony ridge there was a special point showing tenderness on pressure with dimness of vision. The operation was performed, and a silver plate inserted to make up for the loss of bone. The patient has been greatly improved, and has had no fits for eighteen months since the operation. One of the most interesting points connected with the case, however, was that the painful spot, pressure on which was followed by pain, tremor, and loss of vision, was ascertained by surface measurements to correspond very nearly with the right angular convolution. The two charts of vision given with the paper show diminution on both sides, but most marked on the left side, opposite the lesion.

Revista Médica de S. Paulo (Brazil), June 15.

Chronic Mastitis. S. RODRIGUES.—The observation reported is a warning not to confound the lesions of chronic mastitis with carcinoma, as has probably occurred more than once under similar circumstances. The mastitis had lasted twenty years when a slight accident caused suppuration and pains. The entire symptoms and clinical picture almost imposed the assumption of carcinoma and removal of the breast, but after evacuation of the pus the tumor disappeared.

Muscular Suture Without Buried Threads. M. VIANNA.—The stitch resembles a simple "crochet" stitch, with one thread and a Reverdin needle. The thread is drawn through from one side to the other in a loop long enough to reach over the point for the second stitch on the upper side of the wound. The needle is then inserted as before and parallel, and the thread hooked and drawn through the first loop and through the tissues to form a second loop. The third loop is drawn through the second, and so on. The whole suture ravel out instantaneously when the end of the thread is pulled.

Bulletin de l'Académie de Médecine (Paris), July 11.

Milk Serum in Restorative Serotherapeutics. LEREBOULET.—After four years of tests and experiments, Gimbert and Tajasque of Cannes now announce that in milk serum we have a new product "as natural, as alive and as complete as bio-

logic chemistry is able to produce," which modifies in the most favorable manner, attenuating or curing, all diseases accompanied by debility and generally defective nutrition. It has no vaccinating or immunizing properties, and is absolutely non-toxic and harmless. Although readily absorbed by all the natural channels, the hypodermic method has been preferred as better adapted for comparative tests. It has proved a most valuable vehicle for arsenic, strychnin, mercury, etc. Gimbert has now a long list of tuberculous and other patients cured with this new serotherapy, which he is soon to publish. The serum is prepared by coagulating the milk; the curd is dried in the oven, and ground to a powder, mixed with a little calcium carbonate and put over the water-bath for a few hours with the whey, first filtered and sterilized at 120 C. When the serum is sufficiently saturated it is filtered, a little carbonic acid added to preserve it, and sterilized again after bottling. Lereboullet and Dumouthier have also been testing a somewhat similar preparation, at Gimbert's suggestion, which confirms in the most striking manner the value of this new variety of serotherapy, although there was frequently a slight reaction which, however, did not interfere with the cellular renovation induced by the injections. No reaction occurs with the Tajasque serum under ordinary conditions.

Rhinoplastics by Italian Method. P. BERGER.—"The conditions of success are to have the operation planned to its minutest details before commencing, and never deviate from the plan, no matter what turns up; also to restrict this method to persons under 40, and particularly to children, who bear without inconvenience the forced elevation of the arm. It should be continued for eight days at least; the longer the better. Berger fastens the arm in a gauntlet which reaches above the elbow, made of elastic cloth, by straps and buckles to a dog-skin hood fitting over the head, neck and shoulders. This allows a little mobility and free circulation to the arm."

Presse Médicale (Paris), July 12.

Mucoid Transformation of Glandular Cells of Intestine in Infants. A. B. MARFAN and BERNARD.—The lesion is observed in all catarrhal enteritis, but is more pronounced in acute attacks and is most intense in cholera infantum. Between the cells of the epithelium and especially between the cells of Lieberkuhn's follicles, certain rounded, refracted bodies appear, of a vitreous or hyaline aspect, resembling the balls of mucus in the goblet cells but differing from them by their greater number and by other characteristics. The writers conclude that these refracting globes are analogous to mucus, and are a modified, pathologic mucus or mucoid substance. If it is a phenomenon of defense on the part of the organism, it is frequently inadequate, as in spite of it, the microbes make their way through the intestinal epithelium and invade the tissue of the mucosa. Even in subacute cases with the alterations very pronounced, healthy glands are always found beside the transformed glands, and as almost the entire digestion and absorption of the milk in nurslings occurs in those portions of the intestine least affected, all seem to indicate that the initial and important morbid action in epithelial or catarrhal gastroenteritis is located in the contents of the intestine, rather than in its walls.

Focal Lesion of Internal Capsule. M. DIDE and G. A. WEILL.—In this observation a circumscribed focus in the internal capsule without other cerebral alteration, caused laryngeal paralysis on the opposite side, with Weber's syndrome. The symptoms and anatomic alterations indicate that the intracortical laryngeal fibers pass into the capsule near the knee, at the anterior part of the posterior arm; also that laryngeal paralysis accompanying Weber's syndrome is in relation with a lesion of the anterior portion of the peduncle of the brain. The frequency of laryngeal paralysis in crossed hemiplegia is also signalled.

Revue de Médecine, April-June.

Frequency of Secondary Septicemia in Course of Pulmonary Infection. BECO.—As a result of a clinical and bacteriologic investigation, Beco concludes that frank pneumonia is a primary infection of the lung. The pneumococcus, thriving in the respiratory passages, exerts its influence on the organism by intoxication, which suffices in a considerable number of fatal cases to bring about the fatal issue. Sometimes the micro-organism, setting out from the primary focus, multiplies

secondarily in the blood stream, and induces a fatal septicæmia. From a practical point of view the presence of the pneumococci in the blood of a pneumonic patient implies a variable prognosis, according as the microbe undergoes multiplication or not. In the latter event it is of little significance from the prognostic point of view, whereas in the former it constitutes a sign of great gravity. Lobar pneumonia may result from infection of the lung by the pneumobacillus of Friedländer.

Semaine Medicale (Paris), July 19.

Purification of Potable Waters with Peroxid of Chlorin. H. BOUGRES.—The process recently invented by Bergé of Brussels, by which peroxid of chlorin, formed by the action of sulphuric acid on potassium chlorate, is used for purification of water, has been applied in Belgium on a small scale, with perfectly satisfactory results—Ostende, Middlekerke and a boarding school at Lombartzdyke. It is also being tried at Liège, and a committee from the French Public Health Department has been investigating it to determine its practicability for general use. The report of the committee is extremely favorable in every respect, although it advises waiting for longer experience with the system before introducing it on a large scale. To prevent danger of explosions the acid is diluted and cold; an aqueous solution of the peroxid is used and a current of air forced across it carries off any gas that may form. It not only destroys pathogenic germs in the water but oxidizes the organic matters in a most remarkable manner, and generates ozone which also assists materially in the purifying effect. The disadvantages of the process are that the peroxid must be in excess in the water, which gives it a peculiar taste like Javelle water and stains it yellow. But the peroxid soon spontaneously vanishes—four hours—indicated by the disappearance of the taste and stain, or by tests with starch water and potassium iodid, and the vanishing process can be hastened by passing the water over coke, when it is at once ready for use. Another disadvantage is that the organic matters must not be too abundant in the water, or too much peroxid would be required, hence the process demands the previous filtration of much contaminated water. The expense for 3 grams of the chlorate, which produces 1 gram of the peroxid, sufficient to purify 1 cubic meter of water, is about \$0.0006. The Traube system of purification of water with chlorid of lime, which has been tried on quite a large scale with Nile water, requires the addition of sodium bisulphite to the water to remove the chlorin liberated by the process. The ozone method now on trial at Lille, endorsed by Calmette, is the only other important rival of the peroxid method of chemical purification.

Berliner Klinische Wochenschrift, June 5.

Varieties of Tabes Dorsalis. ADAMKIEWICZ.—In concluding a communication on traumatic tabes, Adamkiewicz makes the following classification: 1. The usual and most common form of tabes is that attended with primary parenchymatous degeneration of the posterior columns, with ataxia of progressive character, and grossly preserved muscular vigor. Its origin is unknown and it is incurable. 2. Traumatic tabes, which agrees with the preceding in its anatomic basis and its incurability, but is distinguished by its genesis, which is always traumatic, and by its stability, as compared with the progressive character of the former. 3. Syphilitic tabes, which originates in the vessels of the posterior columns, which are especially predisposed to syphilitic changes by reason of their peculiar arrangement. This variety occurs in two forms: a. As acute syphilitic tabes it depends on endarteritic processes, and like these is curable. b. Chronic syphilitic tabes, on the other hand, depends on interstitial changes in the posterior columns, and is thus stationary and incurable. Both forms of syphilitic tabes are characterized by motor weakness, ataxia, slight—in the acute form—or entirely wanting—in the chronic form, and absence of sensory disturbances. The knee-jerks are wanting in all forms of tabes, but in the acute syphilitic variety they may be variable.

Successful Operative Treatment of Case of Otitic Purulent Meningitis. LUCAS.—This author has reported the case of a boy, 14 years old, who at the age of 4 suffered with a discharge from the right ear, possibly as a complication of an attack of measles. The ear had thereafter suppurated with periodic intermissions. The boy had complained for a week of pain behind the right ear, and on examination the mastoid process, particularly toward its apex, was found sensitive, though not

swollen. The auditory canal was wide, and contained purulent fetid secretion in moderate amount. At its depth it was obstructed by large granulations, projecting from its roof, and almost entirely occupying its lumen. Hearing was impaired on the right, the temperature was slightly elevated, and the pulse accelerated, but the ophthalmoscope revealed no abnormality. A day later, the patient could not sleep on account of headache, and the neck began to be stiff, while the temperature rose a little more, and the frequency of the pulse increased. In view of the gravity of the symptoms, and the probability that a purulent leptomeningitis had set in, the mastoid process was trephined, and pus reached at a considerable depth, together with granulations and cholesteatoma masses. The exposed dura appeared necrotic and, on the introduction of a sound, pus escaped by its side. An incision into the cerebral substance was unattended with the escape of further pus. The exposed cavity was carefully cleaned. The stiffness of the neck continued for some time, but the wound progressed favorably. About two weeks after the operation it was noticed that the hearing of the left ear was also greatly impaired, but this subsequently returned to normal, and in a short while the wound had entirely healed. It is believed that there existed a basilar meningitis limited to the right temporal lobe. The appearance of deafness in the left ear is attributed to hyperæmia in the labyrinth resulting from transmission of irritation by continuity. Cerebral deafness of cortical origin is thought to be exceedingly rare, as each auditory nerve has bilateral representation, and the bearing function of one hemisphere, when lost, is readily taken up by the opposite hemisphere.

Centralblatt f. Chirurgie (Leipzig), July 8.

The Tobacco-Pouch Suture. F. DE QUERVAIN.—Doyen has lately been extending the application of the pucker string suture to abdominal surgery, using it on the appendix, intestine, stomach and Douglas's sac after abdominal hysterectomy, and now Quervain, after extensive tests on the cadaver, announces that it is stronger than the Lembert suture and is peculiarly adapted to the peritoneum, when the latter is movable and the opening is of moderate size. The ends can be tucked in and the thread drawn tight like an anus, or the edges can be left out and the stitches taken with longer stretches on the outside, which forms a particularly strong and effectual method of suturing organs invested externally with serosa, such as the intestines and gall-bladder. He is confident that one trial will convince all of the remarkable advantages to be gained from this suture on the peritoneum.

Centralblatt f. Innere Medizin (Leipzig), No. 27.

Therapeutic Action of Dialysate of Digitalis. H. BOSSE.—This Swiss preparation of the freshly plucked plants, made by a special dialyzing process with water and alcohol, enables the essential principles to be accurately dosed: each part by weight of the dialysate, corresponding exactly to a part by weight of the plant. No powerful reagents are used in its preparation and ten cases of severe cardiac disturbances treated with it reacted promptly and effectually, fully demonstrating that it is the equal of other preparations of digitalis, to say the least. The effect on the diuresis was most marked.

Centralblatt f. d. Grenzgebiet der Medizin u. Chirurgie, June 15.

Artificial Alimentation by Subcutaneous Injection. A. BASS.—The conclusions of this comparative study of all that has been written on the subject since Menzel and Perco in 1869, are that artificial alimentation by subcutaneous injection is both practicable and effectual, and if the precautions indispensable to all subcutaneous injections are observed, is absolutely free from danger. Albuminous substances are not adapted to this form of aliment-ation, although Blum's proteogen possibly inaugurates a new era in this respect. Certain carbohydrates, grape sugar in particular, are readily absorbed in moderate amounts and protect the albumin, but symptoms of irritation occasionally follow. Fats can be injected even in large amounts without causing the slightest symptom of irritation. They are entirely assimilated if rationally administered, and effectually protect the albumin. Subcutaneous injections of oil can even increase the weight. Alimentation by a combination of these three groups is only a question of time. The injections, especially of grape sugar and oil, are easily managed *in praxi*, using either a large hypodermic syringe or Leube's combination of needle, tube and funnel, which is simple and kept aseptic without difficulty.

Dermatologisches Centralblatt (Berlin), July.

Improved Technic of Irrigating the Urethra and Bladder According to Janet's Method. L. SPITZER.—Extremely satisfactory results from every point of view have been attained in Professor Lang's service at Vienna, with an improved irrigator consisting of a glass tube terminating in a slightly enlarged, almost spherical tip, the whole divided its entire length by a glass partition, into two spaces, each continued at the rear into a diverging branch, the whole forming a Y, each branch fitting into a rubber tube. The irrigator is not inserted into the urethra, but fits against the orifice, and is so easily managed that an intelligent patient can make his own irrigations. The fluid flows in through the upper tube and space and out at the other, the flow controlled by squeezing or kinking the rubber tube. Irritation from inserting the irrigator into the urethra is thus avoided; with care none of the fluid escapes and the hands remain clean and dry. The entire process occupies much less time than by any other method, which with the copious irrigation allowed is a most important factor in a rapid and thorough cure.

Deutsche Medicinische Wochenschrift (Berlin), July 20.

Sporadic and Epidemic Purulent Cerebrospinal Meningitis. E. STADELMANN.—The writer classifies acute meningitis as the purulent, the epidemic cerebrospinal and the tuberculous, with Quincke's new "meningitis serosa." He does not consider that epidemic cerebrospinal meningitis is due to any single micro-organism, but that two at least are concerned in its production: Fraenkel's pneumococcus and in the second rank, the meningococcus, with possibly others. He describes an observation in which the entire course of the disease was followed by inspection of the cerebrospinal fluid obtained by lumbar puncture: the pus cells were gradually destroyed and finally absorbed, the fluid regaining its clearness. The case was also peculiar in the recovery after intensely serious symptoms, and also from the fact that a hitherto undescribed bacterium was obtained pure in cultures which did not develop until eight days had elapsed after sowing; extremely motile, thick rods, staining with the usual anilin stains but not taking the Gram. In regard to the obligatory notification of epidemic meningitis he thinks the physician might restrict his declarations of cases to those in which Fraenkel's pneumococcus or Weichselbaum's meningococcus are found by lumbar puncture, and that other cases, due to other bacteria or cocci, are not contagious or malignant in the same way, and do not impose notification.

Epidemiology and Bacteriology of Cerebrospinal Meningitis. H. JAEGER.—It is Jaeger's opinion that we are probably in an epidemic period of meningococcus infection, which has of late years supplanted the Fraenkel pneumococcus in the etiology of most cases of cerebrospinal meningitis. Accepting the assumption of an epidemic period, the peculiarly resisting vitality of the meningococcus on the one hand, and its widespread dissemination, with the evidently slight disposition of human beings for the infection—manifested in the comparative smallness of the epidemics—would easily explain the epidemic and sporadic character of the cases. Careful scrutiny of those that have occurred in Germany the last few years, especially in military circles, shows that all the so-called sporadic cases radiate from a center of infection, and that a sporadic case may start a new center, even after long periods of latency of the microbe in dry dust. He also calls attention to the difficulty of differentiating the meningococcus from the staphylococcus, which has possibly been a source of error.

Deutsches Archiv f. Klinische Medizin (Leipzig), lxiii, 1 and 2.

Diazo-Reaction in Urine. CLEMENS.—Extensive chemical research on this subject is reported and clinical investigations which establish that normal urine never reacts positively, but that the diazo-reaction occurs in by far the largest majority of cases of typhus abdominalis, and its absence militates against the assumption of typhus in doubtful cases and positively excludes the possibility of febrile gastro-enteritis. The reaction is frequently positive in other febrile diseases, such as measles, scarlet fever, tuberculosis and especially miliary tuberculosis. The reaction seems to indicate that an abnormal katabolic product of the organic albumin is eliminated in the urine.

Latent Fever in Chronic Tuberculosis. MIRCOLI.—By latent fever, Mircoli designated all disturbance in the regulation of warmth that occurs without elevation of temperature above normal. He established, for instance, that the variation be-

tween the external and internal temperature of persons with tuberculosis is greater than with normal subjects, also that their body temperature reacts more to internal and external stimuli, such as physical exertion or dietetic disturbances. The sweats of tuberculosis are independent of the fever, and are caused by certain toxins of the tubercle bacillus which are without influence on the temperature.

Prager Medicinische Wochenschrift, July 6.

New Method of Draining After Operations for Empyema. G. FELKL.—A glass tube about 5 cm. long, with a circular groove at the point where the lips of the wound close over it, is inserted in one end of the perforated drainage-tube. The latter is then placed in the wound, the two ends together, forming a loop and proving a most effectual drain. The loose end of the rubber tube is drawn out and cut off as healing progresses. Three cases of fresh uncomplicated empyema thus treated healed promptly and the resection of a rib was avoided.

Nordiskt Medicinskt Arkiv (Stockholm), June 30.

Operative Treatment of Ankylosis of the Stapes. B. FLODERUS.—By an operation devised after much study and experimenting on cadavers, but without experience on man, Floderus proposes to replace a portion of the external wall which interferes with the transmission of sound into the labyrinth, by an elastic vibrating membrane which can transmit the sound perfectly into the internal ear. It promises fine acoustic functional results, freedom from relapses and comparatively little danger of infecting the middle ear, while it is practicable even in cases of extensive hyperostosis. It is especially adapted to cases of bony ankylosis of the vestibular articulation of the stapes, and although delicate and long, is evidently superior in many respects to the unsatisfactory operations on the stapes now in vogue. The middle ear is opened according to Stacke; the membrana tympani, the lateral wall of the attic, the malleus and the incus are extirpated; the labyrinth is trephined at the front edge of the fenestra ovalis, and the thin plate of bone is resected from a point 2 to 2.5 mm. from the anterior edge of the fenestra ovalis almost to the rear edge of the stapes plate, the resected surface measuring 2 mm. at the back and 1 mm. forward. The defect is covered with a Thiersch flap taken from the dorsal side of a finger over the middle phalanx, which forms the vibrating membrane.

Clinical Investigations of Frequency of Microbes in Blood. C. DE FINE LICHT.—Tests with one part blood to ten parts bouillon kept in the thermostat for a day or so, developed colonies of microbes in the case of several febrile diseases in 31 out of 72 subjects with various affections. The conclusions are that bacteria, and most frequently the staphylococcus, will be found in almost all fevers produced by pyogenic microbes, as well as by the typhoid bacillus, the pneumococcus and other similar bacteria, when the temperature has risen above 39 C. When the microbes once enter the blood they may linger in it a long while, three months in one case of phlebitis and another of appendicitis, even though the temperature may have returned to normal or below. The microbes were found in the blood without evidences of fever, in only two cases, one a patient with ileus, who died with intestine intact, and temperature under 38 C. when the staphylococcus was first noted in the blood. The other was a fatal case of diabetic coma, the staphylococcus discovered the day before death, while the comatose condition, was still incomplete.

Societies.

International Congress on Behalf of Blind.—An international congress for the amelioration of the condition of the blind is to be held in Paris, Aug. 1 to 5, 1900. For particulars address the Secretary-General, Maurice de Sizeranae, Avenue de Breteuil, 31, Paris.

Canadian Medical Association.—The thirty-second annual meeting of this Association is to be held at Toronto, August 30, 31 and September 1, during the first week of the Industrial Exposition in that city. The building of the Education Department, through the kindness of the Honorable Minister of Education for Ontario, has been placed at the Association's disposal, and on the program interprovincial registration will be

fully discussed. In addition to the scientific phases, there are entertainments, receptions, musicales, an afternoon tea at the Royal Canadian Yacht Club on the island, a smoking concert, etc.

Rocky Mountain Interstate Medical Association.

Salt Lake City, July 25-26, 1899.

Although the Rocky Mountain Interstate Medical Association was organized at Denver last year, when the profession of that region was gathered together to attend the meeting of the AMERICAN MEDICAL ASSOCIATION, this was its first meeting for the hearing of scientific papers and discussions.

MEDICOLEGAL SUPERVISION OF PROSTITUTION.

DR. SALATHIEL EWING of Salt Lake City advocated this as a sanitary measure. While this vice should be restricted as much as possible, the experience of 4000 years showed it could not be eradicated. He favored licensing, weekly inspection, strict quarantine and treatment of the diseased in hospitals. The funds obtained by licensing should be wholly expended in support of the necessary hospitals, and institutions for the reformation of prostitutes. He cited the experience of St. Louis with such supervision of prostitution, as showing its effect in markedly lessening the prevalence of venereal diseases.

DR. H. S. SCOTT, Salt Lake City, believed that all prostitutes should be compelled to reside in houses of prostitution under close police supervision, and that medical examinations should be made twice a week by specially trained examiners.

DR. L. FREEMAN, Denver, said that the most excellent systems on paper had failed to work in practice. He cited the theoretically complete plan in operation in Vienna, which had failed to suppress, or even to notably diminish venereal diseases.

TREATMENT OF CHOREA.

DR. S. D. HOPKINS, Denver, read a paper on this subject, based on nineteen cases. He had obtained the best results with antipyrin, administered by the method of Dr. J. T. Eskridge; but he would not undertake any case unless his directions would be rigidly carried out. In the mildest cases the patient is permitted to sit up a part of the day; but in severe cases absolute rest in bed is enjoined. Antipyrin is given in increasing doses, the initial dose being as many grains as years in the child's age; with an increase of one grain per day. In mild cases the antipyrin is given only in the evening. In severe cases it is at first given three times a day. He does not give antipyrin when the patient shows any fever, or when there is any disease of the heart.

As soon as the choreic movements cease, or become greatly diminished in frequency, the antipyrin is stopped. Fowler's solution and iron are continued for two or three weeks after the cure appears to be complete.

DR. HUBERT WORK, Pueblo, Colo., found the rest cure often sufficient for the cure of chorea, without any drug treatment. Rest in bed is not always essential; but the patient must be kept away from other children, and free from excitement.

DR. JUDSON DALAND, Philadelphia, called attention to the anemia which generally attends chorea, by the relief of which arsenic does good. Auto-intoxication from fecal retention is also an important element in these cases; and treatment by caesara and enemas produces very satisfactory results.

HYDATIDIFORM MOLE.

DR. SOL G. KARN, Leadville, Colo., called attention to slight additions that had of late years been made to our knowledge of the subject. He had attempted to ascertain its relative frequency, and the influences which might cause it. Letters of inquiry were sent to 400 physicians, and responses were received from 78, and these included the mention of 12 cases he reported; 3 of these cases, seen by himself. This study showed the hopelessness of obtaining accurate statistics, and threw no light on the causation of the disease.

HEMOPHILIA.

DR. A. A. KERR, Salt Lake City, reported two cases. One patient was a boy of 10 years with healthy parents. The mother's brother had died of hemorrhage after an operation, at the age of 17 years; 2 other children of the same parents were healthy, and had died of hemorrhage at the ages of 12 days

and 6 months respectively. The second case was that of a baby 10 months old. The family history was negative.

ADDRESS OF THE PRESIDENT.

DR. C. P. HUGHES dwelt on the need for the closer association of the physicians of the intermountain states, who were too far removed to regularly attend the meetings of the special societies held in the eastern states, and had to deal with many problems of peculiar interest to themselves. He favored regulation of the practice of medicine, but thought members of the profession of recognized ability and experience should be free to practice in any state, and that membership in the AMERICAN MEDICAL ASSOCIATION ought to be evidence of such fitness for practice. He touched on some questions now especially demanding the attention of the profession.

USE OF THE HEMATOKRIT.

DR. JUDSON DALAND, Philadelphia, pointed out the difficulties and extreme tediousness of making blood counts, the necessity of repeating them, and the large probability of inaccuracy. The method of estimating the volume of corpuscles with the hematokrit is not exactly comparable with the blood count. But on account of the rapidity with which it can be completed, it is of great practical value. With everything in readiness, and an assistant, the estimation can be effected in three minutes. More time is consumed in cleaning the apparatus and keeping it in order. Unless the tendency to coagulation of the blood is unusually great, it is not necessary to use any diluting fluid to prevent coagulation. Rapidity of manipulation is of the highest importance, to secure accuracy of results. He has found that 10,000 revolutions per minute for two minutes gives a satisfactory result. Treated thus, normal blood gave 50 per cent. of its volume corpuscles. This was taken as the standard, and the percentage read off from the instrument being multiplied by two gave the percentage of the normal. Thus if the corpuscles occupied thirty-hundredths of the tube, the blood contained 60 per cent. of the normal volume of the corpuscles. For comparison with blood counts 100 per cent. thus obtained might be taken as the equivalent of 5,000,000 corpuscles to the cubic millimeter.

FIBROID LUNG INDUCED BY EXPOSURE TO DUST.

DR. W. W. BETTS, Salt Lake City, has made a study of the fatal disease induced by working in the dust caused by grinding ore at De La Mar, Utah. The quartz ore here reduced forms a very fine powder; and he was informed that of a large number of men, all who had been exposed to this dust for a period of seven to nine months prior to January, 1898, were now dead. One case endured an exposure of eighteen months before becoming affected, and is still living. In contrast with this was one affected within three months and dead within ten months.

In 14 tabulated cases, the men having been 23 to 43 years of age, and all healthy when they engaged in the work, the average time they were able to work was thirteen months, and the average time of survival after leaving the mill ten months. Two autopsies were reported. In one the pericardium was greatly diseased. In both the lung was excessively firm, the air-cells largely obliterated by great increase of fibrous tissue. Chemical analysis showed silica present to the extent of 2.8 per cent. in the lung tissue and 3.8 per cent. in the bronchial glands. The only remedy of any value was prophylaxis.

DR. F. CLIFT, St. George, Utah, stated that all the men who had gone from that place to work in the De La Mar mills had come back with this disease. They were free from tuberculosis, and had previously been healthy.

DR. J. N. HALL had noticed among miners working at high altitudes, fibroid phthisis with emphysema.

DR. MAYO, surgeon of the De La Mar Company, believed that the number of deaths had been overrated. With the help of the records of the company, he had carefully investigated the matter, and found that of those who had worked there within the last four years thirty-four had died. Since their attention had been called to it the company had made extensive changes in their mills, supplying fans, hoods, ventilators, and respirators for the men, and instructing them with regard to their use. The men were not now in greater danger than when shovellers, grinders, and other workmen continuously exposed to dust. He believed that a similar mortality would be found

among the workers in other mills handling the same kind of ore. He thought the disease when once contracted was necessarily fatal. The De La Mar company desires to aid in the investigation of the subject, and will welcome any practical suggestion as to prophylaxis.

REPEATED EXTRA-UTERINE PREGNANCIES.

DR. C. R. FLEMING, Denver, read a paper on this subject, and reported two cases. The first case, after symptoms of rupture, had presented evidences of sepsis, and had been treated three weeks for typhoid fever. She recovered after the opening of a pelvic abscess. Eighteen months later, having menstruated regularly in the interval, she had a similar attack, but refused operation and slowly recovered without it. The second patient was operated on after the symptoms of tubal rupture, and a pelvic hematocoele removed. One year later symptoms again appeared, and operation showed the right tube ruptured, with a large blood clot in it. She again recovered. Both of these patients seemed to have been free from previous disease.

CARCINOMA OF UTERUS.

DR. W. W. GRANT, Denver, called attention to the increasing mortality from cancer, and its strong predilection for parts exposed to both traumatism and infection; especially the uterine cervix in women. On early diagnosis rests the only chance of cure. He advocated frequent examination of women near the menopause, with microscopic examination of suspicious lesions. In women who have borne children, all lesions of the cervix should be repaired at 40 years of age. Dangerous lacerations of the cervical canal might show little evidence of disease externally.

DR. J. B. PERKINS, Denver, urged that the danger of carcinoma could be lessened if we prevented laceration of the cervix, by giving plenty of time for its dilatation during labor.

(To be continued.)

California Academy of Medicine.

July Meeting.

THYROID EXTRACT IN MYXEDEMA.

DR. HERBERT C. MOFFITT presented a patient illustrating a case of myxedema treated with the thyroid extract. The patient, an Irishman, aged 43, gave no family history. All his relations, so far as he knew, were healthy, and had no trouble in any way similar to his own. The family was rather a long-lived one. He came to this country in 1868, and went at once into northern California, where he worked in the mines. At that time he was drinking mountain water, but noticed no trouble therefrom. In 1873 he met with an accident, dislocating his shoulder and breaking the clavicle, but so far as can be ascertained, no injury was sustained by the thyroid, and no ill effects followed. No goiter had developed either from this cause or from the water. He then worked in gas works, where he was exposed to overheating and sudden cooling. He followed this occupation for some years, and it was while employed in this kind of work that he first noticed symptoms of myxedema. This was seven years ago. He then commenced to gain in weight and become larger, especially in the regions of the knees, hands and face. He felt unwieldy, some slight coldness, and a general stiffness in movement. His walking was difficult, and his memory began to fail. Very shortly after the commencement of the symptoms, he could, with great difficulty only, remember recent events, and soon he was quite unable to remember anything save the episodes of his youth. This condition of affairs persisted for some three or four years, during which time he consulted many doctors, but without avail. He went to the country for a time, but again returned to the city, where he consulted Dr. Montgomery at the University of California clinic.

A lesion of the left side of the lower lip was noticed and diagnosed as epithelioma, for which he was sent to the City and County Hospital, where the growth was removed by Dr. McLean. At that time no thyroid extract had been administered, so that the effect on the epithelioma could not be determined in this case. After the operation he was referred to the medical wards of the Hospital for treatment for his general condition. Thyroid extract was at once administered. His condition before commencing the administration of the thyroid extract was as follows: The body was perfectly hair-

less—not only had the hairs of the head and face fallen out, but the hair on the entire surface of the body had also been affected. The memory was very bad; there was puffiness over the hands, face, knees and supraclavicular regions; the cheeks were red, as frequently seen in myxedema. The picture commenced to change at once on the administration of thyroid extract; he lost 47 pounds, the memory cleared up entirely, the hair returned on the head and all over the body, and the growth was thicker than previously. He left the Hospital absolutely well, and returned to his work. So long as he took thyroid extract he remained well, but cessation of the extract for a time brought on a return of the symptoms. At one time he took no thyroid for two months, and then returned to the Hospital, as bad as ever, with the exception that the hair had not fallen out to the same extent. At a subsequent time he went three months with no thyroid, and then returned with evidence of epitheliomatous trouble at the site of the old growth. He was placed on the thyroid extract for a while, and the appearance of the growth seemed to improve, but the change was not very rapid, so it was decided not to delay its eradication, and he was again operated on for the removal of the epithelioma. He has now been under thyroid treatment for about three weeks, after a lapse of no thyroid ingestion; he is much improved, the memory being again cleared up, some flesh having been lost, and the general condition rapidly improving.

DR. HERBERT C. MOFFITT—The story of this case is told by the man's hands and face, practically, for there is no other indication save what may be seen. The face is somewhat puffy, and the hands and wrists are in the same condition; the thickening under the eyes can be readily seen. He has had absolutely no trouble other than recounted; no hemorrhages after the operations, and no disturbances of any kind. There can be no question of the value of the thyroid extract in this case or in similar conditions. In myxedema, we may assume, thyroid is of great value, but in sporadic cretinism its value is problematic. I should like to mention a few of the other conditions in which thyroid extract has been used. It has been employed in a large number of different disorders and affections, sometimes with good, but more often with negative results. In psoriasis it has been found to be of much value, though the eruption seems to always return, whether the thyroid extract be continuously administered or not.

In some forms of insanity it also seems to be of value; it has been tried in many varieties of alienation, but seems to be useful in melancholia, principally; in epilepsy it is of no value whatever.

Another condition often mistaken for rheumatism, but in all probability, as described by Dercum, an early form of myxedema, is that in which the arms, back, belly and knees are found to be the seat of pads of fat; there is also an appearance of premature senility, together with pains and stiffness that strongly simulate rheumatism. The condition is at once relieved by the use of the thyroid extract. The extract has also been largely used in the treatment of sundry bone affections. In the case of delayed union after fracture, it may be of slight value; in rachitis it is of no value whatever. In the case of exophthalmic goiter, which is really a condition of over—rather than under—thyroidism, the ingestion of thyroid extract seems to be of no value, though a certain number of patients do improve under treatment by this agent.

In chlorosis most patients exhibit a slight enlargement of the thyroid gland, which may in some cases be marked. This enlargement seems to be glandular, and not vascular, and of the variety which we find physiologically at the times of menstruation and pregnancy. I am inclined to believe that some of the symptoms which we find in these cases of chlorosis are due to the enlarged thyroid, and that they are not all due to simple slow circulation, or enlargement of the jugular bulbs; these factors will not account for all the symptoms. Here the thyroid extract does not seem to be of value, perhaps owing to the over, rather than under, thyroidism. In chronic nephritis, thyroid extract has been strongly recommended, and is in some cases of slight benefit, though its value is problematic.

Thyroid extract has been strongly recommended in the treatment of inoperable cancer, and as an after-treatment following operation for the removal of cancer, to prevent recurrence. This usage of thyroid extract is strongly recommended in Eng-

land, where large doses are being used, with beneficial results reported. In affections of the prostate, and for myomata, it has been employed, but without result. Other forms of skin disease aside from psoriasis have been treated by means of the thyroid extract, but with less marked results than in the case of the disease mentioned, where it seems to have a truly marvelous effect. After a few days' treatment with the extract the lesions in psoriasis melt away like magic. Unfortunately they return in the course of time, whether ingestion of the extract be continued or not. It has been used for the treatment of lupus, but without effect, as also in the case of eczema, where, too, it seems to be of no benefit.

We find a certain amount of thyroid enlargement in a number of cases not classified, in which the affection of the thyroid has, in my opinion, an influence on the pathologic conditions that is not accepted at its true value. The case of chlorosis is an example, and we also note certain cases of affection of the male genital organs, where there is also a disturbance of the thyroid gland. I have recently seen several patients illustrating this condition. There is heart tremor, together with general nervousness and malnutrition, and the presence of an enlarged thyroid may be determined, varying in the extent of the enlargement. The symptoms are such as one sees in tobacco poisoning, but the cause is probably masturbation; at least, the patients generally give a history of excessive masturbation. Cessation of the evil practice, together with treatment by bromids and arsenic, and correcting the habits, generally cures the case. It is not a tobacco infection, for several of the patients in whom I have noted this condition do not smoke at all. In tobacco poisoning we also have an enlargement of the thyroid, but the condition is quite distinct from the case I have just mentioned.

In regard to the form of administration I would like to say a word. I have tried many methods and forms of preparation. The fresh gland is not reliable, for the butcher occasionally supplies some other gland. Parke, Davis & Co.'s tablets I have used, but find them often unreliable. I have used them with excellent results, for a time, but when the supply ran out and a fresh lot had to be obtained, all evidence of thyroid ingestion ceased. They vary, thus, very largely. I find the tablets made by Burroughs, Welcome & Co. very much more reliable, and use them, now, altogether. The effect from them is constant, so far as my experience has gone.

DR. JAMES F. McCONE asked Dr. Moffitt what his experience in the treatment of obesity by thyroid extract had been.

DR. MOFFITT, in reply—I have not used it much for the purpose mentioned. Epstein, who suggested the method of dealing with obesity, in his later report does not demonstrate its usefulness. I do not think it is of value, for though there may be a loss of a few pounds in weight, the weight runs up again as soon as the patient ceases to take the extract. In a number of cases, too, there have been very unpleasant complications resulting from thyroid poisoning.

DR. S. J. HUNKIN—I know of a patient who, of her own suggestion, took thyroid tablets for the purpose of reducing her weight. She weighed 220 pounds normally, and in a month could reduce herself twenty to thirty pounds by using the thyroid. After their use for a short time she would, however, be troubled with shortness of breath, and her mother would make her stop their use. She would then return to her former weight.

DR. J. F. McCONE—I have been using thyroid extract in the University clinic for the past two years, for the purpose of reducing weight, and have found that about three out of five patients respond to its influence. I remember one woman who lost sixty-five pounds in three months under this treatment. I do not know whether the fat returns, for it is impossible to observe many of these patients for any length of time. We have used it, too, for reduction previous to operations, and here it seems to be of use. I have not observed any unpleasant symptoms in these cases.

DR. S. J. HUNKIN—I have one patient who now has nephritis; I am not certain, but have every reason to believe that the nephritis was not present at the time the use of the thyroid was commenced.

DR. GEO. H. EVANS—I have made use of thyroid extract for reducing obesity in a few cases, and have found that if the diet is changed the weight is lessened; if the thyroid is ad-

ministered without any attention being paid to the diet, no alteration in the weight seems to follow. I had therefore thought that the reduction was more probably due to the diet than to the thyroids.

DR. DOUGLASS W. MONTGOMERY—I first saw this patient on June 4, 1897. My case-book gives me data as follows: He was at that time 41 years of age, and gave no family history. There was very evidently a condition of myxedema present, besides an epithelioma on the left side of the lower lip. He had very red cheeks, spade hands, yellowish skin, puffiness in the supraclavicular spaces, and no thyroid gland could be detected. He was ordered thyroid gland extract, and sent to the City and County Hospital for operative removal of the epithelioma. I again saw the man on April 15 of the present year. He then came once more to me at the University clinic, presenting the symptoms and condition given by Dr. Moffitt. I noticed two keratoses, one on each side the scar of the operation for the removal of the old epithelioma, but was not sure that it was a recurrence of the epitheliomatous growth. I sent the man once more to the hospital, and the subsequent history of events has been given you by Dr. Moffitt. Under thyroid administration the keratosis much improved; the skin softened, and the hard, scaly appearance disappeared almost entirely; whether it would eventually have disappeared, or been cured under the thyroid treatment, it is impossible to say.

The extract of the thyroid gland does undoubtedly have a very decided effect on the skin; principally on the general nutrition of the skin. In those cases where there is a hard, dry, scaly skin, with a seborrheic eczema of the scalp, and falling out of the hair, administration of thyroid gland improves the condition very much indeed. In psoriasis the disease is not cured, for, as Dr. Moffitt has said, it returns whether the administration of the gland be continued or not. I attribute the good effect in these skin diseases to the general tonic action on the skin, and not to any specific action on the disease itself. The nutrition of the skin being improved, in any skin disease, improvement will follow; I think it is just so in psoriasis. The action is one secondary to an improved nutrition of the skin.

(To be continued.)

Chicago Academy of Medicine.

Regular Meeting, June 23, 1899.

(Continued from Page 350.)

GYNECOLOGIC ASPECTS OF PUBERTY IN ITS RELATIONS TO ADULT DISEASE.

DR. T. J. WATKINS—I will limit the few remarks I have to make to the relation of puberty to adult disease in the female, because "the mental and physical peculiarities of the two sexes differ in early life to a limited degree only." It is toward puberty when the organs of generation undergo secondary development, that their influence is exercised in the highest degree.¹⁷ By puberty will be meant the period between childhood and mature adult development. The length of this period of life varies much in individuals, principally as a result of the general health, and may extend over from two to five years. The importance of my subject is best illustrated by referring to the opinions of Emmet and Skene. They conclude, after very extensive experiences, that the majority of gynecologic diseases are the result primarily of imperfect development. Imperfect development is a prominent factor in the etiology of uterine displacements; injury of the pelvic floor at childbirth is often the entire cause of menstrual disturbances, and not infrequently the cause of sterility. With perfect development of the pelvic organs, congenital displacements of the uterus do not occur; and displacements following childbirth are not apt to result except as a sequel of pelvic inflammation.

During an experience of thirteen years in hospital, dispensary and private practice I have examined the pelvic organs of a large number of colored women who have borne children, and I have never, with possibly one or two exceptions, found in them relaxation of the pelvic outlet. Under the term relaxation of the pelvic floor are most cases of so-called important incomplete lacerations of the perineum; rectocele and cystocele.

¹⁷ Skene: Medical Gynecology.

I have, however, found some cases of complete laceration of the perineum in the colored woman not associated with relaxation. The inference to be drawn from this is that the colored woman has a well-developed perineum, and that a well-developed perineum is the best protection against important lacerations at childbirth. You will agree that a well-developed organ resists infection better than a poorly developed one, and this fact is frequently observed in the clinical history of pelvic infections. Nearly all cases of dysmenorrhea in women who have never been infected are due to imperfect development of the uterus.

To secure normal development of the reproductive organs is to secure a uniform, harmonious development of the whole body. There are, however, cases of imperfect development of the reproductive organs in women who have an apparently good physique. This can probably be accounted for by the fact that the reproductive organs get their principal development during a short space of time, and during the time when there is rapid growth of the body in general, and consequently during a stage of more or less impoverishment of the blood.

These facts emphasize the necessity of a large amount of nutritious food, of good air, sunlight, not too much work, especially mental, during the period of puberty.

All management of the child during puberty seems to occur as often or oftener in the families of the intelligent and rich as in the families of the poor and ignorant. No rules can be formulated for the care of girls during puberty; each case should be treated individually and the treatment will depend much on the rapidity of growth, the environment, the temperament, and the general health of the girl.

The statement is frequently made that the women of America are a weak, sickly lot of individuals. If we are, however, to measure health and strength by mental and physical labor accomplished, the women of America compare very favorably with those of other lands.

MATERNAL DRUG-TAKING ASPECTS IN THEIR RELATION TO ADULT DISEASE AND DEFECT.

DR. GEORGE F. BUTLER—Of the vegetable narcotics, the one most abused has undoubtedly been opium, its chief alkaloid having produced more misery and relieved more suffering than any other agent in the materia medica. It is not, however, with the therapeutic use of morphia, but with one of the results of its abuse, that I propose to deal in the present paper.

The close resemblance between morphia and certain products of nerve tissue change certainly tends to indicate that it is less foreign to blood transportation than many other remedies. It is not astonishing, therefore, to find, as Bureau and Ringer have shown, that it passes readily from the maternal circulation through the placenta into the fetal circulation. About thirty years ago this fact was clinically demonstrated by Calkins, who found that the children of mothers addicted to the use of opium died of marasmus unless nursed by the mother or given opium when fed from the bottle. His observations were later corroborated by Erlen and Meyer, F. H. Hubbard of New York, Kiernan and F. B. Earle of Chicago, Madison of Brooklyn, C. E. Hughes of St. Louis, P. C. Layne of Cincinnati, and others.

This congenital opium habit adds one more problem to obstetrics, since it involves both the treatment of the opium-using mother during pregnancy and the mother after delivery. It requires considerable delicate acumen to guide a mother and child between the Scylla resulting from opium deprivation and the Charybdis consequent on opium using. There is very little doubt that the maternal use of this drug during pregnancy produces, as Talbot of Chicago has shown, degenerate children, but it is equally certain that the evils of deprivation are fully as great.

The management of the infantile opium habit when congenital is, however, much less difficult than that of one acquired habit during infancy through the use of soothing syrups, etc. The use or misuse of soothing syrup for infants is much older than generally supposed. Crabbe, in "The Borough," sung of it a century ago.

Among other drugs which may be the source of infantile drug habit are cannabis indica and lactucarium. Both of these have been found to pass through the placenta and would therefore form a basis of a congenital drug habit in the infant.

The experiments as to cocaine are as yet indecisive. The habit, however, is much rarer with women than with men. This is particularly true of the habit as found among the Indians of South America, who had it for centuries. The other drug habits exert an influence on the fetus only through impairing general nutrition. Children of chloral-using mothers have been born checked at the senile time of the fifth month of pregnancy, and hence have borne some resemblance to the cases where syphilis has checked the development in a similar way. In a general way, the effect of maternal drug taking on the fetus may be summed up in the fact that any of the types of degeneracy can be produced by it.

BACTERIOLOGIC ASPECTS OF CHILDHOOD IN RELATION TO ADULT DISEASE.

DR. ADOLPH GEHRMANN—As to the bacteriologic and tubercular aspects of this subject, bacteriology teaches us that the young are the most easily affected; that is, natural immunity increases as the individual grows older, or, at least, to the time of maturity. It may increase later. There are two general conditions, as far as natural immunity is concerned, one that group of diseases of a bacteriologic or infectious nature in which there seems to be immunity, and the other large group against which there does not seem to be immunity of any marked importance. The condition of growth and development in the child, to bring about a perfect condition of maturity, should be one in which natural immunity is developed, as far as it is possible to do so. One of the most marked examples of diseases in which natural immunity can be developed is that in regard to tuberculosis. Of this I will speak in a moment.

In regard to the general diseases of a bacterial nature which occur in childhood, the impress of which is left upon the child in after years, the first one of these, and one of great importance to physicians and to the public at large is that of gonorrhoeal ophthalmia of the infant. We have evidences of this, as you know, in our large public institutions for the blind. I need not at this point bring out any of the various facts in relation to blindness in childhood and its results in after life, or the measures which should be employed to remedy that evil, but I simply present it as one of the obvious facts of bacterial diseases in relation to the effect on the adult due to disease in the child.

The second point is that of the relation of defects due to secondary infection in diseases which are recognized as affections of childhood—the exanthemata—and here the important point to bring out is the avoidance of a mixed or secondary infection during the diseases which are especially liable to occur in childhood, such as pus infection. A great many diseases occur in after life, which have absolutely no relation to anything that can be done in childhood to prevent them. In after years pneumonia will occur, for instance, and other infections due to bacteria which have no relation to anything which occurs during the period of child life, but the suppurative otitis media of scarlet fever may be the cause of changing the entire course of an individual's life.

In regard to tuberculosis, it has always been to my mind a well-established fact that it is a disease of early life, that is, it has its beginning in early life. We see the majority of cases of tuberculosis of bones, either of the joints, or of the spinal column developing during early periods of life. We know the defects and difficulties which result in after life from such infections in men or women who have been so infected.

(To be continued.)

American Association of Obstetricians and Gynecologists.—This association will hold its twelfth annual meeting in Indianapolis, Ind., Sept. 19-21, 1899. It is considered especially desirable that each author of a paper forward to the secretary a concise argument thereof, under three or four separate heads, to be printed in the permanent program. This will add to the interest of the discussions. One of the sessions, or as much thereof as may be necessary, will be devoted to the presentation of pathologic specimens and their histories, with discussions pertaining to the same. Twenty-nine papers are listed on the preliminary programme. Dr. Edward J. Ill, Newark, N. J., is president, and Dr. William Warren Potter, Buffalo, N. Y., secretary.

THE

Journal of the American Medical Association

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance	\$5 00
Foreign Postage	2 00
Single Copies	10 Cents

In requesting change of address, give old as well as new location.

Subscriptions may begin at any time and be sent to

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

No. 61 Market Street, Chicago, Illinois.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, 100 Washington St., Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting, of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

These new members of the Association should send their annual subscription direct to the Treasurer, Dr. Henry P. Newman.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the Editor, and all communications relative to the business of the JOURNAL, proof-sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 61 Market Street, Chicago.

Original communications are accepted with the understanding that they are exclusively contributed to this JOURNAL.

SATURDAY, AUGUST 12, 1899.

MOSQUITOES AND MALARIA.

For many years we have known that malarial fever and certain similar animal diseases are caused by minute parasites of the blood. Considering the number of investigations on the etiology of these diseases, it certainly seemed strange to some that no light could be thrown on the form and mode in which the parasites, especially of human malaria, existed outside of the body, and on the way in which they gained entrance into our bodies. A number of theories were advanced; it was assumed that the microphytes existed in the soil, air, or water of humid regions, multiplying freely in these elements; that they were carried by air currents and in mists and vapors, infecting persons through the air breathed or the water which they drank; and in not a few places it was thought that malaria stood in some close relation to the bite of mosquitoes and other insects.

The mosquito theory of malaria is not of recent origin by any means. It was held by ancient Roman writers whose clinical knowledge of malaria was very accurate and minute; Linné, Sir Henry Holland and others regarded the transmission of malaria by mosquitoes as quite probable; such was also and is to-day the popular belief of peasants in certain parts of Italy and Tyrol, and of barbarous tribes in malarial districts of Africa and elsewhere; and we find the same theory advanced in a scientific manner by such medical men as A. F. A. King and Nott of America, Laveran in France, Manson and England, Koch in Germany, Bignami, Grassi and others in Italy.

In his very complete and interesting review of the whole mosquito theory Nuttall¹ carefully considers the various

general facts and arguments which King, Laveran and others have brought forward in its favor. King looked on such arguments, as he could present, not so much as proof of the correctness of the theory, but rather as incentives to experiments and observations which might lead to convincing discoveries. From the voluminous observations tending in a general way to support the mosquito theory the following features may be selected for mention: The seasonal and soil relations of malaria which prevail especially in moist and warm seasons and in marshy regions—such as the deltas and courses of great rivers and also certain littorals—conditions which certainly greatly favor the development of mosquitoes and other insects; in malarial regions protection against the bite of mosquitoes also protects from malaria, as shown by the results of diverse measures employed by the inhabitants and of travelers through such regions; the decidedly favorable or anti-malarial influence of certain occupations, of cultivation of the soil and also of altitude, presumably the result of the prevention of the sting or of the total absence of the insects. Indeed, it is generally accepted by those who have especially studied the question that mosquitoes always occur where malaria prevails. Grassi, Ross and Koch expressly state that they have not seen malaria in regions free from mosquitoes. It goes without saying that mosquitoes often occur where there is no malaria—not all mosquitoes are necessarily carriers of infection.

The mosquito theory of malaria received powerful support by the demonstration, by Theobald Smith, that the hematozoon of Texas cattle fever is transmitted by the bite of the cattle tick (*Boophilus bovis*); Laveran, Koch and others emphasize that the mosquito probably plays an exactly analogous part in malaria. Based on his demonstration that the *filaria Bancrofti* passes part of its existence in the body of the mosquito, Patrick Manson in 1894 expounded the theory that the organisms of malaria also divide their existence between man and mosquito; arguing from the remarkable fact that the flagellate bodies in certain forms of malaria are not developed until the blood containing them has been outside of the body for some time. Manson drew the further conclusion in favor of his theory that the purpose of the flagellate bodies is the continuation of the life of the malarial parasite outside of the human body. Now the hematozoa can not leave the blood-vessels spontaneously, hence the necessity for the presence and the operations of a suctorial insect. Manson, and also Laveran, believed that the human infection took place by way of drinking water infected by mosquitoes which had sucked up malarial blood and died after laying their eggs in the water, or by the inhalation of dust produced by the drying up of small pools and puddles which once contained infected water; furthermore, that human patients may introduce malaria by infecting the mosquitoes.

Manson's deductions were destined to exercise a decisive influence on this investigation because they pointed out the exact way in which some of the problems should

¹ Cbl. f. Bakt., Abth., I, 1899, xxv, 161 et seq.

be attacked in the actual and crucial experiments which were undertaken with signal success by Ronald Ross, an English army surgeon in India. Shorn of all details the results of Ross' great work during the past three and a half years—1895-1899—may be summarized in the following statements: The "cultivation" of the parasites of human malaria in the bodies of two species of mosquitoes inoculated by being allowed to suck the blood of malarial patients; in the infected mosquito the parasites occurred as peculiar, pigmented cells in the walls of the stomach. Feeding mosquitoes on the blood of birds containing hematozoa (*Halteridium* and especially *Protoosoma*), he traced the formation in the walls of the stomach of large cells which fall asunder into spindle-shaped bodies—"germinal rods"—which are carried by the blood to the salivary glands, where they collect in huge numbers and whence they are discharged into the blood of healthy birds bitten by the infected mosquitoes. It requires seven days or so after the infection of a mosquito before the germinal rods or sporozoites reach the salivary glands, and birds bitten by such mosquitoes fall sick five or six days afterward.

The development of the parasites in the body of the mosquito, as described by Ross, has been confirmed by such scientists as Manson, Laveran, Metchnikoff and Nuttall, who have all examined his specimens.

No sooner were Ross' observations made public than they were confirmed by the independent studies of those indefatigable students of malaria, the Italians, especially Grassi, Bastianelli and Bignami, whose researches in this direction have carried our knowledge of human malaria still further than Ross. They have succeeded in not only infecting persons with malaria through the bite of infected mosquitoes, but they have traced the whole development in the body of the insect of the crescent of the estivo-autumnal type and partly that of the tertian parasite. We are also told that they have found young parasites in the eggs of infected mosquitoes². Malarial parasites have also been found in a large percentage (75) of mosquitoes captured in rooms and localities inhabited by malarial patients.

It will be recalled that Manson and others thought that the infection of persons with malaria occurred through drinking of water or the inhalation of dust containing parasites derived from dead, infected mosquitoes. King and others believed that the bite of the mosquito gave rise to the infection. Koch doubted the direct transmission of malaria from person to person by way of the mosquito; it did not seem likely to produce such a direct infection; if such should be assumed to be the case the disease would have to spread much more rapidly than it actually does—an argument which could now be met, if that were necessary, in the light of recent demonstrations, by the fact that there are many kinds of mosquitoes and that all do not carry malaria.

During their investigation Ross, and more especially the Italians, have learned that not all kinds or

species of mosquitoes act as hosts of the parasites. There are many species, and among them the common or domestic mosquito (Ross), which do not seem to bear any relation to any known hematozoon infection. The particular kinds of mosquito which can furnish the suitable conditions for the growth in their bodies of the organisms of human malaria belong largely to the genus *Anopheles*, of which there are many varieties. Whether other kinds of suctorial insects than mosquitoes can act as the carrier of human malaria has not yet been determined.

Different suggestions have also been made with respect to the modes in which mosquitoes might become infected. Bignami thought that possibly the insects picked up the parasites from the ground, but Dionisi, from his investigations, could find no facts in favor of this view. Mosquitoes eat each other's excrements and possibly become infected in this manner. Or the larvæ might become infected through eating the cadavers of the mothers. Evidence is accumulating, however, which tends to show that mosquitoes once infected by drawing blood, may perpetuate their infectiousness through succeeding generations by transmission of the parasites in a sort of sporing form to the eggs of the female. Grassi has observed spores in mosquito eggs (*Anopheles*) and it has been found that in Italy fertilized females may live through the winter, perhaps in this way preventing the dying out of the parasites.

In connection with this phase of the matter it is inter-résumé of the role of the ectoparasitic tick in Texas fever. In a recent paper, Theobald Smith³ gives a clear résumé of the role of the ectoparasitic tick in Texas fever, the devastating disease which recent studies have shown occurs in Finland, Roumania, Italy, Australia, South Africa and German East Africa. The permanently infected territory in our own country includes most of the Southern States. That ticks carry this disease was suspected long ago; as early as 1868 it was mentioned only to be condemned by John Gamgee. Smith and Kilbourne have shown conclusively by their experiments that the tick carries the disease. The tick is exclusively parasitic in its habits and does not pass from one host to another. The fertilized female after a certain time drops dead to the ground and deposits one to two thousand eggs. After a varying time the embryos emerge, attach themselves to the host and begin a new life cycle. Now by placing animals in a pasture infected with the embryos of ticks from Texas fever cattle the development of the fever is observed to follow. Artificially-hatched eggs of ticks from sick animals also produce the disease when the embryos are placed on healthy cattle. While the life history of the parasite in the tick has not yet been traced—the Texas parasite has not yet been found in the eggs of the tick—yet it is warranted to assume that the eggs carry the infection and that the young tick discharges the para-

² Nuttall, loc. cit.; see also "Koch and His Methods," correspondence in the Phil. Med. Jour., July 15, 1899, p. 103.

³ The Etiology of Texas Fever, with Special Reference to Recent Hypotheses Concerning the Transmission of Malaria, N. Y. Med. Jour., July 5, 1899.

sites into the host during the process of drawing blood. Smith assumes that partially immune cattle, in the blood of which the hematoozon may exist for years, under suitable states become the source of new centers of infection through the agency of the tick. Reasoning by analogy, Smith suggests that malaria may spread in a similar manner. Brought into a perhaps hitherto non-malarious district in the body of human beings suffering perchance from a chronic or mild infection, mosquitoes transmit the parasites to younger broods which again spread the infection among men. In temperate climates it is not unlikely that the parasite is protected over winter in the bodies of human individuals. Certainly the scattering of an infected brood of mosquitoes explains well what seems to happen in the newly malarious territory. Whether certain animals can harbor the malarial parasites of man is still undecided. Dionisi has found a hematoozon of the bat which resembles human varieties very much.

Reconstructing, in the light of the new facts, the developmental history of the malarial parasites, we find, as pointed out by the Italians, that human as well as animal parasites, or hematoozoa, possess intermediate hosts and alternating sexual and non-sexual generations. The intermediate host is a warm-blooded animal, including man. The definitive host is an acarus (mite) or a diptera (mosquito, etc.). In the warm-blooded animals the parasites multiply rapidly by segmentation; temporarily unproductive, sexual forms (crescents, flagellate bodies) are also formed, which copulate—probably as described in the case of certain hematoozoa of birds, by MacCallum⁴—when they reach the stomach of the definite host; a sporoblastic form results, from which sporozoites arise, accumulate in the salivary glands of the hosts, when they are deposited in warm-blooded animals during the bite of the insects—a complicated yet simple cycle analogous to that of many other organisms requiring two hosts for their development: *Tenia solium*, *Trichina spiralis*, *Filaria Bancrofti*, *Filaria reconditia*, the organisms of Texas fever and Tsetse fly disease. In the case of malarial organisms the insects are spoken of as definitive hosts because they harbor the higher stages of the development of the parasites.

The old mosquito theories of malaria are therefore to be considered as definitely verified by the results of recent experiment research. As a direct outcome of these new facts is to be noted the possibility of exterminating malaria from infected areas by preventing the development of dangerous mosquitoes, as advocated by Ross.⁵ He points out that the harmful insects in a given locality may be detected by ascertaining, according to Manson's induction method, whether the parasites of malaria will live in them or not; that the breeding grounds—small bodies of water—can be found by searching for their larvæ, which have distinguishing characteristics; if these spots

are sufficiently isolated and care is possible that the mosquitoes could be exterminated by filling up or draining the pools and plashe, or by the use of certain chemicals such as kerosene, which has been found quite efficacious in preliminary experiments. In the northern parts of the United States it is likely, as emphasized by Smith, that the prevention of stagnation of surface water would tend to hinder the springing up of the small foci of malaria noticed every now and then. It seems that war is about to be declared against the vexatious mosquitos.

BRITISH MEDICAL ASSOCIATION.

The JOURNAL has been favored, through the courtesy of the Editor of the *British Medical Journal*, with advance sheets of the general addresses and those before the sections of the British Medical Association. Some of these we hope to publish in full, or more fully abstract at an early date.

The address in medicine, by Sir Richard Douglas Powell, reviews a number of questions of practical interest, newer methods and instruments of precision in diagnosis, the superposition of infections, anomalous fevers and their diagnosis, the questions of immunity and susceptibility and serum therapeutics. As regards the prevention of tuberculosis, he especially cautions against alarming and exaggerated statements as to its contagiousness, "the evidence in regard to which except under the almost experimental conditions alluded to, is extremely slender." At the close of his address he adds a table indicating the actions of various sera.

Dr. Ogston's address in surgery is chiefly devoted to the disabilities of the medical men in the British naval and military services, and to the pointing out the needs of reform in these matters. He shows that the existing evils tend to perpetuate themselves, points out the remedies and gives as illustrations some account of the naval and military medical systems of Germany, France, and Russia. The scheme of reform and the danger of trusting to the broken reed of civil aid in time of emergency are clearly demonstrated.

Dr. Bulfin's address before the surgical section, reviewing its program, calls attention to the fact, not heretofore much appreciated in this country, of the increasing use of firearms, and of gunshot wounds in civil life, and to the question of the prevention of military venereal disease, a subject that has long been one of the greatest importance, especially in relation to the British Indian army.

The address of Dr. Charles, before the section of anatomy and physiologic, is a résumé of a large part of the physiologic advance of the past few years. As a somewhat critical summary of facts it is a valuable contribution, and concludes with congratulations on the present activity in physiologic research in Great Britain.

A practical subject well handled is that in Dr. Snell's address before the ophthalmologic sections, on "The Prevention of Eye Accidents Occurring in Trades," which he concludes are largely preventable. He would

⁴ Jour. of Exp. Med. 1899.

⁵ The Possibility of Extirpating Malaria from Certain Localities by a New Method. *British Med. Jour.*, July 1, 1899.

make the use of eye protectors compulsory for workers in iron and steel, whose employment renders them liable to be injured by iron or steel splinters, or who are exposed to danger from molten metal.

Of the two subjects of Dr. George Thin's address in the section on tropical medicine, the first has the greater interest, being, as it is, a very full and complete statement of the history and present status of the question of the insect origin of malarial infection in man. In his second theme, the respective advantages of the schools of tropical medicine, he shows the special points in which the Netley School is favored in this respect. With this showing his plea for the opening of this school to civil physicians can only be heartily endorsed by the profession, not only of Great Britain, but in their behalf by that of the whole civilized world. England, with her numerous tropical dependencies, has better opportunities to add to the world's knowledge than any other land, and it is to be hoped that these will not long be unduly restricted.

In the above only a part of the important addresses have been noticed. As already stated, it is hoped to reproduce some of them more fully hereafter. The session of the British Medical Association, always a matter of world-wide interest, can hardly this year have failed to keep up its traditional high standard of scientific papers and discussions.

CONSCIENTIOUS OBJECTIONS.

It is stated that the English law exempting those who have "conscientious objections," from compulsory vaccination, is not nearly so disastrous in its actual working, as was anticipated by its friends and its foes. The agitation of the subject has had an educational effect on the public, and especially that part that needed it most has shown a greatly increased demand for vaccination, and this without any special effort or pressure by local officials. It would seem, according to the testimony of Mr. Chaplin, head of the local government board, at the recent annual dinner of the London Press Club, that the opponents to vaccination had over-shot their mark, and that their success had been in some measure at least a boomerang to their cause. The wholesale misrepresentations in which they have indulged have had their effect in disgusting the public, to whom the facts have also been misrepresented.

HEAD OF "ST. LUKE'S HOSPITAL" GONE WRONG.

Those gentlemen who have so freely accepted positions on the consulting staff of "St. Luke's Hospital," Niles, Mich., and have adorned their office walls with its diplomas, will naturally be rejoiced to learn that its whilom head, "Dr. Granville," alias Burrows, has achieved still further distinction. We learn from the newspapers that he has made himself greatly desired in several states on account of his supervirile characteristics, and that he is now, as a much married man, enjoying public hospitality in one of the county seats of Minnesota with a prospect of sharing the hospitality of the state itself in company with other distinguished individuals whose photographs and biographies are

well known, at least to many public officials. Those who accepted the appointment from his institution and expressed their satisfaction in their letters of acceptance at the distinguished company they were in, will now have still another cause for self-congratulation. We only regret that "Dr. Granville" could not have achieved like celebrity directly from his connection with the institution over which he so fitly presided, and that his active colleagues there could not share it with him. Possibly some of them are also broad and versatile geniuses, and we may yet hear from them.

TUBERCULOSIS AND CATTLE.

In Illinois and several sections of the country a vigorous crusade is being inaugurated against tuberculous cattle as a source of possible infection. Herds are being examined and decimated and the prospects seem good for the extinction of bovine tuberculosis in the near future. One question suggests itself at once, however, that is apparently not noticed by the press reporters of these transactions; that is, what is done about the infected quarters, the sheds, milking yards, stables, etc., that have been occupied by the diseased cattle? These certainly are liable to have become infected, and it is poor policy to expose healthy animals to the danger of becoming diseased by leaving them undisinfected. Something might, perhaps, also be said as regards infection of dairies, and also of pastures, but this latter may be carrying the matter too far, as fresh air and sunlight will probably serve as efficient disinfectants there. This is a matter that has probably not been neglected by the veterinary adjuncts of the health boards, but we have seen no notice of it in the reports.

OSTEOPATHS WANT TO GIVE MEDICINE.

The osteopaths in Iowa are now proposing to demand legislation that shall recognize them as a separate school of medicine, give them their own board of examiners, prescribe penalties for the improper practice of osteopathy without due qualification, and permit them to prescribe drugs in the same manner "as shall be accepted and used by other physicians." In other words, as the *Iowa Medical Journal* puts it, they are trying to organize the same kind of "trust" for which they have been so roundly denouncing the medical profession. The most important feature of their demands is that after having made claims that their treatment precluded the necessity of giving medicine, they are now demanding the right to use it as do physicians. This lets out the whole secret; they are simply trying to legitimize diploma-mills, trying to open a short cut into the medical profession; as our Iowa contemporary very correctly says, one that requires no qualifications which ignorance can not overcome. This is a matter worthy the attention of our profession elsewhere than in Iowa; should they succeed there—which they are not likely to do, as the profession in that state seem to be awakening—or even think they can, they will try it elsewhere. This move simply emphasizes the need of medical organization in every part of the country to meet the various forms of quackery which are continually striving to defeat or abolish all laws made for the protection of the people against ignorance.

SANITATION IN PORTO RICO.

There has been constituted under the military government of Porto Rico a Superior Board of Health, consisting of a medical representative, each, of the army, navy and marine-hospital services and three civilian physicians. Their duties are defined in detail in General Order No. 102 of the Department Commander, and include not only supervision of health matters and vital statistics to an extent exceeding the functions of the average health board in this country, but also the supervision of public institutions, asylums, jails, court-rooms, theaters, etc., and the licensing and registration of physicians, pharmacists, undertakers and midwives. Its powers are broad, but apparently well defined, and with an intelligent but scientific board, such as is practically insured in this instance by its composition, health and collateral matters will be well looked after in Porto Rico. The advantages of the island as a winter resort are said to be very great, and there is nothing that will more enhance them than the general knowledge that sanitary supervision is thorough and complete. Whatever may be the permanent form of government adopted, it is hoped, for its best interests, that the efficient health measures of the provisional military control will be perpetuated.

YELLOW FEVER.

The latest reports regarding yellow fever at the Soldiers' Home, near Hampton, Va., are to the effect that the disease is completely under control, that no new cases are developing, and that the disease is practically stamped out. This satisfactory outcome might have been expected when it was appreciated that those in control knew the character of the disease, and went about the work of stopping its spread with energy. Every precaution was taken in the surrounding villages, not only in the way of quarantines but in preparing to isolate any cases that might develop; so that had it gotten beyond the confines in which it first started, the disease would still have had little chance of developing. During this outbreak, 42 cases have appeared, and 11 patients have died. Only one case has been found since the 31st ultimo, that one occurring or so diagnosed, on August 7. This patient had been sick and under treatment for some days, and the case is not considered as a new outbreak, but rather a delayed manifestation of the original infection. The soldiers in the Home have been removed to tents and the entire home fumigated and disinfected. A most radical quarantine is being enforced. The general health of the other inmates is excellent. House-to-house inspection of Hampton, Phoebus, Old Point Comfort and the small places on the road to Richmond is progressing and is about completed, but no new cases or suspects have been found. The Richmond authorities do not consider house-to-house inspection of that city necessary. Fear and anxiety are gradually subsiding, but there is no relaxation of quarantine rules.

YELLOW FEVER AS A CONTROLLABLE DISEASE.

The experience of the United States authorities in Cuba this year makes it appear that under strict control and sanitation, yellow fever is a manageable dis-

order. Under ordinary conditions and in previous years this disease was practically endemic in Cuban cities, Santiago in particular, which were regular foci of infection and constant sources of danger to our southern seaboard cities that were in direct communication with them. The conditions were held to be particularly favorable for the development of the disease which, while comparatively manageable on our own coasts, was beyond medical control there. The facts have proved that this is one of the fictions to be consigned to the limbo of exploded beliefs. While there have been outbreaks of yellow fever in several places among the unacclimated soldiers, in every case it has been promptly checked; the late epidemic at Santiago is a conspicuous example. Taking advantage apparently of the temporary absence of the medicomilitary governor, the germs came out, only to quickly disappear again on his return. In the second week in July, according to the press reports, the deaths from all causes were only sixteen, the lowest mortality known, and at the present time the little epidemic among the soldiers, appears to be under control. It may perhaps be too early for us to begin to congratulate ourselves that we have conquered the disease, but we have certainly scotched it and the facts show the high probability that in the future, if present conditions continue, still greater success will attend intelligent sanitation in those parts.

"CHRISTIAN SCIENCE" FOLLY.

The late peace congress at the Hague that has just ended its labors, has missed an important opportunity. According to "Christian Science"—a modern faith shared by judges, legislators, writers and others in highly civilized communities—while all disease and injury is simply a matter of belief on the part of the sufferer, its cause and hindrance to its cure may be due to the hatred and malice of others. Thus, as the *Buffalo Medical Journal* illustrates it, "No amount of water in the trenches, according to Christian Science could ever have given rheumatism or fever to an American soldier at Santiago. But a malicious thought on the part of his enemy would be liable to throw him into the hospital for months." We now see the real secret of the horrors of the war. Not explosive bullets, asphyxiating gases, or missiles from balloons should be alone excluded from civilized warfare, but malicious thoughts, which are far more deadly in what we non-illuminated think is a purely physical way. According to the latest revelations from "Christian Science," hatred is a direct cause of rheumatism, and therefore a sufficient concentration of this emotion might totally disable a hostile army. The Chinese method of training troops to make faces at the enemy is directly along this line of modern progress, and ought to meet the approval of every true "Christian Scientist."

ANTITOXIN IN THE TREATMENT OF DISEASE.

Whether or not, as a rule it is advisable or beneficent to try to enlighten the public on medical subjects, for the reason that it always seems to be able to misconstrue, there certainly can be no objection on this account to the publication of such a paper as that on "Antitoxin in the Prevention and the Treatment of Disease," contributed by Dr. J. J. Kinyoun of Washington, to the

current number of the *Forum*. While written for lay readers, the paper is strictly scientific and is a fair and plain statement of the subject. The author briefly explains immunity, and the methods of producing it, and outlines historically the gradual development of the method of treating certain diseases "by curative substances derived from bacteria," which had its inception in the discoveries of Pasteur. His statement of the question of the curability of diphtheria by antitoxin is most convincing, and his arguments, backed by irrefutable proofs in the way of statistics from all parts of the world, are certainly sufficient to satisfy any but the most prejudiced. Discussing the reported ill effects resulting from the use of antitoxin, he admits that more cases of paralysis are reported, but this is because more cases are cured. "Paralyses do not set in until a comparatively late stage of the disease; and the figures tend to prove that, if the fatal cases of former years had not died so soon after the attack, the percentage of paralysis would have been even larger than it now is under the antitoxin treatment." The author also discusses, but less fully, the treatment of tetanus by this method; the antivenin introduced by Calmette; Haffkine's investigations of the cholera spirillum; the inoculation against typhoid by Wright of the British Indian Medical Service, and, in fact, gives a general résumé of the whole subject. The paper is one that can be read with profit by those physicians who are yet pessimistic in their views in regard to the use of the serum in the treatment of disease.

THE EIGHTH COMMANDMENT.

One would not like to make the mistake of a prominent literary man who attributed the evils of a certain class of modern fiction to its "dallying with the sixth commandment," but we trust our Scriptural knowledge is sufficiently correct in the heading of this note. The special evil in a considerable portion of periodical medical literature is its dallying with the eighth commandment. The *Medical and Surgical Review of Reviews* (London), in its June issue brings out this fact very forcibly in referring to a single instance in which forty-one pages of matter out of a total of sixty-one were taken bodily from its columns without credit. This is an extreme case, but less wholesale offences of the kind are still too common and one need not look long before finding them. When so little is asked—only the due credit to the source—the theft seems the less respectable; it suggests a mental penuriousness and acquisitiveness that no one ought to possess. If the extract is of an original article, it loses much of its value if the first source is not given; of an editorial article or abstract of literature, it is practically plagiarism of the meanest kind. It is, moreover, taking and using what others have paid for, since editorial work, such as comments and abstracts of literature, is not obtained for nothing, but is a source of expense to the leading medical journals of the day. While it may be done inadvertently at times, at others there is evidence of deliberate carelessness in this regard, to call it nothing worse. The practice, while still too common, is, we are pleased to think, on the decrease, but such complaints as that of our contemporary remind us now and then that there is still room and need for reform.

DIAGNOSIS OF CARCINOMA OF DIGESTIVE ORGANS.

In the absence of a tumor the diagnosis of intra-abdominal malignant disease is at all times difficult, and even when a new growth can be detected by palpation and percussion the determination of its actual seat may be attended with much difficulty, or there may be doubt whether a single growth or more than one is present. Having observed in a series of cases of carcinoma of the digestive organs—stomach, intestines, liver, pancreas—repeated disparity between the clinical diagnosis and the post-mortem disclosures, Zennetz¹ points out some of the sources of error and the means of avoiding them. The absence of free hydrochloric acid from the gastric contents, and the presence of lactic acid cannot be accepted as infallible indications of the presence of carcinoma of the stomach. The secretion of hydrochloric acid by the stomach is intimately related with the blood-supply and the innervation of that organ, and especially its mucous membrane, and these in turn are related with the nutritive conditions of the body generally. Derangement in the blood-supply and in innervation gives rise to impaired function of the stomach and this in turn aggravates the primary condition. A like deficiency has been observed also with disease of other of the digestive organs. The presence of lactic acid in the gastric contents is a direct result of the absence of hydrochloric acid, and has no greater significance than this absence. Severe disease of any of the digestive organs exerts a marked influence on the functional activity of the pylorus, which becomes insufficient in consequence of impaired nutrition of its muscular fibers. Gastric catarrh and gastric dilatation are common accompaniments of carcinoma of the digestive organs, so that in consequence of paresis of the pyloric muscular tissue the contents of the duodenum are forced into the stomach with coughing, vomiting, sneezing, muscular efforts, etc. For this reason the patient often complains of a bitter taste, and the reactions of the gastric contents are altered from the presence of bile. The coffee-ground material often vomited is believed not always to consist of disintegrated blood, but sometimes of bile. Even in the presence of blood, the source of hemorrhage need not be a malignant new-growth of the stomach, as, for instance, when cirrhosis of the liver is associated with carcinoma of some other digestive organ. The presence of sarcinae may be accepted as excluding gastric carcinoma, whereas the presence of large non-motile bacilli visible in the gastric contents even without staining, is strongly indicative of that condition. The presence of sugar in the urine may in some cases be an important diagnostic symptom of carcinoma of the pancreas. The typical cachexia is sometimes wanting. Involvement of the biliary passages may give rise to jaundice, although this may occur with malignant disease of some digestive organ other than the liver. Carcinoma of the gall-bladder may, for obvious reasons, be entirely unattended with jaundice. The symptoms of carcinoma of the duodenum are much like those of similar disease of the stomach. From the foregoing considerations it will appear that while the diagnosis of carcinoma of the digestive apparatus may at times be made with certainty, its localization is often a matter only of probability, and this is the more so when the growths are multiple.

¹ Wiener Med. Woch., May 20, 1896, p. 983.

Medical News.

DR. A. C. BERNAYS of St. Louis has resigned his chair in the Marion Sims Medical College.

It is proposed in Germany to raise the age limit for criminal prosecution from the twelfth to the fourteenth year.

DR. CHARLES WIRGMAN of Philadelphia, who recently returned from a trip to England, has gone to Bermuda for several weeks.

TWO ADDITIONAL fatal cases of tetanus, probably the last of the long list of Fourth of July victims, are reported from New York City.

THE SITE for the new building of the medical department of Hamline University, Minneapolis, Minn., has been chosen directly opposite the new city hospital building.

THE RECONSTRUCTION of six of the Paris hospitals, including the Charité and the Laennec, is urgently demanded by the Prefect, and ways and means are now under consideration.

THE BRONZE statue in memory of Dr. William Pepper, Philadelphia, has been placed on its pedestal in front of the new Archeological Museum of the University of Pennsylvania, where it will remain until unveiled early in the autumn.

THE PHYSICIANS of Naples have been soliciting subscriptions for the purpose of founding a hospital for tuberculous patients. The Duchess of Ravaschiero has presented her large and handsome estate at Pozzuoli for the purpose, and the outlook is very flattering.

DR. WM. P. JENKINS, one of the commissioners of the New York Board of Health, is abroad, it is said for the purpose of inspecting crematories in the various European cities with a view to the establishment of a plant for the destruction of the refuse matter of New York City.

AN ASYLUM for the isolation of lepers has been constructed at Memel, in the extreme northeast of Prussia, and was opened last month. The lay press is extolling the energy and perseverance of the medical fraternity in arousing public opinion and the Government to the urgent necessity of the measure.

It is stated that Mrs. Mary Baker Eddy of Christian Science fame, is being sued in amounts aggregating \$500,000 by Mrs. Josephine Curtis Woodbury of Boston. Seven different suits are pending, all of which are for alleged libelous remarks made by Mrs. Eddy at the First Church of Christ, Boston, Sunday, June 4.

THE PROVINCE of Gothland, in southern Sweden, is in a panic from the spread of anthrax among the cattle, which are dying at the rate of a hundred a day, according to the *Vossische Ztg.* The people in towns are afraid to touch butter, cheese or milk brought in from the country, as several deaths have occurred from infection among persons much in contact with the animals.

It is reported that at the recent quarterly meeting of the Missouri State Board of Health, held in Kansas City, a resolution was passed, to become effective in January, 1901, requiring all medical students desiring certificates for the practice of medicine in that state to study four years at a reputable medical college, instead of three, the present requirement.

THEODORE STRO, president of the Legal and Medical Relief Society, recently mentioned in the *JOURNAL*, has appointed a number of well-known lawyers and physi-

cians to serve as a committee of proposed legislation regarding Christian Science healing in New York. It is expected that the committee will draft a bill to be presented at the next legislature, explicitly defining the legal status of this and other similar "healing."

UNDER the direction of Dr. S. R. Hartman, assistant milk inspector, Philadelphia, eighteen cows out of a herd of twenty-four, found to be tuberculous, were promptly slaughtered. An investigation of another disease affecting cattle near that city disclosed that the animals had suffered from anthrax supposed to have originated from the carcasses of animals buried on the farm several years ago, in which the cause of death had been due to anthrax.

CHANGES at the Baltimore Medical College are announced as follows: Dr. J. M. H. Rowland has been made associate professor of anatomy, Dr. E. L. Whitney associate professor of physiologic chemistry, and Dr. Charles H. Potter associate professor of pathology. Dr. T. R. Williamson has been made assistant in pathology and bacteriology, and Dr. Chas. O'Donovan appointed clinical professor of diseases of children.

ACCORDING to cable despatches, the International Congress of Obstetricians and Gynecologists began its third annual meeting, at Amsterdam, Tuesday, August 8, with a large attendance. The despatches give the following as being present from the United States: Drs. Charles A. L. Reed, Cincinnati, Ohio; L. S. McMurry, Louisville, Ky.; X. O. Werder, Pittsburg, Pa.; J. H. Carstens, Detroit, Mich.; W. E. B. Davis, Birmingham, Ala.; L. H. Dunning, Indianapolis, Ind.; and Clinton Cushing, Washington, D. C.

It is announced that at the Sykesville (Md.) Asylum for the Insane, as a result of the open door plan inaugurated by the late Dr. George H. Rohé, and which has been in successful operation for more than a year, no patient during that period has been mechanically restrained or subjected to cell confinement within the walls of the institution. By the beginning of the year it is expected that the new department for women will be ready to receive its 200 inmates, who are to be exclusively under the charge of female physicians and female attendants.

A MEDICAL club has been organized in Paris, on the same social lines as the Berlin Club, which has been in successful operation for a year or so. The new club was formed among the medical members of the Cercle National, but is now an entirely independent organization, with the quarters of the Cercle National, 5, Avenue de l'Opera, at its disposal. The fees are \$21 a year. Pozzi is president. Doléris and Marcel Baudouin were most actively engaged in its inception. Two hundred members are already inscribed.

THE CORONER'S inquest over the body of Mrs. Flanders, the victim of Divine healing or Dowieism, which was referred to in last week's *JOURNAL* (p. 365), was held in Chicago August 8. The jury brought in a verdict finding Mrs. Bratz guilty of criminal negligence and malpractice, and ordered that she be held to the grand jury for action. "Elder" DeWitt Holmes, a member of Dowie's Zion was also held. Pending the meeting of the grand jury, both were committed to jail, and after some hours were released on bail. The investigation developed the fact that both the above parties did enough to prove that they were practicing medicine, and the Illinois State Board of Health will bring suit against Mrs. Bratz for practicing without a license.

THERE IS a German society in New York formed for the purpose of ensuring a \$200 funeral to its members. One of them recently had a limb amputated and applied to the society for a fourth of his funeral money, as a fourth of him was dead. The officers conceded the justice of his claim and appropriated the money, but with the stipulation that it was to be used exclusively for funeral purposes, and consequently the limb, embalmed and borne in a child's hearse, was buried with all due pomp and circumstance.

SERIOUS intoxication resembling gastro-enteritis, according to *Presse Med.*, July 12, was produced by the mistake of a druggist who used zinc sulphate instead of sodium sulphate in compounding Glauber's salts. When the victim recovered he sued the druggist, who claimed that the wholesale drug house had sent him zinc instead of the sodium sulphate he had ordered. The wholesale clerk stated that the driver had been sent to the chemical factory for sodium sulphate and had brought back zinc. The court condemned the druggist to a month's imprisonment and the clerk and driver each to a \$20 fine.

Therapeutics.

Influence of Certain Substances Upon Diuresis.

MM. E. Barbier and H. Frenkel said at a recent French Congress, that if we may admit with M. Bouchard, that the diseased kidney imperfectly eliminates sodium salicylate and that in pathologic conditions diuresis may be impeded by this substance, the same is not true in the normal state. In a healthy man most clinicians admit that the salicylate has a diuretic effect. Certain authorities deny this statement upon clinical and experimental grounds. M. Siegert recently, for instance, claimed that the salicylate has no diuretic action, and attributes, indeed, opposite influence to this drug, warning the practitioner against its use in dissolving caffeine and advising the substitution for it of sodium benzoate. Surprised at this conclusion, the authors cited had undertaken a series of comparative experiments upon the action of caffeine associated with the salicylate and the benzoate of sodium. The experiments were performed upon dogs, by means of ureteral canulas. They had counted the number of drops flowing from the ureters, minute by minute, during two or three hours. At the same time the general pressure and the renal circulation were registered before and after the injections. Under these conditions the authors observed that caffeine associated with either benzoate or salicylate of sodium increased the urinary flow in a very high degree. There appeared to be no difference in this respect when the caffeine was associated with the salicylate or benzoate.

The general pressure, after a very slight and short fall, increased about 30 to 40 mm. of mercury for a medium dose of 1 centigram of caffeine to the kilogram of the animal's weight. It attained its maximum at the end of two minutes above the initial pressure. In reference to the kidney, they observed a constriction of the vessels, lasting, on an average, only thirty seconds. The salicylate of sodium alone caused a very slight augmentation of the general pressure, and produced a dilatation of the renal vessels. The benzoate of sodium alone raised the general pressure some millimeters and excited no sensible modification of the renal circulation. In fine, there is no reason to consider the salicylate as an agent which diminishes the diuretic power of caffeine. The authors do not venture to say that the salicylate is superior to the benzoate as a diuretic, but believe they can affirm that it is not inferior.—*Med. Bul. Med. and Surg.*

Alcohol As an Antidote for Carbolic Acid.

Occasional reports of carbolic acid poisoning, which appeared in recent issues of the current medical press remind us of the success achieved by Phelps in antidoting carbolic acid by the use of alcohol, says the *Med. Review*. He states that the hands may be washed with impunity in 95 per cent. carbolic acid by the use of alcohol. He has employed injections of pure carbolic acid in suppurating cavities and has then washed them out with alcohol. The procedure has not been accompanied by carbolic-acid intoxication. The method has been found to be very efficient in immediately sterilizing suppurating cavities, and many cases have been followed by a rapid absorption of the walls of the abscess and an obliteration of its cavity. The importance of the discovery in relation to accidents with carbolic acid can not be over-estimated. The frequency of accidental poisoning with this drug has greatly increased of late years, and the occasional accidental spillings of the contents of a bottle of strong carbolic acid over some portion of the body is by no means infrequent. The application of alcohol to these cases is said to furnish a perfect antidote. Carbolic acid, when swallowed, if followed at once by alcohol, is said to be immediately antidoted.

Resinol.

Dr. B. F. Ray says, in the *Western Medical Review*, that the following prescription duplicated perfectly the preparation called "Resinol," manufactured by the Resinol Chemical Company of Baltimore, and sold to physicians at the seemingly exorbitant price of 50 cents an ounce:

- B. Sulphur sub.
Acetanilid
Bismuth oxid
Plumbi acetat, ʒʒ. gr. xxx
Pix. liq. m. xxxvi
White petrolatum. ʒvi
Carmine to color, q. s.

M. Sig. To be applied whenever the product "Resinol" is indicated in the following conditions: as an antiseptic, anti-pruritic, and sedative, in pruritus ani, dry form of eczema in children, piles, superficial burns of small areas, etc.

The liquid tar used in resinol is the acid tar of commerce and can be replaced by the alkaline liquid tar of the B. P., which is non-irritating to delicate skins. The above prescription will do anything that "Resinol" can accomplish, and has the advantage that it can be varied to suit the needs of the case.

Effect of Quinin on Asthmatic Attacks.

Van Sveringen (*Indiana Med. Jour.*) tried many remedies for an attack of bronchial asthma lasting two weeks, but at no time succeeded in getting more than two hours' freedom from distress. Amyl nitrite gave the patient fifteen minutes' ease; chloroform but little longer, after the inhalations stopped. Belladonna seemed to have lost its effect for good entirely. Morphine did better than anything else, and gave her longer relief, but was followed by so much nausea and vomiting that she refused to have it again. Iodids had been given regularly from the first. Then for the purpose of stimulating the inhibitory reflex center, quinin and strychnin were tried. The effect was almost magical. The dose of the quinin was 7 grains, and the extract of nuxvomica was given in ¼-grain doses, and to this was added ¼ grain of the sulphate of codein. They were taken *pro re nata*. In the intervals the iodids were continued, and the patient had less asthma in the last year than in ten years previous.

ASTHMA.

The following prescriptions were recommended by Dr. Pepper for asthma, in the attack:

- B. Morphine sulphatis. gr. 1/6
Strychnine sulphatis. gr. 1/60
Hyoscine hydrobromatis. gr. 1/160
M. Sig. Administer by hypodermic injection each night.

R. Etheral tinct. of lobelia.....	ʒii
Tinct. of asafetida.....	ʒi
Tinct. of opium.....	ʒss
Potassium iodid.....	ʒiii
Syrup of tolu.....	ʒiv

M. Sig. From one to two teaspoonfuls every one or two hours for an adult, according to the severity of the case.

R. Ammonij bromidi.....	ʒvi
Ammonij chloridi.....	ʒss
Tinct. lobelie.....	ʒiii
Spiritus etheris comp.....	ʒi
Syrupi acacie ad.....	ʒiv

M. Sig. Dessertspoonful in water every hour or two during paroxysms.

The following prescriptions have been used with varying success:

R. Extract euphorbie piluliferae.....	m. iii
Nitroglycerin.....	gr. 1/200
Sodii iodidi.....	gr. ii
Potassij bromidi.....	gr. ii
Tinct. lobelie.....	m. ii

M. Ft. pil vel capsul, No. 1. Sig. From one to four three times a day.

FOR INHALATION.

R. Potassij nitratiss.....	ʒss.
Pulv. anisi fruct.....	ʒss.
Pulv. stramonii fol.....	ʒi

M. Sig. Use a thimbleful, place on plate, light with match, then inhale fumes.

SPASMODIC ASTHMA.

In spasmodic asthma the patient should not only take arsenic but should smoke arsenic cigarettes. The ordinary arsenical cigarette is made by saturating paper with a solution containing 15 grains of the arsenite of potassium in an ounce of water. The portion of the paper which comes in contact with the lips should not be impregnated, or, better still, a mouthpiece should be used.

In addition to smoking these cigarettes the patient should use this fuming inhalation at bedtime.

R. Powd. anise fruit.....	ʒi
Powd. fennel fruit.....	ʒss
Powd. sumbul root.....	ʒiii
Powd. stramonium leaves.....	ʒii
Iodid of potassium.....	ʒii
Powd. niter.....	ʒii

The ingredients should be perfectly dry and intimately mixed. A tablespoonful should be ignited and the fumes inhaled.

—William Murrell.

Hay Fever.

For this distressing disease Dr. William Murrell recommends the following for inhalation:

R. Menthol.....	gr. viii
Chloroform.....	m. v
Benzol.....	m. xx
Oil of cassia.....	m. iii
Light carb. of magnesia.....	gr. xxx
Water, ad.....	ʒi

M. Sig. A teaspoonful is poured into a pint of hot water at a temperature of 140 F. and the vapor is slowly inhaled for ten minutes.

The following prescriptions have been recommended for this disease:

R. Mentholiss.....	gr. xx
Olei amygdalæ dulcis.....	ʒiii
Acidi carbolicis.....	m. x
Cocainæ hydrochloratis.....	gr. vi
Ung. zinci oxidii.....	ʒss

M. Sig. Apply thoroughly to the nostrils on cotton attached to a toothpick.

—Frederick G. Smith.

R. Cocain.....	
Menthol āā.....	0/5
Boric acid.....	
Powdered acacia āā.....	5/0
M. Sig. Use as a snuff.	

R. Camphor.....	gr. x
Boric acid.....	ʒi
M. Sig. Use as a snuff.	

R. Olei eucalyptus.....	ʒi
Glycerini.....	ʒi
Tincture opii.....	ʒiii
Aque destil, q. s. ad.....	ʒvi

M. Use with atomizer three times daily.

Or

R. Liq. potassii arsenitis.....	
Extracti nucis vomice fluidi.....	
Ext. cinchonæ fluidi (detannated) āā.....	ʒiii
Alcoholis.....	ʒiii
Syrupi aurantii q. s. ad.....	ʒxvi

M. Sig. One to two teaspoonfuls, taken three times daily, with or after meals.

—Hall.

R. Chloralis.....	
Pulv. camphoræ āā.....	gr. xvi
Acidi carbolicis.....	gr. xx
Morphine.....	gr. xii
Acidi oleici.....	gr. vii
Olei ricini.....	ʒviii

Rub well together to make a lotion. Apply by means of a little ivory or hardwood plug to the interior of the nostril.

—Horace Dobell.

R. Camphor menthol.....	1-3
Lavolin.....	100

M. Sig. Use as a spray to check sneezing and arrest profuse watery discharge.

—S. S. Bishop.

FOR THE HYDRORRHEA ACCOMPANYING HAY-FEVER.

R. Sodii bisulphatis.....	1 part
Aque destil.....	500 parts

Or the exhibition of a wash of

R. Acidi aceti.....	m. ii
Resoreini.....	gr. iss
Sodii chloridi.....	gr. iv
Aque destil.....	ʒi

Miller says, "change of residence if possible, before the known date of annual recurrence, is the only positive prophylaxis or cure.

Make sure that the nasal passages are free from irritating obstruction. After a course of Carlsbad salts and spraying the nostrils with Carlsbad water, douche the mucous membrane with a strong solution of nitrate of silver, and, as an after-treatment, apply:

R. Mentholiss.....	
Resoreini āā.....	gr. xlv
Spiritus vini diluti.....	ʒiv

Specific for Menstrual Disturbances.

Professor Hirth of Munich was for two years superintendent of the European custom-house at Chung King, the metropolis of western China, Mongolia and Tibet, where his attention was called to the tang kui root, which has been used for many centuries in China as a remedy for menstrual disturbances. He and others have been testing it, and he is strongly inclined to believe that it is the long-sought specific for amenorrhæa without abortifacient properties. He describes it and its action in the *Munich Med. Woch.*, No. 23.

Rational Administration of Cod-Liver Oil.

An article in *Echo Med.*, July 2, states that cod-liver oil as usually administered is worse than useless. It should never be taken except after meals and, if possible, fully an hour should elapse to allow time for the stomach to secrete undisturbed. Two spoonfuls should be taken twice a day, increasing by two a month to a maximum of eight in January, and then decreasing in the same manner. The spoon used should be a tea, dessert or tablespoon, according to age and the case. The oil has no therapeutic effect, he adds, but is merely for superalimentation.

Diphtheria.

The Italians report (*Semina Med.*, July 19) that severe cases of diphtheria can be effectually treated by the administration of the diphtheria serum by intravenous injections. Gagnoni has recently saved, by this means, three children in a very advanced stage with croup and symptoms of suffocation.

Book Notices.

The Throat and Nose, and Their Diseases. With 550 illustrations in colors, mostly designed and executed by the author, J. LENNOX BROWNE, F.R.C.S.E. Senior Surgeon to the Central London Nose, Throat and Ear Hospital, etc. With special assistance as follows: Anatomy, Mayo Collier, M.S., F.R.C.S.; Nervous Diseases, James Cagney, M.D., and Histopathology, Wyatt Wingrave, M.R.C.S. Fifth Edition. Revised and rewritten. London: Bailliere, Tundell & Cox. 1899.

The fifth edition of this well-known treatise, according to the author's preface, has been so largely rewritten and changed, even from the fourth edition, that it is practically a new work. The anatomy and physiology have been brought up to date, and a new feature, that of normal histology, has been added. The morbid anatomy, gross and microscopic, has correspondingly required revision and illustration, and a new chapter on bacteriology as applied to the nose and throat has been written. These have necessitated complete revision and extension of other subjects, and the general result is an entirely different book in many respects. The illustrations have also been increased to correspond with the other changes.

Dr. Browne's former views as to the antitoxin treatment of diphtheria are well known. His discussion of the subject here is brief, too much so in our opinion, and is in striking contrast with his lengthy though skeptical treatment of the subject in the recently issued supplemental volume of "Keating's Cyclopaedia." The impression left here is that his views are perhaps in a transition state as to the importance of the method.

Besides the cuts in the text, a set of fifteen plates illustrates the more important conditions. The general make-up of the work is very fine, and there is a tolerably full index.

Urinary Analysis and Diagnosis. By Microscopic and Chemical Examinations. By LOUIS HEITZMANN, M.D. With 108 original illustrations. New York: William Wood & Co. 1899.

This volume, while giving the principal chemical methods of urinary examinations, is especially strong in the microscopic tests, the illustrations being particularly good and abundant. The third section on microscopic diagnosis is also a valuable feature and one that will be appreciated. Here also the figures are especially numerous and illustrate the text. It is in these microscopic sections of the work that its value is greatest, and this was the intention of the author, as stated by him in his preface. It will be a useful work for the student and practitioner.

A Text-Book on Practical Obstetrics. By EGBERT H. GRANDIN, M.D., Gynecologist to the Columbus Hospital; Consulting Gynecologist to the French Hospital; late Consulting Obstetrician and Obstetric Surgeon of the New York Maternity Hospital; Fellow of the American Gynecological Society, etc. With the collaboration of GEORGE W. JARMAN, M. D., Gynecologist to the Cancer Hospital; instructor in Gynecology in the Medical Department of the Columbia University; late Obstetric Surgeon of the New York Maternity Hospital; Fellow of the American Gynecological Society, etc. Second Edition. Revised and Enlarged. Illustrated with 64 full-page Photographic Plates and 86 Illustrations in the Text. 6½x9½ inches. Pages xiv+461. Extra Cloth, \$4.00, net; Sheep, \$4.75, net. Philadelphia: The F. A. Davis Co.

The book has for its reason of publication, as the authors state in their preface, the modern requirements of clinical instruction in obstetrics. It would appear from examination that it meets these requirements, giving the essential and practical points, but leaving the vast amount of anatomic and other collateral facts that occupy so much space in most obstetric text-books to be learned elsewhere. Indeed, it is to be assumed that these have been already acquired by the student. It is, therefore, a work that is especially adapted to the student and practitioner who are already qualified in these regards. In some respects the treatment of certain subjects seems brief, but clearness and reasonable fullness are really the essentials. The work will probably meet with deserved success.

International Directory of Laryngologists and Otolologists, containing Names and Addresses of Practitioners engaged in the Study and Practice of Laryngology and Otolology. Compiled by RICHARD LAKE, F.R.C.S. Published under the auspices of the *Journal of Laryng. and Otol.* Pp. 111; 12mo. Cloth. London: The Rehman Publishing Co. (Ltd.). 1899.

This little book is supposed to contain the names of practically all the specialists in these two branches throughout the world. While completeness is not claimed, the list seems to be nearly as complete as it is possible for such a work to be. It contains a list alphabetically arranged by names; and also a list of the important cities, alphabetically arranged, with the names of the specialists residing in each. There is also a list of journals devoted to laryngology and otology. The book will be found of great value to those who are interested in reaching the laryngologists of the world.

Newer Remedies: Including their Synonyms, Sources, Methods of Preparation Tests, Solubilities, Incompatibles, Medicinal Properties, and Doses as far as Known, Together with Sections on Organotherapeutic Agents and Indifferent Compounds of Iron. A Reference Manual for Physicians, Pharmacists and Students. By VIRGIL COBLENTZ, A.M., Ph.D., Ph.D., F.C.S., etc. Third Edition, revised and very much enlarged. Philadelphia: P. Blakiston's Son & Co. 1899.

The above lengthy title of this little work gives a very correct notion of its contents and value. The omissions are very few among the newer remedies, and it will be found a very useful and satisfactory reference manual.

Massage and the Original Swedish Movements; Their Application to the Various Diseases of the Body. By KURNE W. OSTRUM. Fourth Edition, revised and enlarged, with 105 illustrations. Philadelphia: P. Blakiston's Son & Co. 1899.

The appearance, within ten years, of the fourth edition of this little work shows clearly enough that it has in it elements that bring it in demand. It is certainly a very convenient, handy book on its special subject, but it can hardly fill the place of larger works that go more deeply and fully into the matters. For a large class, however, it will be found useful, and it has enough in it peculiar to itself to render it a convenient addition to the literature of the subject already in our possession.

International Medical Annual and Practitioner Index. A work of reference for Medical Practitioners. New York and Chicago: E. B. Treat & Co. 1899.

The seventeenth volume of this well-known annual sustains its already earned reputation, and contains a very large amount of well-selected and condensed medical information, well up to the date of its publication. If we are to make any criticism it is for the lack of mention of psychiatric subjects; in other respects it is quite full and complete.

Practical Materia Medica for Nurses. With an Appendix Containing Poisons and Their Antidotes, with Poison Emergencies, Mineral Waters, Weights and Measures: Dose List; and a Glossary of the Terms used in Materia Medica and Therapeutics. By EMILY A. M. STONEY, Graduate of the Training School for Nurses, Lawrence, Mass.; late head nurse Mercy Hospital, Chicago, etc. \$1.00 net. Philadelphia: W. B. Saunders. 1899.

So far as we can see from a rapid examination of this work it contains about everything that a nurse ought to know in regard to drugs. It gives the name, dose, therapeutic and toxic action, and preparations of nearly all the well-known and of many of the newer substances used in medicine, and so far as we have been able to see, correctly. As a reference book for nurses, when they need such, it will without question be very useful.

Laboratory Work in Bacteriology. By FREDERICK G. NOVY, Sc.D., M.D., Junior Professor of Hygiene and Physiological Chemistry, University of Michigan. Second Edition, Revised and Enlarged, with frontispiece and 76 illustrations. Ann Arbor: George Wehe. 1899.

As a students' laboratory guide, which is daily standing the

test of use, this work can be cordially recommended. It does not, as the author states in his preface, give full consideration to certain subjects, like the questions of immunity and the individual pathogenic bacteria, as these subjects are treated by him, in his course, in lectures that are altogether distinct from the laboratory work. It contains, however, in its opening chapters, the necessary general information for laboratory work, and the concluding chapters describe special methods and tests suitable for advanced student work. The value as a student's manual is enhanced by the blank pages opposite the specific descriptions for notes, illustrations, etc.

Surgery of the Head and Neck. By LEVI COOPER LANE, A.M., M.D. (Berol.), M.R.C.S. (Eng.), LL.D. Professor of Surgery in Cooper Medical College, San Francisco. Second Edition. Philadelphia: P. Blakiston's Son & Co. 1899.

The author's modest preface disarms criticism of this work, were we inclined to offer it. As it has reached a second edition in three years, it is fair to assume that its merits have been appreciated. It is certainly a work of much labor, though it does not impress us as being quite up to date in a few points. There is nothing to indicate any special change or revision in this edition.

Cyclopaedia of the Diseases of Children. MEDICAL AND SURGICAL. The articles written especially for the work by American, British, and Canadian authors. Vol. v. Supplement. Edited by WILLIAM A. EDWARDS, M.D. Illustrated. Philadelphia: J. B. Lippincott & Co. 1899.

Since the appearance of the last volume of Keating's Cyclopaedia a number of years have intervened, and this supplemental volume is, therefore, the more welcome to its readers. The articles here published are certainly not less meritorious or valuable than those in the earlier volume, and they bring our knowledge of the subjects fairly up to the year 1898. Some omissions of subjects are noticeable, but the work is as a whole a comprehensive and very valuable addition to literature of children's diseases. The list of the authors, including as it does such names as those of Hare, Osler, Lennox Browne, Jacobi, DaCosta, Starr, Ashhurst, Kelly, and others hardly if any less well and favorably known, would promise this, and careful perusal will confirm all expectations.

Atlas of the External Diseases of the Eye. Including a Brief Treatise on the Pathology and Treatment. By PROF. DR. O. HAAB. Authorized Translation from the German. Price \$3.00. Edited by G. E. DE SCHWEINITZ, A.M., M.D. Illustrated. Octavo. Cloth. Pp. 288. Philadelphia: W. B. Saunders. 1899.

This is another of Saunders' Medical Hand-Atlases, and is as fully deserving of praise as any of its predecessors in the series. The illustrations are beautifully graphic, most of them being true to nature. The descriptive text covers the whole field in a thoroughly practical manner. Dr. G. E. De Schweinitz, the American editor, has added much of value, and has made the work a reliable one.

Deaths and Obituaries.

DANIEL G. BRINTON, M.D., Philadelphia, died while on a visit to Atlantic City, N. J., July 31. Dr. Brinton was born in Westchester, Pa., 62 years ago, and was a graduate of Yale, and subsequently of Jefferson Medical College. During the Civil War he served as medical director until disabled by sunstroke, afterward receiving appointment as superintendent of hospitals in Quincy and Springfield, Ill. For a time he was editor of the *Medical and Surgical Reporter*, and of the *Compendium of Medical Science*. In 1886 Dr. Brinton was awarded a medal for his researches in American ethnology, by the Société Américaine de France. He was professor of ethnology and archeology in the Academy of Natural Sciences of Philadelphia and of American archeology and linguistics in the University of Pennsylvania. He gathered together a library of original American literature printed in the original. Very recently he

gave to the University of Pennsylvania his entire collection of books and manuscripts relating to the aboriginal languages of North and South America, consisting of nearly 2000 titles and 200 bound volumes. The collection will be named after him.

FRANCIS C. GREENE, M.D., Yale, 1851, long a practicing physician in East Hampton, Mass., died there August 2, aged 72 years. During the Civil War he served as a surgeon under General McClellan in the Peninsular campaign. A widow survives him.

D. O. DAVIS, M.D., for twenty-five years a resident of Baltimore, died in that city August 3, aged 53 years. He was a native of Wales and came to America in 1866, and first engaged in the drug business in Washington, D. C. He moved to Baltimore in 1875 and received the degree of M.D. from the College of Physicians and Surgeons, Baltimore, in 1880.

CHAS. W. ADAMS, M.D., Kansas City, Mo., died suddenly August 3. Dr. Adams was one of the founders of the University Medical College of that city, and its dean from 1880 to 1895. He was a member of the AMERICAN MEDICAL ASSOCIATION, the Missouri State Medical Association, Jackson County Medical Society and the Association of Military Surgeons of the United States. He was born in Rochester, N. Y., in 1854.

ROSS DUNN, M.D., Nashville, Tenn., aged 33 years, a graduate of the medical department of the University of Tennessee, in which institution he was afterward demonstrator of anatomy, died July 29.

JOHN H. GILBERT, M.D., Quincy, Mass., a graduate of Dartmouth and Tremont Medical College, aged 63 years, died at his home August 3.

Robert Hunter, M.D., Netherwood, N. J., died while on his vacation in Canada, July 29, aged 75 years. . . . D. A. Linthicum, M.D., Helena, Ark., August 1, aged 80 years. . . . W. W. Parker, M.D., Richmond, Va., August 3, aged 75 years. . . . G. W. Ryan, M.D., Niantic, Ill., July 30, aged 51 years. . . . Rudolph H. Schmidt, Seymour, Wis., July 29, aged 53 years.

Association News.

Practice of Ophthalmology.—The resolution in regard to the practice of ophthalmology, as originally introduced and printed in the JOURNAL (see vol. xxxii, pages 1337, 1373), was revised as follows by the special committee, composed of Drs. Thomas H. Fenton and Louis J. Lautenbach, Philadelphia; and Dudley S. Reynolds, Louisville, endorsed by the ophthalmologic section and adopted by the ASSOCIATION at the third general session.

Resolved. That the application of lenses in such cases is treatment of errors of refraction in the eyes requires a knowledge of pathology and therapeutics.

Resolved. That the application of lenses in such cases is a part of the practice of medicine to be undertaken by no one not qualified to practice medicine and surgery.

New Instrument.

New Form of Portable Battery.

W. N. SHERMAN, Ph.D., M.D.
MERCED, CAL.

The faradic current, being the one most frequently used in general practice, has stimulated the manufacturer of batteries to offer them in as small and compact form as possible, consistent with efficiency. In presenting this new form of portable battery the desire has been to combine efficiency, compactness and novelty.

A faradic battery in the form of a cane would at first thought appear an impossible combination, but when we consider the principle and the construction of faradic batteries in general, it will be seen that the principle of scientific construction has not been altered, but simply a change made in

mechanical construction. We may carry this around with us, concealed in such a way that it can not attract attention, and in a form that is rather a personal ornament than an unsightly burden. Its form does not prevent the scientific electric construction as in other forms, nor affect its efficiency, when compared to other small faradic batteries, while for portability, novelty and convenience it far surpasses any form yet constructed or offered to the profession or the public.

The cuts here presented will give the reader a very good idea of the form of construction, both mechanical and electric. The first illustration, Fig. A, shows the cane one-half its actual size, with the form and outline complete, except its length. The head is not made in the chased design illustrated, but in plain roman gold or polished gold finish, more attractive and durable than the chased heads. The edges of the two end caps

Fig A

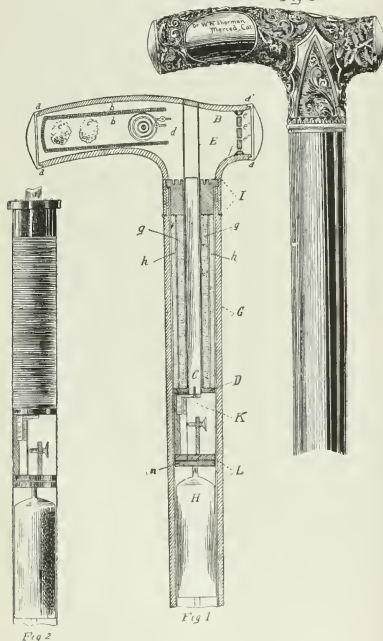


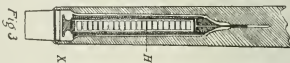
Fig 1

are milled to facilitate their easy removal, and are attached by a half turn, and lock tightly in place. The head is four inches long and one in diameter. It has a lock joint between the head and stick that is a convenient and quick method of removing the coil for adjustment of the vibrator, should it become necessary.

Fig. 1 shows a longitudinal section of the battery and electric parts, and nicely illustrates its internal arrangement. The cylindrical gold head is in the form of a polo handle or cane head, and affords a container for *b b*, the nickel-plated hand electrodes, sponges *c c*, and cords *d*. At the opposite end is the hard rubber disc switch-board *B*, adjusted to a slotted ring, so that it is easily removed by pushing it inward. It has three

sockets—*e, e, e*—for the fastening of the cord tips, and a small lever switch at *f*. The connections between this switch-board and the hard rubber head of the induction coil are made by cable wire, well insulated and so arranged as to give the three currents usually given by hand batteries.

A sliding rheotome *E* is provided, which pulls out at the top of the handle and nicely graduates the current. The coil sets down into the wooden well and rests on its top edge by a shoulder, as seen at the joint *l*. The primary coil *g*, the secondary coil *h*, and the core *c*, of soft iron wire, are combined and adjusted to give the greatest strength of current with the least waste of energy from the cells. The vibrator arm and the ad-



justing screw *k* are of delicate construction and perfect mechanism. The connection of the cells is made by contact of the positive or carbon pole at *l*, and the negative or zinc pole at *n*. A thin copper ribbon leads from the zinc of the lower cell to a contact connection made at *n*. The coil and cells are easily removed and new cells can be replaced in a moment.

Fig. 2 shows coil and cells, removed from cane. The length of coil and cells is about 9½ inches. One of these cells alone has run the coil continuously for seven hours, and after a rest of twelve hours showed a current of .026 amperes. The normal capacity of the cells is 1.5 volts, .5 amperes, internal resistance 20 ohms, which is a marvelous showing for so small a cell (see cut, full size). These cells are renewed at a cost of 30 cents each, and should operate the coil for at least fifty sances of ten minutes each.



The cane is a highly-polished, well-finished stick, one inch in diameter at the top, gradually tapering to five-eighths of an inch at the bottom. The wood is furnished in ebony or imitation ebony, which is a hard, heavy wood, weighing five ounces more than the lighter wood. From the outside they can not be distinguished, and the writer prefers the lighter stick.

At the point is provided a screw cap ferrule (*X*), under which is carried a hypodermic syringe (Robinson-Dettmers), which is all-metal and aseptic, with but three parts, barrel, piston and needle (Fig. 3). The piston is hollow, to admit the carrying of tablets (*H*). The complete cane weighs eighteen ounces.

Miscellany.

United Twins.—*O Brazil Medico* of July 1, reproduces photographs of a pair of twins, bright, fairly well-developed girls of 6 years, who are connected together from the umbilicus to the level of the axilla. The parents have applied to Dr. Ramos to separate them, and he is now studying the case to determine the feasibility of an operation.

Frictions with Hot Salt Before the Douche.—Cooking salt is mixed with hot water to a semifluid mass with which the limbs and trunk are rubbed for a few seconds before applying the douche, as a hydrotherapeutic measure in cases where a defective reaction is anticipated.—*Semaine Med.*, July 5.

Electric Treatment of Gout.—Further experience is confirming the efficacy of Gnilloz' method of treating gout by

autoconduction of a long-continued high-frequency current combined with the electrolytic administration of lithium directly to the affected joints. Acute attacks are aborted, and chronic gout attenuated.—*Progress Med.*, No. 20.

Types and Tuberculosis.—Professor Landouzy formally states that the most marked predisposition to tuberculosis infection occurs in persons with white, delicate, transparent skin, marbled with veins, freckles usually, the hair on the head or body, or both, Auburn or red, iris blue, flesh soft, sweat easily induced, graceful outlines. This type is called Venetian in Europe, but not for any special prevalence of tuberculosis at Venice, which has rather a low death-rate from this disease, but probably on account of Titian's women. All or very nearly all of this type are tuberculous, in Paris at least, he asserts. Next in order come the scrofulolymphatic, persons who have been tracheotomized or have undergone other trauma, etc., and especially persons who have had smallpox. Delpeuch calls attention to a passage in Hippocrates' "Epidemics" describing tuberculosis and the persons affected as all having red hair and blue eyes, in his experience, the description almost identical with Landouzy's conclusions 2329 years later.

A Christian Science Druggist's Fate.—*The N. Y. Medical Journal* quotes the following from the *Pharmaceutical Era* for July 13: "The Christian science fantasy has claimed many dupes and victims. These have generally been those individuals who would be cranks anyhow upon some subject or other, so that it is only occasionally that the crimes of this sect have come to public notice through their effects upon the general public. It is therefore very startling to learn that one of a class of men who, it would seem, would be the very last to be duped by this fanatical faith, has succumbed to it, and lost his reason in consequence. Christian science does not believe in drugs; therefore a druggist who is also a Christian scientist must be regarded as a strange anomaly. It is a most incompatible mixture. Such a druggist can not practice what he preaches in both professions. If he is true to the science he can not sell drugs; if he can not sell drugs he must starve, and this is just the position of an unfortunate druggist in an Illinois town. He has gone crazy over Christian science. He lost his business because he advised his customers to leave drugs alone; and not only this, but his sister and niece have also become demented upon the same subject, and the former has died in an insane asylum."

Legal Status of Physicians in Indiana.—The State Board of Medical Registration of Indiana, through its secretary, Dr. Currier, recently asked Attorney-General Taylor for an opinion in regard to the standing of the faith eruders, Christian scientists, Dowieites, osteopaths, etc. The attorney-general gave the opinion on August 4. He first reviewed the standing of these various sects in the different states, giving the various decisions, and concluded with the following opinion: "In view of these authorities, and especially of the decision of the supreme court of Indiana, in the Benham case, it is my opinion that it is a violation of the law for an unlicensed person assuming the title of a doctor to prescribe or pursue any practices for the cure or relief of diseases, injury, or deformity, especially where any fee is charged for such services. It is perfectly obvious that the non-treatment of disease requiring treatment by an unqualified person may be as injurious as the administering of erroneous treatment or remedies, and it is my opinion that in enacting the statute of 1887 the General Assembly contemplated the protection of the public from the evil of non-treatment or non-action where necessary as fully as it did from wrong treatment. In so far then, as Christian scientists, faith curists, mental healers, and metaphysical mediators advertise themselves as physicians, and accept fees for treating disease, by silent or other forms of prayers, or by moral advice, or by profound thought, or by absolute non-

action, they unquestionably, in my opinion, violate the law. On the other hand, osteopaths and magnetic healers who hold themselves out as physicians, and advertise an ability to cure diseases, or who accept fees for the treatment of diseases, by prescribing for them either medicines or the simple laying on of hands, are, if unlicensed, violating the law. On the other hand, if they abstain from claiming to be doctors and from advising treatment, but simply administer massage under another name, there is nothing in the law which forbids them giving to their treatment what name they please, and there is nothing in the law which requires masseurs to be licensed, and one who administers massage, whether recommended by a physician or voluntarily sought by an afflicted person, is at liberty to charge for his services whatever he deems them to be worth."

Cerebrospinal Fever.—We have learned from the public health reports published by the United States Marine-Hospital Service, that during the past year this disease has existed in twenty-seven states and in the District of Columbia. During this period, too, examination of the mortality returns of our large cities has shown a marked increase in the number of cases styled meningitis. While many of these cases are, as formerly, instances of tubercular meningitis, results of ear disease, complications of typhoid and pneumonia masking the original trouble, yet some of them must be looked on as cases of genuine cerebrospinal fever, in that in many of the laboratories of these cities the specific germ as insisted on by Weichselbaum, the diplococcus intracellularis meningitidis, has been isolated. The work of Weichselbaum has been confirmed in this country by Councilman, and Mallory and Wright, the latter observers giving in their late book on "Pathological Technique," a most masterly account which would readily separate this from any other micro-organism. Suffice it to say here that, as the name of the disease indicates, the organisms occur in pairs, are present within the pus cells and even in the nucleus. They are decolorized by Gram's method.

Lately, before the Cincinnati Academy of Medicine, Greive demonstrated a tetracoccus which was isolated from the fluid of the spinal canal, obtained both before and after death. Examination of the fluid itself showed both tetrads and diplococci, and both were present within the cells. But one growth was obtained on culture-media, and examinations of these cultures showed mainly a tetracoccus, but a few diplococci were present. It is extremely probable that they were merely different forms of the same organisms, possibly the preparation of the slide being sufficient to convert here and there a tetracoccus into two pair of diplococci. Certainly these germs bore the closest relation morphologically to one another, and their behavior on culture-media greatly resembled that of the diplococcus intracellularis meningitidis. It seems improbable, considering the comparative infrequency of this form of meningitis of late years, to within the last few months, that the Cincinnati cases which presented the same complex symptomatology that has existed in patients scattered all over the Union, should be due to a distinct micro-organism, while the other cases show the specific diplococcus that has pretty definitely been settled on as the cause of the disease. More probable it is that the diplococcus may sometimes exist as a tetracoccus.

The close relation existing between pneumonia and meningitis has long been a subject of great interest on account of the frequency with which one occurs as a complication of the other. The chief point of difference is that pneumonia is spread widely all over the world; then, too, pneumonia as a rule runs a typical course ending by crisis. Still there are many who still maintain that the meningococcus is merely a variety of degenerative form of the pneumococcus.

The observations of Osler, as cited in his late Cavendish lecture (see *JOURNAL*, July 8, p. 98), are mainly confirmatory of the work of Weichselbaum, and give at the same time a care-

ful review of the subject. Osler's experience covered 21 cases, in 16 of which lumbar puncture was made. In 13 of these the diplococcus intracerebralis meningitidis was isolated, in 2 the cultures remained sterile, and in 1 staphylococci appeared in culture while the fresh cover-glass specimens are described as doubtful. All authors agree on what might be called the "fulness" of the symptoms; symptoms, cerebral, spinal, peripheral, and of course general, are all usually well pronounced in the same case, more so, indeed, than in any other variety of meningitis. Another point in which this variety is distinctive is the extremely abrupt onset, as abrupt as the onset of asthenic pneumonia. The fever shows no constant features, except perhaps irregularly; occasionally, however, it may be continuous, resembling that of typhoid; again it may be markedly intermittent, even accompanied by chills and rigors and give the impression of a malarial fever. The blood shows nothing very distinctive; leucocytosis is an almost invariable accompaniment, the count being as a rule over 15,000. The skin eruptions of the disease were, in Osler's cases, well marked: 13 out of the whole series showed a rash of some sort, herpes taking the lead with 8 cases, bearing out the statement of some authorities that herpes occurs more frequently in this than in any other acute affection. The other rashes included diffuse erythema, petechiæ, and a peculiar purpuric herpes over a livid erythema. Two of the most important points discovered in late years in regard to meningitis are the presence of the so-called Kernig sign, and the release of a considerable amount of fluid by lumbar puncture, the so-called Quinke puncture. The former test is elicited in the following manner: the patient is placed in a sitting position, and an attempt made to straighten the leg, which is in a position of flexion; inability to do this on account of contraction of the flexors constitutes the sign. When the patient is unable to assume the sitting position the test is made by flexing the thigh on the abdomen, when rigid resistance is met on attempting extension. This was present in all of Osler's cases, and in those the writer has recently seen as well. Netter's explanation of this phenomenon is that flexion elongates the spinal nerve roots and so increases their irritability; already greatly irritated by the inflammatory process, this increase of irritation is sufficient to cause reflex contraction of the flexors, particularly when the sitting position is assumed, as this latter augments the nerve stretching. The lumbar puncture is even more interesting, and is also of greater value. According to Osler, "during the past ten years no single measure of greater value in diagnosis has been introduced than Quinke's lumbar puncture." It is usually made between the third and fourth lumbar vertebra. By its aid we are not only able to make a diagnosis that meningitis is present but by examination of the exudate and inoculation of culture-media we are very frequently enabled to tell the specific cause. The amount of fluid varies from a few drops to several ounces and may be serous, serofibrinous, purulent or hemorrhagic. As to the therapeutic value of the Quinke puncture there is some variance of opinion. In the cases the writer has seen, the improvement has been prompt and marked, but unfortunately temporary. Usually the improvement has been in a lessening of the delirium, a better character to the pulse, and a lowering of the temperature. In one of Osler's cases numerous punctures were made at intervals entirely on account of supposed benefit. The clinical notes invariably described the patient as improved after a "wet tap." In all, seventeen punctures were made during a period of a little over a month, and undoubtedly this measure served to prolong the patient's life. It is to be hoped that this measure will be even more extensively used in the future: a single tap for diagnostic purposes; frequent puncture for the relief of the symptoms. Clearly, many of the symptoms from which the patient is suffering are from pressure, and equally clear is the indication for relief from this pressure. This can only be well done by tapping, just as when fluid in the pleura or pericardium can only be effectively done by the same means. The operation is not difficult nor is it likely to be attended with as much danger as the tapping of the pericardium.

The New Illinois Medical Practice Act.—We print below the questions submitted at the first examination held under the new law to the applicants for license to practice in Illinois. The first series of questions are those used in examining physicians; the second, those for "other practitioners." "Other practitioners" refer to those which Section 2 of the law calls "those who desire to practice any other system or science of treating human ailments, who do not use medicines internally or externally, and who do not practice operative surgery." Under this the osteopaths come in, and these—fourteen of them—were the only ones who applied for special license and took the examination. "Osteopathy" is, however, not recognized by the law, any more than any other sect which treats without medicine. Those who pass the examination will be licensed to treat human ailments without the use of medicines, and without the use of surgical procedures. The questions submitted for the specially favored class are certainly elementary enough. The very important subject of physical diagnosis was not taken up, but we understand it will be in the future examinations.

SERIES I.—FOR PHYSICIANS.
ANATOMY.

1. Trace the femoral artery from its origin through its large branches to the ankle. Describe the anatomical relations in the upper third.
2. How many tarsal bones are there? Name the largest and one of the smallest.
3. Name the muscles affected in torticollis, also state the origin and insertion of the principal muscle affected.
4. Name the largest arteries divided in amputation below the knee-joint.
5. Describe the diaphragm, its attachments, number and name of openings in it.
6. What are the number and names of the lobes of the liver?
7. What are the branches of the axillary artery?
8. Name the nerves forming the sacral plexus and its branches.
9. What is the sympathetic nerve system, and what parts of the body does it reach? Name and locate its chief nervous centers.
10. Give boundaries and contents of the popliteal space.

PHYSIOLOGY.

1. Give the physical properties and histologic characteristics of blood, and describe the process of coagulation.
2. What are proteids? What elements do they contain?
3. Describe the mechanism of the heart's action, and the sounds of the heart and their cause, also describe the manner in which the blood circulates through the heart.
4. State the differences between the adult and the fetal circulation.
5. Describe the liver, naming its functions, also state the use of glycogen in the body.
6. Describe the manner in which the nervous system affects blood-pressure.
7. Describe the mechanism of respiration.
8. State of what the spinal cord consists, and name the functions of the membranes of the brain and of the spinal cord.
9. Describe the three forms of digestion.
10. What is the source and what is the function of the saliva?

CHEMISTRY.

1. Define an element and a compound. Give examples of each and their symbol.
2. What is hydrochloric acid. Give synonym and chemical formula.
3. Name the different forms in which matter exists, and define each. Examples.
4. What is meant by qualitative analysis? Quantitative analysis? Structural analysis?
5. Give formula for normal acid, basic and a double salt.
6. What is oxygen, and how is it prepared from $KClO_3$?
7. What is the process termed when oxygen unites with another element, and amidst what phenomena does it usually take place?
8. What is an aldehyde, chemically speaking? From what and how is formaldehyde most readily prepared?
9. What is peroxid of hydrogen? Give properties and formula.
10. What is starch? How is it obtained? Mention a test by which starch can be recognized.

MATERIA MEDICA AND THERAPEUTICS.

1. Describe the therapeutic value of iethyol, and name its principal ingredients.
2. Give the action and uses of menthol.
3. Give doses, therapeutics and dangers of three coal-tar products most used as antipruritics.
4. Give the composition of Hoffman's anodyne, and Monsel's solution.
5. Name a few local and systemic emetics.
6. Compare atropin with morphin in physiologic effects.
7. Name the active principle of colchicum, and describe the therapeutic action.
8. Ergot, its physiologic and therapeutic action.
9. What would you do in a case of arsenic poisoning?
10. Write what you know of the urine as to: 1, its normal and abnormal pathologic constituents, and the manner of detecting the principal abnormal matters; 2, its specific gravity, stating upon what this depends, and the important information obtained through a knowledge of the specific gravity. Also state what the following conditions indicate: a, a high specific gravity, and a small amount of urine; b, a high specific gravity and a large volume of urine; c, a low specific gravity and a small amount of urine; d, a low specific gravity and a large amount of urine.

PATHOLOGY AND BACTERIOLOGY.

1. Describe calcareous degeneration, and give causes.
2. Describe the histologic structure of sarcomata.
3. What are the morbid changes that take place in the vessels in arteriosclerosis?
4. What are blood-changes in leucemia?
5. Differentiate between fatty degeneration and fatty infiltration.
6. Make a brief statement of the bacteriology of diphtheria, describing the micro-organism and the local and general tissue-changes produced by it.
7. Describe the bacillus of typhoid, giving its action and stating where found.
8. Describe the tubercle bacillus. How would you determine its existence in sputum?
9. Name the principal cocci which occur in suppurative process.
10. In what way do bacteria affect the animal organism? Is the nitrogen in the body affected by bacteria, and if so, in what manner?

SURGERY.

1. Describe spina bifida and spina ventosa.
2. Which do you consider more important in bone repair, the periosteum or the medulla?
3. Of what importance is the medulla in the formation of red blood-corpuscles?
4. Describe and differentiate between the hard and soft canerae.
5. Give the chief varieties of spinal curvature—non-tubercular. Name causes and give treatment.
6. Symptoms, diagnosis and treatment of Colles' fracture.
7. If a pistol-ball penetrated the skin and did not fracture the skull where would you search for the ball?
8. Give the treatment for penetrating wounds of the abdomen.
9. Give signs, symptoms and common varieties of dislocation of the shoulder-joint, and method of reduction of anterior dislocation.
10. Which wounds do you consider the more dangerous, those of the brain or those of the intestines? Why?

PRACTICE.

1. Describe the morbid anatomy and treatment of acute enterocolitis.
2. Give the causes, symptoms and treatment of cholelithiasis.
3. Name the various forms of stomatitis, and outline the general treatment.
4. Give the prompt and immediate treatment in a case of acute asthmatic attack of dyspnea.
5. Vesicular emphysema, its causes, symptoms and treatment.
6. Give the different diagnosis between cerebral hemorrhage, embolism, thrombosis and uremia.
7. Describe the pathology and treatment of thermic fever.
8. Give the common names, incubation period, period of eruption and duration of: a, rubella; b, rotheln; c, variola; d, varicella; and e, pertussis.
9. Diagnosis and treatment of typhoid fever.
10. Write what you know of catalepsy.

OBSTETRICS.

1. Describe the uterus, its normal position, its relationship to the other organs, and the means by which it is held in place.

2. How would you diagnose pregnancy before the fourth month? After the fifth month?
3. What means would you take to arrest a threatened abortion, and if abortion occurred, how would you know it was complete?
4. What is the most serious displacement of the uterus in pregnancy? How should it be treated?
5. What are the causes of, and how would you treat ante-partum hemorrhage?
6. Describe normal labor, giving the clinical characteristics and mechanism of each stage.
7. What would you do in a case of rupture of the uterus in the first stage of labor? What in the second stage?
8. What would you do if the head should be arrested in the inferior strait in pelvic presentation?
9. How would you manage a case of shoulder presentation after labor has begun?
10. Etiology, prognosis and treatment of puerperal fever.

GYNECOLOGY.

1. Give the blood-supply of the ovaries.
2. Give the causes of suppression of the menses, and describe menorrhagia and metrorrhagia.
3. Give the contraindications for the use of the sound.
4. Give the treatment of endometritis.
5. Give the symptoms and treatment of pelvic peritonitis.
6. Differentiate hematocoele from other pelvic lesions.
7. What are the causes and terminations of salpingitis?
8. Discuss the pathologic results of laceration of the perineum.
9. Give the differential diagnosis of: a, salpingitis from appendicitis; b, fibroid of uterus from pregnancy.
10. What are the causes of prolapsus uteri?

HYGIENE.

1. What is an antiseptic? A deodorant? A disinfectant? A germicide?
2. Name the three chemical germicides most commonly used, and state in what proportions employed.
3. Name: a, the disinfectant a solution of which should never be made in a tin vessel; b, the disinfectant which precipitates when brought in contact with albumin.
4. If called to a case of diphtheria in a family where there are other children, by what hygienic means would you hope to prevent the latter from contracting the disease? What precautions would you take to prevent your carrying the disease elsewhere?
5. What aerial disinfectant would you use for disinfecting an apartment after the occurrence of a communicable disease? Describe the manner in which it should be used.
6. Describe in full the manner in which you would disinfect a room in which a patient has been sick with scarlet fever.
7. What is the incubation period of: a, variola; b, varicella; c, rubella; d, scarlatina; e, scarlet fever?
8. What effect has ground air and ground water on health?
9. What diseases are due to impure water?
10. Give the minimum of cubic space to be allotted to each individual in: a, tenement houses; b, school-rooms; c, ordinary hospital wards; d, in a fever, surgical or obstetric ward.

MEDICAL JURISPRUDENCE.

1. What is the difference between the spasms of arsenic and strychnia poisoning?
2. When does complete ossification of the os innominatum take place?
3. When a male and female are found dead from asphyxia, which was more probably the survivor? Why?
4. In the case of both dying from the same accident, which would be the probable survivor?
5. In poisoning with prussic acid what symptoms would you expect to find?
6. What relation to insanity has remorse?
7. Define insanity.
8. What is the difference between paranoia and pseudo-mania?
9. What is the age of consent in Illinois?
10. Define a degenerate.

SERIES II—OTHER PRACTITIONERS.

ANATOMY.

1. Name the vertebrae forming the spinal column.
2. What is the scapula? Over what rib does it lie?
3. Name the ligaments of the hip-joint.
4. Describe the trapezius and the deltoid muscles, and give their action.
5. Where does the aorta commence, and into what does it divide and where?
6. Describe and locate the liver.
7. Between what ribs does the apex of the heart pulsate normally?

8. Describe the lungs, and state which lung is the shorter, and why? Also name the structures forming the root of the lung by which the lung is connected with the heart and trachea.

9. What is the sympathetic-nerve system, and what parts of the body does it reach?

10. Trace the internal saphenous vein from its commencement to its termination.

PHYSIOLOGY.

1. What is hemoglobin? Where does it occur in the body?

2. What are leucocytes? Where are they found in the body?

3. The difference in the substances contained in arterial and in venous blood?

4. The cause of the first sound of the heart? Of the second?

5. The number of normal respirations in the adult per minute.

6. The composition of the gastric juice.

7. Describe the systemic circulation of the blood. The pulmonary circulation.

8. Describe the mechanism of respiration, and state on what the movement of the lungs depends.

9. What is the function of the cerebellum?

10. Describe the tissue and nerve-fibers entering into the structure and arrangement of muscles, and discuss the stimuli affecting muscular substances.

PHYSIOLOGIC CHEMISTRY.

1. What are proteids? What elements do they contain?

2. State the occurrence of glycogen in the body and its chief source.

3. From what is the fat deposited in the body derived?

4. What is bile? From what is it derived? Name some of its characteristics, constituents, and two important pigments.

5. From what is the hydrochloric acid in the stomach derived?

6. What is the part oxygen takes in the physiologic process?

7. What is carbon dioxide? How is it formed in the body, and how got rid of?

8. Of what is the atmosphere especially composed? State proportions.

9. Describe the tissue changes in the spinal cord in locomotor ataxia (tabes dorsalis, posterior sclerosis).

10. Write what you know of the urine as to: 1, its normal and abnormal or pathologic constituents, and the manner of detecting the principal abnormal matters; 2, its specific gravity, stating upon what this depends, and the important information obtained through a knowledge of the specific gravity. Also state what the following conditions indicate: a, a high s. g. and a small amount of u.; b, a high s. g. and a large volume of u.; c, a low s. g. and a small amount of u.; d, a low s. g. and a large amount of u.?

HYGIENE.

1. What is meant by ventilation?

2. What precautions would you take relative to the matter coughed or spit up by consumptives? What danger, if any, will result if these discharges are deposited on the floor?

3. In hospital wards for ordinary cases, what cubic air-space should be allowed to each bed?

4. Why is milk so nearly perfect food? Why are eggs so highly valued for food?

5. What effect has the contraction of a muscle on the flow of the blood through it?

6. What is the incubation period of typhoid fever? Of measles?

7. What is meant by disinfection? How would you disinfect a room after the death or recovery of a patient suffering from diphtheria?

8. How is corrosive sublimate, bichlorid of mercury or carbolic acid used as a disinfectant, and in what proportions?

9. Give the size of a model school-room accommodating forty pupils. On what side of the pupil should the light be admitted, and why?

10. After attending a case of scarlet fever, for instance, what precautions would you take to prevent carrying the disease to your family, friends or patients?

HISTOLOGY AND PATHOLOGY.

1. What is epithelium? Where is ciliated epithelium found in man?

2. Describe hyaline cartilage, and state in what situations it principally occurs.

3. In what manner is true bone essentially formed, or of what is it always made up?

4. Describe the histologic structure of an artery. Of a vein.

5. What are medullated nerve fibers? What important nerves are composed of these fibers?

6. Describe the manner in which fractured bone unites.

7. Give the definition of necrosis and definition of gangrene.

8. What histologic elements are directly concerned in inflammatory processes?

9. What are the structural changes in the blood-vessels in arterial sclerosis?

10. Enumerate the different stages of acute lobar pneumonia, and describe the gross appearance of the lungs in some one of these stages.

San Francisco Notes.

POLITICS AND HEALTH.—The conflict between the Board of Health and the Supervisors, backed by the auditor, has assumed a phase that promises much harm to the city of San Francisco. The auditor refused to audit the Board of Health's warrants for employes not definitely specified by the statute, and consequently many of the Board's employes, a number of them useless political burdens, were forced out of their jobs. The Board has retaliated by closing all the receiving hospitals of the city, under the excuse that they can not operate them on the money allowance granted by the Board of Supervisors. To-day there is not a hospital open, save the City and County Hospital and the pest-house. A daily paper has taken the matter up, and opened the water-front receiving hospital, which it proposes to operate on its own account and for advertising purposes, until the present muddle is cleared up. Already the evil effects of certain changes and reductions on the Board of Health staff are being felt. An unscrupulous cattle-dealer has gone about through the nearby counties and bought up, very cheap, a lot of tuberculous cattle, which he shipped to the city of San Francisco in the most open and barefaced manner. Fortunately, a meat inspector happened to see the lot, and got the former veterinary of the Board of Health to volunteer his services as inspector of this bunch of cattle; they were condemned and sent into quarantine to be subsequently killed and burned. But, if within the short space of a few days this much has been attempted, one can but imagine what may follow. The root of the whole trouble lies in the fact that in the fall there will be held an election under a new charter, and the political bosses are all striving to secure as much patronage as they can in order to influence things at that election. If they can appoint a hundred or two of their political friends to jobs in the Board of Health office, then this hundred or two can do a good deal of electioneering, and help on the party through which they secured their appointments. The truth of the whole matter is fully understood by every one, yet the maneuvering for political advantage goes on all the time. Under the new charter these city offices will be appointed by the mayor, who will control almost all the patronage, and consequently the strife is a particularly bitter one.

A DISGRACE ENDED.—An order of the Board of Supervisors has recently brought to a sudden end what promised to be a most unique business enterprise in the line of houses of prostitution. Some few months ago certain men in San Francisco conceived and brought forth a scheme which was very simple, yet truly unique. They obtained a large piece of property in a rather poor section of the city, not far from the section known as "Chinatown." On this they built a two-story building, or rather nest of buildings. From the street it looked like a simple two-story building without windows. There were two large doorways, opening upon an alley-way that led all around the four sides of the building. Within the outside enclosing wall, and opening from these alleys, were 250 "cribs" which rented for the sum of \$15 per week, so that the income from them alone was something over \$16,000 per month. Besides this, each occupant paid a certain doctor—she was not allowed to choose her own—the sum of \$1.00 per week. The doctor's income from this source therefore came to a little over \$1100 per month. The natural inference is that the doctor was directly interested, to no small extent, in the building. Whatever the truth of that may be, it is cer-

tain that the "cribs" were in great demand, for the reason that a number of alleys in the city, heretofore given up to that sort of tenantry entirely, have within a short time been closed by the police department, after a long and strenuous work on the part of nearby property-owners and certain churches. The scheme was but short-lived, for the property-owners in the vicinity brought the matter to the attention of the Board of Supervisors, with the result that it was closed. The latest development in the question is the statement that the aforesaid property-owners are to have the "Corporation," or the members thereof, arrested and prosecuted on the ground that they have violated a certain statute, which makes it a misdemeanor to rent property for purposes of prostitution. It is possible that in the course of the case the name of the doctor who was so much interested in the success of the business may come out. Your correspondent is aware of the doctor's name, but unless it transpires in some other connection, he is not at liberty to disclose it.

August 2, 1899.

London.

From Our Special Correspondent.

ROYAL COLLEGE OF SURGEONS.—The chief topic of interest in the English profession at present is the situation at the Royal College of Surgeons, between the Members and the Council, mentioned in previous issues of the JOURNAL. A moderate, powerful and widely-signed memorial has just been presented to the Council, which carries such weight, by reason both of the standing of its signatories and the wide-spread attention which it has attracted, that even that body can no longer evade or loftily shelve the issue. Their only reasons for hesitating to grant the representation asked for are that they themselves are—naturally—satisfied with the present state of affairs, as illustrated by their president's childishly feeble appeal to the Members, at the annual meeting, not to insist on their rights, because many of the Fellows were opposed to granting them, and the harmony of the Centenary would be disturbed! Their other, the sacredness of ancient custom—always a telling argument—has received its death-blow in the present memorial, in which the uncomfortable fact is shown that, from the foundation of the College in 1800, until 1843, the only alumni of the College were Members, who, of course, controlled its affairs, and it was only on the creation of the higher rank of Fellows in that year that all the power was turned over to the present "aristocracy." The injustice of the present position demonstrates itself in a simple statement of numbers. Some 1300 Fellows absolutely control the affairs of a College consisting of nearly 25,000 Members. The Council could give points to "Oom Paul." The moderateness of the appeal of the Members may be judged from the fact that they do not even ask for direct representation, but merely for the right to elect a certain number of Fellows, to represent them on the Council. They make no complaint of, or even reflections on, the competence or fairness of the Fellows' government, but when we remember that the great majority of this ruling class are either city consultants or specialists, we can easily see how little such a body is capable of legislating intelligently on questions involving the interests of the great body of general practitioners, even with the best intentions. And no more favorable or becoming opportunity for granting fair representation to all will ever come than the new charter which is to mark the coming Centenary.

FOOD ADULTERATION.—A curious form of "adulteration" of food was brought to light, created, in fact, in Parliament this week. A most extraordinary clause was introduced in the new Food and Drugs bill, making it illegal for oleomargarin to contain more than 11 per cent. of genuine butter. This strange provision was defended on the ground that if more than this proportion of butter is added to the oleo "bren" it interferes with the simpler tests of the official analysts and renders its distinction from butter quite difficult. In short, the public are not to be allowed more than a certain standard of goodness in

their food, for fear of inconveniencing the Government analysts. The question at once suggests itself, if neither the taste of the consumer nor the tests of the chemist can detect any difference between margarin and butter, and they are both equally wholesome—as most experts are agreed—why legislate against the former, in the interests of public health? In point of fact, most of this legislation, in both England and America, is a political sop to conciliate the farmer vote—wherefore the Government summoned its irrational majority and drove the offensive clause through, in spite of the vigorous criticism of the House.

NURSES IN ENGLAND.—The largest school for nurses in England, indeed probably in the world, is that attached to the London Hospital, where no less than 400 probationers are at work under the leadership of Miss Eva Luckes, the gifted superintendent. The school receives an average of nearly 2000 applications per annum for nurses.

CANCER.—The Government has declined to appoint a commission to investigate the prevalence and causation of cancer, saying, not unreasonably, that in the present state of our knowledge of the causation of the disease, but little of practical value could be hoped from such a commission. And, indeed, if the commission is to be necessarily after the type of most of its predecessors, consisting of a majority of titled and political duffers and a minority of scientists, which aggregation, after three years' cogitation, announces as its findings the commonplaces of professional knowledge, not much is to be hoped from it; but a real research commission, whose chief object was to enable skilled investigators to devote their entire attention to the investigation of the problem for two or three years, might make some valuable changes in the "present state of our knowledge." The interest of the public has been so thoroughly aroused that the authorities will probably be obliged to take some step in this direction, even the Church Sanitary Congress, having recently passed a resolution severely censuring their refusal to appoint a commission.

MYSTERIOUS POISONING.—A curious case of mysterious poisoning at Greenwich has caused some excitement in London, on account of the number involved. A party of some 200 children who were out on a school treat, sat down to a simple picnic lunch of cherries, small cakes and milk. Within twenty minutes of the end of the meal complaints of "belyache" began, and before three-quarters of an hour had passed no less than eighty or ninety were rolling on the grass in severe pain. Fortunately medical assistance was promptly secured, the vans which had brought the children to the park were utilized as ambulances, and the worst cases taken to the great Dreadnought Hospital, which was providentially near. Here most of them recovered sufficiently promptly to be taken home by their parents that night, only two having to remain in the Hospital, and they were reported out of danger next morning. The cause of the trouble is still a complete mystery.

MARY ANSELL.—Now that Mary Ansell is executed and the excitement subsiding the truth about the wretched girl is beginning to leak out. The papers assured us that everyone who had had anything to do with the family regarded her as of unsound mind, or as a "degenerate." Now comes her school teacher, in a quiet little letter, and states that since her name has been mentioned in that category, although she kept silence as long as the unfortunate girl had any chance of reprieve, she now feels that she ought to say that she knows of nothing which would justify her in regarding her as defective in any way. She was in her school six years, during which time she passed through every grade prescribed in the course and never failed in a single examination, in fact, passed most of them with credit. Her scholarship was slightly above the average of girls at her age. The teacher thinks that many people have confused her with her victim, who was only a few years younger and unquestionably defective.

SPOILED FRUIT.—A startling illustration of the protection to the public health afforded by sanitary inspectors and medical officers of health has just been afforded in the seizure, in the great Lipton's canning factory in South London, of no less than 250 tubs of spoiled fruit about to be made into jam. Think of the number of cases of "sporadic" gastro-enteritis, etc., which this two and a half hundred tons of decaying fruit changed into "jam" would have caused in the community; and then say, if you can, that "preventive medicine" is a fad.

Queries and Minor Notes.

CALCULUS IN LUNG.

OMAHA, NEB., July 30, 1899.

To the Editor:—I have just had a very interesting case in which a man coughed up a calculus from the lungs. I can find absolutely nothing on the subject of the bronchial calculus in any of the text-books or periodicals available here. Can you give me any reference on the subject? LER. C.

ANSWER:—Calculi of the bronchi appear to be rare, though they have quite a little "casuistic" literature of their own, going back as far as the sixteenth century. In the last series, Vol. iii, of the "Index Catalogue of the Library of the Surgeon-General, U. S. A.," there are eighteen separate articles on the subject, and still larger a number in the first series. The only separate monograph noticed is that of Pavalion: "Leo Pierres du Ponnon, etc., Paris, 1891." Modern text-books apparently have little to say on the subject. It is only barely mentioned in Thomas' "Pathology," for example, and is entirely omitted in some others. A report of our correspondent's case would be of interest. Most of the literature of the subject appears to be French, the only American case in the last volume of the "Index Catalogue" being Munson's, in 1788. The latest article in the English language then given is that of Ross, *Australian Med. Jour.*, 1892, xiv, p. 300.

CONTRACT PRACTICE.

ST. LOUIS, MO., August 3, 1899.

To the Editor:—I wish to consult you on a question of ethics. I am offered the practice of a large manufactory on a salary to look after the operatives and their families, and a still larger one obtained by taking on a monthly a fixed amount of their operatives' wages. I am just starting out in my professional life and wish to be on the right side. L. E. B.

ANSWER:—The question of ethics here involved would probably depend largely on details not given in our correspondent's letter. It is undoubtedly the legal right of a company to employ medical service for its employees, whether or not it is for the best interests of the physicians. If the pay is equivalent to the average that would be derived from a medical practice covering an equal population, and the physician therefore is not cheapening himself by accepting it, the case is different from that where the service demanded is such that the average remuneration is reduced. This contract business, on general principles is bad, demoralizing to the profession, and has worked most disadvantageously to the profession in Europe, as it will in this country if allowed to extend too much. The spirit as well as the letter is the guide to the "Code of Ethics," and where the letter is silent the spirit of the Code to do as one would be done by should be the ruling motive.

DETERMINATION OF SEX.

SEDALIA, MO., July 27, 1899.

To the Editor:—It would be a great favor to me if you would inform me where or how I could get the complete works of sex determination by Dr. Schenck, as I would like to make a further study of the subject.

G. A. C.
ANSWER:—Dr. Schenck's work, "The Determination of Sex," has been translated and is published by the Werner Company, Akron, Ohio, Chicago and New York. Price \$1.50. It gives his theory and the substance of what he has written on the subject.

The Public Service.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., to and including August 2, 1899:

- Thomas B. Anderson, appointed captain and asst.-surgeon Vols., July 5, 1899, and assigned to the 37th Vol. Infantry in the Philippines.
- Isaac W. Brewer, appointed lieutenant and asst.-surgeon Vols., July 5, 1899, and assigned to the 36th Vol. Infantry in the Philippines.
- Edwin F. Gardner, major and surgeon, U. S. Army, leave of absence extended.
- John C. Greenwald, appointed lieutenant and asst.-surgeon Vols., July 5, 1899, and assigned to the 35th Vol. Infantry at Fort Sam Houston, Texas.
- Frederick Hadra, appointed captain and asst.-surgeon, July 5, 1899, and assigned to the 33d Vol. Infantry, Fort Sam Houston, Texas.
- Deane C. Howard, captain and asst.-surgeon, U. S. Army, from temporary duty at West Point, N. Y., to Fort Columbus, N. Y.
- D. J. Johnson, acting asst.-surgeon, from Fort Terry, N. Y., to San Francisco, Cal., for duty in the Department of California.
- P. S. Kellogg, acting asst.-surgeon, from Battle Creek, Mich., to San Francisco, Cal., for duty in the Department of California.
- T. H. Landon, acting asst.-surgeon, from Canton, Ohio, to San Francisco, Cal., for duty in the Department of California.
- Henry Lippincott, lieutenant-colonel and deputy surgeon-general, U. S. Army, member of an army retiring board convened in San Francisco, Cal.
- George W. Matthews, appointed captain and asst.-surgeon Vols., July 5, 1899, and assigned to the 36th Vol. Infantry in the Philippines.
- James Mitchell, acting asst.-surgeon, from Lancaster, Pa., to San Francisco, Cal., for duty in the Department of California.
- Curtis E. Munn, major and surgeon, U. S. Army, member of a retiring board convened in San Francisco, Cal.
- Seaton Norman, acting asst.-surgeon, to temporary duty at Fort Monroe, Va.
- Orden Rafferty, major and surgeon 27th Vol. Infantry, former orders

revoked. He is relieved from further duty and station at Willet's Point, N. Y.

- William Redin Kirk, acting asst.-surgeon, from Washington, D. C., to San Francisco, Cal., for duty in the Department of California.
- Maxwell S. Simpson, acting asst.-surgeon, from Plainfield, N. J., to San Francisco, Cal., for duty in the Department of California.
- George W. Sims, acting asst.-surgeon, from Corpus Christi, Texas, to San Francisco, Cal., for duty in the Department of California.
- Dwight B. Taylor, acting asst.-surgeon, sick leave extended.
- F. H. Titus, appointed major and surgeon Vols., July 5, 1899, and assigned to the 36th Vol. Infantry in the Philippines.
- William Mc Van Patton, captain and asst.-surgeon 1st Washington Infantry, discharged for disability.
- Walter R. Washburn, acting asst.-surgeon, from Denison, Texas, to San Francisco, Cal., for duty in the Department of California.
- F. A. Winter, appointed major and surgeon Vols., July 5, 1899, and assigned to the 37th Vol. Infantry in the Philippines.

Movements of Navy Medical Officers.—Changes in the medical corps of the U. S. Navy for the week ending August 3, 1899:

- Asst.-Surgeon, C. A. Crawford, detached from the *Wabash* and ordered to the *Massachusetts*.
- Asst.-Surgeon, E. J. Grow, detached from the *Massachusetts* and ordered to the *New Orleans* immediately.
- Asst.-Surgeon M. S. Elliott, detached from the marine examining board, August 2 and ordered to temporary duty at the marine recruiting rendezvous, New York, during leave of P. A. Surgeon E. S. Hoger; upon completion of this duty, directed to await orders.
- Surgeon C. G. Herndon, ordered to the museum of hygiene for temporary duty.
- P. A. Surgeon J. C. Rosenbleuth, detached from the *Vermont* and ordered to the *Nashville*.
- Asst.-Surgeon, F. L. Pleadwell, detached from the *Nashville* and ordered to the bureau of medicine and surgery.

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended August 5, 1899:

- SMALLPOX.—
 - Florida: Jacksonville, July 23 to 30, 4 cases.
 - Kentucky: Louisville, July 20 to 27, 2 cases.
 - Louisiana: New Orleans, July 15 to 21, 1 case.
 - Ohio: Cleveland, July 22 to 29, 7 cases; Dayton, July 22 to 29, 3 cases.
 - Pennsylvania: Philadelphia, July 22 to 29, 1 case; 1 death; Pittsburgh, July 22 to 29, 1 case.
 - Virginia: Portsmouth, July 22 to 29, 4 cases.
 - Washington: Seattle, July 15 to 22, 1 case; Tacoma, July 15 to 29, 2 cases.

- SMALLPOX—FOREIGN.
 - Brazil: Bahia, July 1 to 15, 1 case.
 - China: Hongkong, June 7 to 24, 3 cases.
 - Greece: Athens, July 7 to 15, 16 cases, 5 deaths.
 - India: Bombay, June 27 to July 4, 8 deaths; Madras, June 24 to 30, 1 death.
 - Mexico: Chihuahua, July 15 to 29, 3 deaths.
 - Russia: Moscow, July 1 to 8, 5 cases, 3 deaths; Odessa, July 1 to 8, 6 cases; St. Petersburg, July 1 to 8, 7 cases, 2 deaths.
 - Turkey: Beirut, June 27 to July 1, 1 case; Smyrna, June 28 to July 16, 3 deaths.

YELLOW FEVER—UNITED STATES.

- Virginia: Soldiers' Home, Hampton, July 21 to August 1, 49 cases, 8 deaths.

YELLOW FEVER—FOREIGN.

- Brazil: Bahia, July 1 to 15, 28 cases, 14 deaths.
- Colombia: Panama, July 16 to 23, 14 cases, 8 deaths.
- Cuba: Manzanillo, July 1 to 8, 1 death; Matanzas, July 27, 1 case; Santiago, July 1 to 8, 7 deaths.
- Mexico: Progreso, July 26, 2 cases; Vera Cruz, July 20 to 27, 20 deaths.

CHOLERA.

- India: Calcutta, June 17 to 24, 3 deaths.
- PLAGUE.
 - China: Hongkong, June 10 to 24, 257 cases, 255 deaths.
 - India: Bombay, June 28 to July 4, 45 deaths; Calcutta, July 17 to 24, 7 deaths.
 - Japan: Tamsui, May 24 to 31, 90 cases, 66 deaths.

CHANGE OF ADDRESS.

- Braselton, B. E., from Weatherford to Vineyard, Texas.
- Cass, W. E., from Dayton, Ohio, to 1604 Locust St., St. Louis, Mo.
- Cannon, Jas., from 529 Walnut to P. O. Box 324, Des Moines, Iowa.
- Dubell, A. E., from Burlington to Columbus, N. J.
- Drosier, G. W., from Danville to 1645 14th Ave., So., San Francisco, Cal.
- Gill, H. Z., from Topeka to Pittsburg, Kan.
- Houston, I. M., from Nebraska City to Falls City, Neb.
- Johnson, H. P., from Long Prairie, Minn., to Fairmont, Minn.
- Kimball, A. L., from Ann Arbor, to 744 Col. Ave., Racine, Wis.
- King, P. H., from Niantic to Kyle, W. Va.
- Kloke, W. E., from 372 Blue Island Ave. to 235 S. Lincoln St., Chicago.
- McLaren, J. J., from Seymour to Grand Rapids, Wis.
- McLaren, J. L., from Los Angeles, Cal. to Saginaw, Mich.
- Payment, R. C., from Wilcox to 1011 River Ave., Detroit, Mich.
- Phillips, W. L., from Cleveland, Ohio, to Univ. of Virginia, Charlottesville, Va.
- Quinn, W. E., from Lyndon, Kan. to Las Cruces, N. M.
- Simonton, A. C., from Seattle to Roslyn, Wash.
- Shaw, W. E., from 481 to 274 Colerain Ave., Cincinnati, Ohio.
- Townsend, W. R., from 28 N. 59th to 23 W. 53d St., New York City.
- Tenney, J. T., from Wabasha to Kellogg, Minn.
- Wiedrich, J. W., from 14 Platt to 417 W. 33d St., New York City.
- Watson, S. H., from Vinton to Blairtown, Iowa.
- Westervelt, J. Douglas, 215 Main St. to Suite 205 No. Texas Bank Building, Dallas, Texas.

The Journal of the American Medical Association

VOL. XXXIII

CHICAGO, ILLINOIS, AUGUST 19, 1899.

No. 8.

Original Articles.

THE PNEUMONIA QUESTION.

SOME INTRODUCTORY CONSIDERATIONS.*

BY EDWARD F. WELLS, M.D.

CHICAGO.

Pneumonia is the greatest medical problem of the day. In temperate regions it is chargeable with more deaths than any other disease, with a single exception—only pulmonary tuberculosis leading it in the mortality bills. It is, moreover, one of the most dangerous of the acute diseases and has an appalling death-rate. It is not only a malady which is ubiquitous, frequent, severe and dangerous, but now, in these waning days of the 19th century, we must frankly confess that its prevalence, frequency, severity and dangers have not been one whit diminished by our immediate predecessors or ourselves.

In opening the discussion on this important question it will be clearly impossible for me to cover, however superficially, the entire subject, or even to deal exhaustively with any part of it. My endeavor, therefore, shall be to consider, suggestively if possible, a few of the numerous practical points which seem to be of greatest present interest.

In order that there may be no confusion or misunderstanding it may be well for me to state that my remarks will refer to one malady, ordinary pneumonia—febris pneumoniae—an acute infectious disease of bacterial origin, having well-defined symptoms and positive anatomical changes; an affection which is readily recognizable during life and leaving unequivocal evidences of its presence after death.

In typical cases the access is sudden, with a chill, followed by fever, pain, cough, characteristic expectoration, increased frequency of respiration, disturbance of circulation, changes in the blood and urine, and evidences of the solidification of one or more lobes of the lungs. The disease quickly attains a high degree of severity and steadily maintains this for about a week, with rapid entrance upon convalescence while the lung is yet completely hepatized; or death in a few hours after the onset of alarming symptoms. Post-mortem section shows the affected pulmonary area peculiarly inflamed, with the alveoli filled with a solidified fibrinous exudate and the pleural covering the seat of a sero-fibrinous inflammation. In the expectoration and in the alveolar exudate is found the etiologic morbid organism.

The essential cause of pneumonia is the diplococcus pneumoniae—the pneumococcus of Fränkel. This assertion can be made, at this day, and before this audience, without appeal to either argument or authority.

The pneumococcus is rounded or tapered at both ends and has a mucinous capsule. It is found single, often

paired, or frequently in groups, enclosed in the same or in adhering capsules. It colors readily with aniline dyes and is not affected by the Gram method. It is cultivated with difficulty, and much care is required to obtain pure growths. It does not lend itself kindly to saprophytic existence, and has not yet been found in the air. It will not grow in acid media and cultures produce an albumose and an acid. Its capsule is lost by cultivation. It varies in size, appearance and virility. Its virulence diminishes as convalescence advances. It loses virulence by cultivation, but this may be restored by passage through the rabbit. An organism which can not now be differentiated from the pneumococcus is present in the mouth and upper air-passages in a large proportion of healthy persons. Diplococci from the mouth are less active and can not be made as virulent as those from pneumonic sputum or exudate. To round out our knowledge of the pneumococcus we need definite answers to the following questions: Is the diplococcus found so frequently in health in the mouth and upper air-passages identical with that found in the pneumonic exudate and sputum? If so, how does the organism obtain entrance into the mouth and nostrils? Has it a wide-spread saprophytic existence, finding its way into the body with the inspired air, or does it pass from one person to another only by direct conveyance of the moist or dried secretions? If it is not identical, whence comes the pneumococcus, and what is its life's history outside the body? What measures can be instituted to destroy the germ outside the body, prevent its entrance into the system, or render it innocuous after entrance? Any intelligent prophylaxis will depend upon full and complete answers to these questions.

The blood is markedly and distinctively altered by the pneumococcal infection. As the attack advances, the specific gravity and hemoglobin are increased, to fall to or below the normal for the individual as resolution progresses. The white blood-corpuscles, especially the polynuclear cells, are usually largely increased in number. This leucocytosis begins as early as the chill, and may be of diagnostic value in those cases in which the inflammation begins deeply within the lung. It corresponds roughly with the extent of pulmonary involvement, the temperature curve and the vehemence of the attack. Its continuance after crisis often indicates the presence of complications. The presence of leucocytosis has no great prognostic value, but its absence, except in the very mildest cases, is an ominous circumstance. The consensus of opinion seems to be that there is an advance into the general blood-current of pre-existent leucocytes and not a greatly increased formation of these cells. Does leucocytosis protect the blood current from the pneumococcus and its toxins? It may be that the near future will demonstrate that the leucocytes form a large and effective portion of the sanguinary army of defense, acting as bacterial phagocytes, by saturating the serum with protective and neutralizing and germicidal substances—a hidden force, held in reserve in the

*Presented to the Section on Practice of Medicine, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

lymph-spaces or by contracted capillaries, ready to rush out and do battle with the first appearance of the pneumonia fœc.

The fibrin, or fibrin-forming material, is greatly increased, probably running parallel with the leucocytosis. The proportion of fibrin in the shed blood, which in health is 2 or 3 parts per 1000, rises at the height of the attack, to 4, or even 10 parts per 1000. The density of the network of fibrinous threads in cover-glass preparations is notably increased, and if the Thoma-Zeiss cell is employed the estimate of comparative coagulation may be fairly accurate. The rouleaux formation of red blood-corpuscles upon the slide is due in the presence of an agglutinating substance, presumably fibrin, and in pneumonia rouleaux formation is exaggerated. If healthy blood is acted upon by pneumonic serum rouleaux formation is also exaggerated, with a peculiar clumping of cells, which latter, however, is not distinctive.

Cardiac thrombosis is met with oftener in pneumonia than in any other disease, and is one of the most serious contingencies which may occur. In analyzing the records of 777 pneumonic post-mortem examinations, I found that ante-mortem heart-clots were present in 169, or 21.7 per cent. If we assume that the death-rate of pneumonia is about 21 per cent. and that all the cases with thrombosis are fatal, we may conclude that ante-mortem clotting of blood in the heart occurs in about 4.5 per cent. of all cases. These clots may be small or they may be so large as to weigh up to two ounces; they may be a mere patch upon the endocardium, a rounded mass within one of the cavities, or a thick or thin elongated clot originating in the auricle, passing through the ventricle and extending several inches into the afferent vessels on one or both sides. Although a cardiac thrombus may become organized or, possibly, undergo solution, with recovery, yet the fact remains that post-mortem examinations of persons recently subjects of pneumonia do not, with very rare exceptions, disclose such conditions. We must infer, therefore, that the formation of such a thrombus is an event which usually leads to death. The condition is seldom recognized during life, and here is a diagnostic problem of great practical importance which the clinician is called upon to solve.

The blood may, and probably always does, contain pneumococci. If they are present in sufficient numbers to be readily found during life, the case is attended with more than ordinary danger, and if they are numerous, death within twenty-four to forty-eight hours is the rule.

The toxemia of pneumonia is due to the development of pneumococcal toxins and, probably, antitoxins; to destructive changes in the normal constituents of the blood; to the withdrawal, by the exudate, of important elements; to diminished aëration; to contamination by the excessive waste products of the body in general and of the inflamed lung in particular; and to interference with excretion.

The hemic changes affect particularly the nervous system. The initial effect of the pneumococcus toxins, necessarily infinitesimal in amount and diluted beyond computation, upon the thermogenic center is to produce a profound chill and incite a raging fever. The vasomotor system of nerves is instantly affected. The pulse is accelerated in direct proportion to the danger. A comparatively slow pulse is of good import, while very few adults will recover after the 140 mark has been gradually reached and crossed.

The arterial tension is always lowered, the diminution measuring with accuracy the severity and danger of the case. This lowering of arterial tension is due to capillary paresis, and not to any primary heart failure. This selective inhibiting action upon the vasomotor system is one of the most remarkable effects of the pneumococcus toxins. Whether the primary action is upon the terminal nerve-fibers in the vascular walls, or upon the vasomotor center in the cerebral extension of the spinal cord, I am not prepared to say. The fact remains that the arterioles and capillaries are relaxed, and in serious cases they are so parietic as to afford the slightest resistance to the passage of blood through them. In many serious cases of pneumonia careful observation will show that the contracting left ventricle is throwing blood into nearly empty arteries and that this fluid passes through the capillaries with such force that the veins beyond pulsate, as may be easily detected in the dependent hand. The body is nourished by the osmosis of fluid portions of the blood through the capillaries, the rate being regulated by a delicate adjustment of the intravascular tension. Under the circumstances above mentioned every tissue of the body must lack in nourishment, the heart, because of the source of its blood-supply, perhaps more markedly than other parts. It may be said, and possibly with truth, that the relaxation of the capillaries is a defensive measure intended to prevent the poisoning of tissues without, but, in any case nutrition fails, the soft tissues become loaded with the poisons of their own waste and the patient falls between the lines of his two enemies. Herein, I believe, lies the most imminent danger, and the chief determining cause of death in pneumonia.

The interesting and important questions which cluster around such of the phenomena of this disease as the forcible contraction of the heart against an increased resistance on one side and a diminished resistance upon the other; the increased frequency of respiration, irrespective of the extent of the hepatization and out of proportion to the exaltation of temperature; the peculiar character of the expectoration; the diversion of the chlorids from the blood to the exudate; the suddenness of symptomatic convalescence while the lung remains solidified; the uniformity of the symptomatology in general; and others of equal moment, must be passed for lack of time.

A moment's attention, however, is asked to two symptoms of prognostic import: During the pneumonic attack reflex sensations are weakened in proportion to the danger. Now, a dyspnea, which is readily recognized by the observer, but which is not appreciated by the patient, is of grave augury, and when accompanied by a rising and falling of the trachea and a non-obtrusive clicking noise with respiration, which persists after coughing, the patient has, in my experience, invariably died. The prognostic value of this syndrome lies in the fact that it antedates all others which certainly denote the approach of death. On the other hand when, late in the attack, the patient awakens from a sound sleep and sneezes, his safety may be assured.

The death-rate of pneumonia is very great. Eight years ago I published a table showing the mortality of pneumonia, embodying the statistics of 223,730 cases, of which number 40,276, or 18.1 per cent. died. This inquiry has been continued, and I have collected 134,705 other cases, with a mortality of 37,715, or 28 per cent. My full table now comprises 358,435 cases, with 77,991 deaths, or a death-rate of 21.7 per cent. From a careful consideration of the materials upon which these statis-

tics are based, I am convinced that the mortality-rate here shown is not overestimated.

Fatal cases of pneumonia are readily divisible into three classes: 1. Those in which the pulmonary involvement is so extensive, or the toxemia is so profound, or because of other conditions, we instinctively feel, from a clinical stand-point, that death was inevitable. 2. Those in which, upon post-mortem examination, we stand astounded that life should have been so long continued in the face of the most extensive involvement and destruction of vital organs. 3. Those in which the clinical phenomena and morbid changes in the tissues are of such slight extent and degree as to excite our wonder why and how death occurred.

There is an art, as well as a science of medicine, and, usually, medical inquiries end in the consideration of methods of management. In pneumonia the treatment should resolve itself into reasonable prophylaxis; in making the patient comfortable; in preventing excessive formation of toxins, in neutralizing them, in encouraging their elimination and increasing the resisting powers of the system against their action; in preventing, or managing properly, the complications which may arise. I regret that time will allow me to consider, cursorily, only one of the many interesting and important questions here presented.

Bleeding in pneumonia has been discussed for so many generations and from points of view so diverse that I approach the subject with reluctance, and it is only because I believe it a remedial resource which has no efficient substitute that I ask you to consider it at this time. It is not desirable that the former routine treatment of pneumonia by excessive bleedings should ever be restored to professional favor, yet I am sure that the physician who wholly abstains from venesection deprives his patient of a most potent remedy.

Venesection is not necessary in every case of pneumonia, and the patient, time and conditions should be carefully selected. The very young and the very old, the weak and the anemic, should not, as a rule, be bled; nor should those in whom the evidences of obstruction of the pulmonary circulation, or of increasing toxemia, is not marked, but in others in whom these conditions exist, the lancet should not be spared.

With an obstructed pulmonary circulation there is a damming back of the blood into the right cavities of the heart and general venous system. The pulse is not rapid and has considerable tension; the breathing is oppressed, accelerated and laborious; the patient is alarmed, and his anxiety is depicted in his countenance. This condition is usually met with only early and in plethoric and robust patients. In my experience the relief afforded in such cases by venesection has been immediate and remarkable. Should the patient have passed into a dull or comatose condition with the first brunt of the attack, imminent danger is clearly present. Here successful treatment depends upon ridding the system as speedily as possible of the poisonous matters circulating in the blood and overwhelming the central nervous system, and free bleeding is the remedy par excellence.

In another and much larger class of cases the patient successfully withstands the first onslaughts of the disease, but after a few days shows the indubitable signs of a profound toxemia, in a pulse which gradually increases in frequency while it loses in sustained force; in a high temperature; in restlessness and delirium; in salowness or duskiness of the surface, and these cases de-

mand not only venesection, but a cleansing of the blood as well. If blood is simply abstracted from the general circulation, the serum is quickly replaced by the absorption of fluids from the soft tissues. At this stage of the disease, however, these fluids are loaded with toxins and leucomains and bleeding alone may fail in its object as a blood-purifier. But if, in addition to venesection there is introduced into the circulation a bland and non-toxic fluid, equivalent in quantity to that withdrawn, we not only remove a great and oppressive quantity of offending material, but we dilute that which remains behind.

The method of procedure is of importance. My own practice is as follows: Venesection, to the extent of removing from four to sixteen or twenty ounces of blood, is done. If the symptoms of intoxication are profound, or if it is clearly evident that the patient will, and does, bear well the loss of blood, the bleeding should be a free one. If, on the contrary, opposite conditions prevail, the amount of blood withdrawn should be small. Indeed, in some of these cases, with profuse perspiration, free excretion of urine or, perhaps, diarrhea, bleeding may be omitted.

Simultaneously with the venesection, or immediately before or after, a solution, in distilled water, of chlorid of sodium, .7 per cent., chlorid of potassium, .23 per cent. and chlorid of calcium, .03 per cent., is injected, subcutaneously, in quantity approximating that of the blood withdrawn. Often four or six ounces may be injected later, and repeated at intervals, according to the effects produced. The injections are multiple and are made with a large-bore needle, preferably by gravity, into the subcutaneous tissues of the chest. The fluid is warmed, and ordinary precautions are taken. In some cases high enemata of the saline solution may be substituted for the subcutaneous injections, and, when well borne and retained, with equally good results.

If this method is followed as detailed it is quite free from danger. I have employed it in a number of cases and have seen absolutely no undesirable results—no chill; no rapid rise nor profound fall of temperature; no restlessness nor excitement; no collapse. On the contrary there has usually followed a gentle or profuse, but warm, perspiration; a free action of the kidneys; a clearing of the intellect and an abatement of cerebral excitement; a lessening of dyspnea; an improvement of the circulation. Such has been my experience when these measures have been resorted to in the early stages of the late toxemia, but if they have been delayed until evidences of approaching death were manifest the effects have been negative. In the one case the results of treatment have been satisfactory, and a fair proportion of patients have recovered; in the other they have, with this, as under every other plan of management with which I am acquainted, uniformly died.

In parenthesis: From first to last in pneumonia the vasomotor system, as reflected in the state of the capillaries, must be given assiduous attention. Failure in this direction, with capillary paresis, should be anticipated and met with efficient doses of digitalis and strychnia, and an occasional, carefully gauged, dose of morphia.

In conclusion: In spite of the fact that the ordinary management of this affection, in times past—recent as well as remote—has been, on the whole, signally unsatisfactory, and that that in vogue today is scarcely a promise of the advances of tomorrow, I believe that the immediate future will demonstrate pneumonia to be, certainly, a preventable and, largely, a curable disease; and that, in this field, the morning light of the 20th

century will see every reasonable hope of medical optimism abundantly realized.

4571 Lake Avenue.

[The series of papers on Pneumonia will be completed next week, when discussion will follow.]

THE BLOOD IN PNEUMONIA.*

BY ALFRED STENGEL, M.D.
PHILADELPHIA.

In discussing this aspect of the question before the Section I shall address myself only to the clinical examinations of the blood possible to the general practitioner. The bacteriologist has been able to isolate the pneumococcus from the blood of pneumonic cases, especially such as are complicated by secondary infectious foci; but this can only be accomplished by skilled investigators and in clinical laboratories. Similarly, the determination of the amount of fibrin in the blood is a matter that must be left to proficient chemists. The French have taught that the quantity of fibrin may be determined by a study of the reticulum formed under a cover-glass. This teaching is certainly very far from accurate. Even if the method were reliable, the quantity of fibrin in the blood is of little practical importance. The recent studies of Pfeiffer and others have shown that there is a notably increased amount of fibrin in the blood in leucocytosis, but there are many causes of leucocytosis and there is nothing peculiar to that of pneumonia, as far as its influence on fibrin is concerned. We are limited then in our study of the blood of pneumonia to the ordinary clinical examinations.

The points of importance that have been recognized by writers and investigators are these: In croupous pneumonia and in bronchopneumonia there is usually leucocytosis. This varies in degree and in duration. When the disease subsides, the leucocytes return to the normal number more or less quickly. There is rarely a critical decline in the leucocyte count comparable to that in temperature, further it is known that the leucocytosis is of the active polymorphous variety of Ehrlich, that is the actively ameboid corpuscles are increased more than the other forms—in other words, the leucocytosis is a chemotactic one. The eosinophilous cells are usually greatly reduced in numbers and some have claimed that they are absent. Finally, there is an undoubted relationship between the leucocyte count and prognosis, cases in which the number of white cells is normal or subnormal usually terminating fatally.

These facts have all been established, and in the main my observations tend to confirm each one of them. Going back somewhat to the consideration of the nature of leucocytosis, I may state with positiveness that this condition, at least when of the forms described in pneumonia, is the result of chemotactic influences. The toxic substances elaborated by the pneumococcus are positively chemotactic and attract to the circulation the ameboid polymorphous corpuscles. This, however, does not express all of the conditions, else there would probably be leucocytosis in every case. The additional element is the reaction of the tissues themselves to the irritant influence of toxic agents. I can not now go into the matter of the pathogenesis of leucocytosis at length, but suffice it to say that experimenters have been able to demonstrate that varying systemic conditions and varying doses of toxins, such as that of the bacillus pyocyaneus, occasion different grades of leucocytosis.

As a matter of practical experience, it has been found that when the systemic condition is bad, and the dose of intoxications over-powering, leucocytosis does not occur. This is an all but uniform relation; but that it is not universal appears from such cases as one under my observation in which a man of 34 years of age, with pneumonia of the left base, made a speedy recovery, with crisis on the eighth day, though his leucocyte count was only 6000. It is possible, of course, that in such instances, the absence of leucocytosis was due to mildness of the systemic intoxication, rather than to the general condition. It must not be forgotten, however, that the leucocytosis may be directly advantageous.

The opinion of bacteriologists, even in Germany, is moving in the direction of Metchnikoff's theory, and it is not improbable that the leucocytosis of pneumonia is a conservative process. Some color is lent to this view by the results obtained by the induction of artificial abscesses and leucocytosis in the treatment of pneumonia. This treatment, suggested by Fochier and first practiced by Lepine, consists in producing local suppuration by injection of turpentin. There results a leucocytosis that may have some connection with the favorable results of the treatment. In one case in which I employed it on account of delayed resolution, the good result was apparently due directly to this treatment. This result, however, might be due to the local relief afforded by abstraction of large numbers of leucocytes from the lungs rather than to phagocytic influence.

I must, however, return to the practical clinical observations in pneumonia. It has been found, as I have stated, that leucocytosis is usually an indication of an unfavorable outcome. The reverse, however, can not be asserted. I have repeatedly seen death occur in pneumonia, particularly in children, when there was enormous leucocytosis. One case in an adult in whom there were 30,000 leucocytes per c.mm. and 98.5 per cent. of polymorphous leucocytes, and another in a child in whom I found 80,000 white cells, may be cited.

As to the differential count, little can be said in addition to what has been said. The leucocytosis is simply of the ordinary inflammatory type. In some cases, I have found a considerable proportion of eosinophilous cells, but in the great majority these forms are reduced in number.

I have not spoken of the attempts to produce an anti-pneumococcal serum, because this subject is after all largely in the experimental stage, and no practically useful results have as yet been obtained.

[The series of papers on pneumonia will be completed next week, when discussion will follow.]

PNEUMONIA OF THE AGED.*

BY ROBERT H. BABCOCK, M.D.
CHICAGO.

This paper is presented with no expectation of its offering anything new, but because the importance of the subject should lend it interest. This importance arises from the fact that pneumonia is far more prevalent among old people than is generally supposed, while the mortality for which it is responsible is so great that in the language of William Osler, "pneumonia may be said to be the natural end of old people in this country." Moreover, the phraseology of the title "pneumonia of the aged" rather than "in the aged" was

*Presented to the Section on Practice of Medicine, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

*Presented to the Section on Practice of Medicine at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

chosen because of my conviction that the form which so mercilessly strikes down those already enfeebled by senility is due to the pneumococcus and not to an extension of bronchitis. We have been so accustomed to think of the intimate association of old age and bronchitis in the causation of catarrhal pneumonia that I fear the statement in the foregoing sentence will impress many as extreme. For years my conception of the pathology of the affection under consideration was dominated by the statements of earlier writers, that bronchopneumonia is likely to attack either extreme of life as the result of extension of bronchitis.

I do not wish to ignore the occurrence, nay, the frequency, of bronchopneumonia in the aged. I would only insist that when it occurs it is caused by pneumococcus or other infection and should not be regarded as an extension of an already existing bronchitis. Nevertheless, it is my conviction that the pneumonia excited by the pneumococcus is lobar rather than lobular, and that a failure to clinically distinguish these two forms may readily occur because the lobar pneumonia is not frank and typical in its manifestations. It is attended with profound exhaustion and debility, and in other respects displays a symptomatology not unlike that of the lobular form. Moreover, its physical signs are so often obscured by an associated bronchitis as to make it still more closely resemble a catarrhal inflammation. Finally confusion of one with the other may be favored in those cases in which bronchitis precedes, indeed, prepares the soil for the development of the lobar pneumonia. In a word, although the decrepitude of old age predisposes to bronchopneumonia, nevertheless, the form that chiefly attacks aged persons the same as hearty young adults is lobar.

Its prevalence is well shown in the statistics collected and published by E. F. Wells¹ as follows: Of 12,147 cases in 1889, from fourteen different authors, 11 per cent. occurred in persons over 60. In proportion to other diseases in persons over 60, 29.2 per cent. were cases of pneumonia. Per 1000 of population 10.36 per cent. of persons died of pneumonia, whereas of all ages together below 60 only 8.38 per cent. died of this disease. A further study of the figures collected by Wells shows that the mortality from pneumonia in old age exceeds that of any other. Of the authors thus tabulated the range of mortality is from 10 to 80 per cent., some being manifestly too low as others are too high. Wells himself gives it as his opinion that the death-rate is probably from 60 to 75 per cent. This is truly awful, and when one considers also the very great prevalence of this malady among the senile, it is obvious how just is Osler's statement that pneumonia is the special enemy of the aged.

These considerations emphasize the importance of an early recognition and prompt treatment of this disease in the old. The prime essential in its diagnosis is the remembrance of the fact stated by most authors that senile pneumonia is often latent and comes on insidiously. It may be ushered in by a chill or ill-defined chilly sensations, a chilliness creeping up the back, but often these sensations are too indefinite to attract attention. Sometimes there is nothing more than coldness of the extremities and nose, which we all know is a common experience on the part of old people with feeble circulation. Likewise pronounced rigors may or may not be present, or there might be a slight shivering, or even this last may escape attention. In short, the onset of

the disease may be declared by nothing more marked than a feeling of malaise or unusual lassitude, in consequence of which the patient takes to the bed. Such was the declaration of one case seen by me recently in a lady of 78. Pain is also a very variable symptom, as to seat, character and intensity. In some persons it may be absent altogether; in others it may be a quite characteristic cutting pain in the affected side; by some this may be complained of in regions below the diaphragm—in the epigastrium or hypochondrium—while not infrequently aching pains "in the bones" may be felt in the back and legs, with stiffness of the joints. Similarly there may be all possible gradations in the severity of these diverse pains, from mildness to a degree of almost unbearable severity causing the patient to groan or even cry out. The patient mentioned above declared she suffered no pain at all, while in another lady, 77 years of age, the disease was ushered in by mental and physical torpor, a feeling of general coldness and increasing pain throughout the body. Her headache, backache and aching of the lower extremities finally grew so intense that she sought her bed. At no time, however, did she complain of a defined pain in her chest, although a few days subsequently she spoke of it hurting her to cough. Yet in still a third old lady of 78 years, seen about that same time and in whom pneumonia was much more typical in both signs and symptoms, there was considerable pain in the affected side.

Like the other symptoms, cough is subject to considerable diversity in both frequency and severity. It may be so slight and infrequent as to hardly attract attention. Indeed a troublesome cough of the initial bronchitis may become almost suppressed upon the occurrence of the pneumonia.

On the other hand it may be both frequent and severe, or it may be violent but infrequent, being quite paroxysmal in character. In the first patient I have mentioned, the cough was sufficiently troublesome to require occasional doses of codein, while in the second it was also quite frequent. In a fourth old lady of 87 years, who succumbed, the cough was almost incessant for several nights, and did much to wear out her strength.

These four cases also illustrate the differences in regard to the sputum. In the last this was abundant, mucoserous, so tenacious and stringy that the patient often had to take it from her mouth with her fingers. In the third case expectoration, while not copious, was yet rusty; while in the other two, sputum was scanty and somewhat frothy, with sticky pellets. I recall an old man who died in my care years ago, who never had any expectoration. Regarding the sputum it is well to remember that it may be entirely wanting in the pneumonia of the aged, and even when present is most often not rusty.

Dyspnea is another symptom which may be said to be notable chiefly for its absence, or if present at all is insignificant. It was not noticed in any of the four old ladies I have selected as typifying the features of senile pneumonia. The respirations were accelerated, ranging from 28 to 32 and were shallow. In only one case, that with rusty sputum, did they appear hurried to casual inspection.

In respect, therefore, to the trifling respiratory embarrassment manifested in the course of senile pneumonia, these four patients illustrated well the general rule.

I believe it is a fact that persons of feeble vitality exhibit but slight febrile reaction to those affections

¹Jour. A. M. A., June 22, 1889.

characterized by fever. In my experience, old people with pneumonia rarely show much elevation of body temperature, except perhaps at the outset. And yet, Grissolle says that of all acute affections attacking the old, pneumonia produces the highest temperature. Some fever is always present, probably; but it frequently is so slight and the surface of the body, particularly those parts exposed to the air, feels so cool to the hand that unless the physician make thermometric observations, he is likely to be deceived into thinking the patient has no fever. In my old lady with the most nearly classic symptoms of pneumonia the temperature averaged between 101 and 102 F., while in the others it ranged not far from 100F. In No. 2 it fluctuated considerably and often quite abruptly, mounting a few times to 102 F., or more, and then falling to its previously low mark. The practitioner, therefore, should not be lured by such low temperatures into the belief that a pneumonia has not yet set in. It will be the exception when his aged pneumonia patient manifests a febrile range of 103 F.

The heart of the old, even when adequate to all demands of health, quickly shows weakness under conditions of disease or accident. It is not strange, therefore, if when pneumonia, which often overpowers the heart of the young and robust, attacks the aged, the pulse should denote cardiac feebleness. Of course, this will differ in degree in individual cases, being determined no doubt by the intensity of the toxemia as much as, or perhaps even more than, by the condition of the heart muscle. In my experience it is not so likely to be the acceleration of the pulse that will arrest attention, as it is its irregularity in force, perchance intermittence, and its want of strength. Its rate may vary considerably in different cases and even in the same case from time to time, but it will always show more or less weakness. In all cases, even if cardiac asthenia is not striking, it is well to remember that the senile heart is apt to give out suddenly and unexpectedly.

General prostration is also a noticeable feature of this disease in the old. It is very common for the patient to complain of feeling tired and weak, even when still capable of putting forth considerable exertion. The old lady of 87 whom I saw in consultation in a distant Michigan town, insisted on getting out of bed to use the night stool, although she spoke repeatedly of her weakness and fatigue. The prostration, so pronounced a feature of this class of cases, is undoubtedly an expression of the toxic action of the specific infection on the nervous system.

Cerebral disturbances, such as low, muttering delirium, may be observed, but in the cases seen by me this past winter the mind remained unaffected.

Anorexia was present in all, but in the old, desire for food, usually slight at all times, is readily lost altogether. In two there was more or less gastric uneasiness and in the patient of 87 vomiting was very distressing for the first few days. Such disturbance, however, is rather to be expected than otherwise; and the same remark can be made regarding the changes in the urine. They are incident to the pneumonia in part and also in part to the age. It should always be remembered that the senile are particularly prone to renal inadequacy, and therefore it is the kidneys and the heart that should be closely watched in this affection of the aged. Important as this is in pneumonia in all ages, it is especially important in old people.

From the preceding rather cursory description of its symptomatology, it is plain that pneumonia in the aged is often very unlike the same malady in healthy

young adults. Indeed it is so atypical in the large majority of instances that one might not inaccurately say that pneumonia in the old displays a type peculiar to itself and quite distinctive. In fact, my experience leads me to agree with the great French clinician, Grissolle, who has said in effect that pneumonia is so prevalent among the aged that, although it is often latent, and distinctive physical signs are wanting, the symptoms alone of chill, fever and prostration, unless due to some other very obvious cause, will warrant a diagnosis of pneumonia.

Although the disease may and generally does terminate by crisis, yet this is likely not to be so striking as in the sthenic type of the affection. If pyrexia has been low, the critical defervescence may be readily overlooked and is quite likely to be if the temperature has been remittent or has not been recorded with frequency and regularity. The profuseness of perspiration and the relief from pain will be commensurate with the previous intensity of the symptoms.

If one depends for diagnosis on the discovery of the usual physical signs of pneumonia, he will often find himself left in the lurch. In but one of my four patients so frequently alluded to was dulness over the greater part of a lobe, with bronchial breathing and fine moist râles, crepitant and subcrepitant, discovered. In the others a small circumscribed patch of solidified lung at one or the other base behind was recognized, on firm pressure and deep percussion, but a sense of increased resistance and impaired resonance rather than by distinct dulness. This was confirmed by the recognition of bronchial respiration and pectoriloquy over the suspected area. Careful comparison of the two sides is always advisable and generally necessary. In one instance crepitant râles were detected; in another no râles, while in the others the extensive bronchitis obscured the breath-sounds and crepitant râles except over a very limited patch where there were also impaired resonance and bronchial breathing. In a word, one may consider himself most fortunate if he derive any definite information or assistance from the examination of the chest. Reliance must be placed often on the history, the symptoms, and, if a little sputum can be obtained, on its tenacity and the presence therein of the specific diplococcus.

The gravity of the prognosis in all cases is sufficiently indicated by the high death-rate. But to prognosticate correctly in individual instances will often require ripe judgment and great experience. Aside from complications and the condition of the heart, the importance of which is too well known to make a detailed statement necessary here, it is the degree of toxemia, shown by delirium, cardiac feebleness and general exhaustion, also the patient's ability to take food, on which a prediction should be based. Profound prostration coming on early and increasing in spite of generous stimulation is of evil import since it is an indication of the effect of the toxins on the nerve-centers. If the patient can not take and assimilate sufficient nourishment the case is hopeless from the start. In a word, the more adynamic the type of the disease, the worse the prospect of recovery. How much reliance can be placed on leucocytosis or on different degrees of the same has not yet been determined. Cases in which this has been very marked have yet proved fatal.

Time forbids my discussion of the treatment *in extenso*. I will only emphasize four points:

1. It is my conviction that aged pneumonia patients bear well and require large doses of strychnin.

2. Stimulants, as alcohol, in small or moderate doses, and ammonia in frequently repeated doses are usually highly beneficial.

3. As little medicine as will meet the indications should be given, for fear of upsetting the stomach and thereby destroying what few chances the patients have at the best.

4. Because of the tendency to renal insufficiency, the nourishment should be largely fluid, and nothing is so suitable as milk and properly prepared beef juice.

[The series of papers on Pneumonia will be completed next week, when discussion will follow.]

PNEUMONIA.

ITS COMPLICATIONS AND SEQUELAE*

BY R. B. PREHLE, M.D.

CHICAGO.

The frequency with which pneumonia is associated with inflammatory processes in certain other organs, notably the meninges and the endocardium, has been known to physicians almost since the beginning of medicine, and while some suggested that there must be some relation closer than merely accidental between them, this could not be proven until the discovery of the active causal agent by Fraenkel, Weichselbaum, Talamon, Sternberg and others. This discovery has not, however, solved all the problems, and there are to-day many complications for which we are forced to adopt explanations which, as Jurgensen says, explained x by y . The proposed division of the complications into three groups—mechanical, infectious and toxic—is not to be understood as final or exclusive, for certain complications placed by me in one group would be placed equally well by another in another group. For example, I have placed the cardiac dilatation in the mechanical group, believing that the obstruction to the flow of blood through the lungs is the main factor in the causation of the cardiac dilatation and insufficiency, but there can be no doubt that myocardial degeneration due to the action of toxins is also an important element, and indeed is regarded by some as the main element. The renal changes, also, can be matters of dispute, for it is by no means certain whether they are exclusively infectious, or toxic, or what is more likely, both.

The first complication which I will mention, while not common, causes such a marked change from the physical signs common to pneumonia that it is of more than ordinary interest, i. e., the plugging of the large bronchi by fibrinous exudate. So far as etiology and pathology are concerned, these cases do not differ from an ordinary case, and there is, in my opinion, no justification for the effort of Grancher and Faisan and other French authors to make it a morbid entity. From theoretical grounds it is easy to understand what effect this filling of the bronchi would have upon the physical signs. Palpation would show the absence of the vocal fremitus; percussion would yield the intense dullness and resistance which comes from solid organs; auscultation sounds. In a word, in place of the signs of pneumonia would show an absence of the respiratory and voice we would find those of a pleural effusion. These are indeed the physical signs which these cases of massive pneumonia or splenopneumonia present. There are certain points about them which usually lead to a suspicion of their true nature; the mode of onset with a well-

marked chill and rise of temperature is that of a pneumonia rather than of a pleurisy. The dyspnea and cyanosis are more marked than ordinarily seen with pleurisy. There is a more or less abundant sticky expectorate. Closer attention to the physical signs will show differences from those ordinarily found in pleurisy. The pressure symptoms are practically always absent. There is no displacement of the heart or liver. The sternal deviation described by Pietres as a sign of pleurisy with effusion is wanting; Traube's half-moon space, when the process is left-sided. The vocal fremitus, completely absent over the lower portion of the dullness, becomes gradually more manifest as one passes upward, and does not show the sudden increase in intensity so often seen with pleural effusions. These numerous points strongly suggest the presence of a pneumonia rather than a pleurisy, but they do no more than suggest. Exploratory puncture is the only way to remove the doubt. Such cases as these are considerably more common in the male than in the female; 24 to 3 in the 27 cases collected by Queyrat. They are also more common on the left than on the right; 23 left to 4 right. Their course does not differ from that of the ordinary pneumonia, except that the evolution is somewhat slower, running from eight to ten days, and the resolution is usually somewhat delayed; recovery is the rule; 24 in 27 cases. The two following cases well illustrate the points of likeness and difference between this condition and pleurisy, and also the possibility of mistaking this condition for pericarditis and effusion:

CASE 1.—C. H., male, 37 years of age, a laborer, moderate alcoholic, had pneumonia when very young. Three days ago he had a chill, followed by pain in the right chest, labored breathing, fever and loss of appetite. He coughs slightly, but raises nothing.

Examination shows a strong well-nourished man, markedly cyanotic with icterus. He lies on the right side; is suffering from marked dyspnea; has occasional spasmodic cough, without expectoration. His chest is well developed; the right side is fuller than the left and shows less excussion. Percussion on right side shows area of hyper-resonance above the third rib anteriorly; below this intense dullness and resistance; the same posteriorly. Percussion of the left lung unchanged; vocal fremitus lost over the right side, retained over the left. Auscultation shows entire absence of breath and voice-sounds on the right side. The heart is normal in size, position and sounds; the abdomen negative; liver and spleen not palpable; nervous system negative. The urine is high-colored, sp. gr. 1030, and contains no albumin, but shows many granular casts. Pulse is 106; temperature 101.2; respirations 56. The pulse ranged from 156 to 152; the temperature from 101.2 to 105; the respirations from 40 to 64, for forty-eight hours, until death.

We have here the common history for the onset of pneumonia, but had the physical signs of a large pleural effusion, minus the usual pressure effects upon the heart and liver. The only physical signs which could be interpreted as due to pressure were the fullness of the right side of the chest, and the hyper-resonance anteriorly and above. The dyspnea and cyanosis were extraordinary, even for an effusion reaching the third rib. Exploratory puncture yielded no fluid.

Diagnosis, massive pneumonia.

An autopsy, by Dr. Hektoen, revealed the right pleural cavity obliterated by old adhesions; the right lung solid, weighing 2100 grams, with grayish granular surface; many fibrous casts in the bronchi. The left pleural cavity and lung were normal, also the heart and pericardium. The kidneys weighed 375 grams and were smooth; capsule not adherent; grayish red color; cut surface vascular, with distinct cortical markings. Examination otherwise was negative.

The autopsy thus confirms the clinical diagnosis. The plugging of the bronchi sufficiently explains the marked variation from the usual physical signs of pneumonia.

CASE 2.—A male, Italian, about 22 years of age; present illness began suddenly with a chill followed by fever, cough and pain in the chest.

Examination shows an area of absolute dullness, leaving the liver dullness and passing obliquely upward and crossing the

*Presented to the Section on Practice of Medicine, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

sternum at the third rib, then passing in a slightly curved line downward and outward an inch and a half to the left of the easily visible apex-beat in the fifth intercostal space, and well within the nipple line. This dullness was very intense and the resistance great. No breath or voice-sounds were heard over this area. Heart-sounds were regular but feeble; no friction.

The diagnosis of pericarditis with effusion was made, while at the same time it was noted that the dullness crossed the sternum at a very low level for pericardial effusion, reaching the right nipple line and passing an inch and a half beyond the apex.

The patient died three hours after entrance, and the autopsy showed an intact pericardium. The dullness was due to two pneumonic areas, one right and one left, bordering on the heart. The afferent bronchi to these foci were plugged. A correct diagnosis might perhaps have been made had the patient been longer under observation, but with the conditions such as they were, it is evident that the massive pneumonia may simulate a pericarditis as well as a pleurisy.

The cardiac complications belonging in this group are common, and, in view of Jurgensen's statement that the immediate cause of the majority of deaths in pneumonia is cardiac insufficiency, must be regarded as important. The explanation of the frequency of the cardiac dilatation is plain. The presence of the infiltration of the lungs greatly increases the work of the heart, and at the same time, by decreasing the supply of oxygen, impairs the nutrition of the heart muscle. It increases the demand and lessens the supply. This is, I believe, the *modus operandi* in most cases, but were it the only *modus* the cardiac insufficiency should be directly proportional to the extent of the pneumonic process, providing the heart was primarily intact. Exceptionally, however, there is a manifest disproportion between the intensity of the cardiac symptoms and the extent of the pneumonia. In these cases it is necessary to assume that some third influence is at work, and doubtless this is the intoxication of the organism as a whole, and the heart muscle in particular, with the specific toxins of the pneumococcus. In the days previous to the development of bacteriology the cardiac insufficiency was referred to the action of the fever upon the heart muscle, although it was known then even that there was no direct relation between the degree of the temperature and the danger of the heart failure. They noted, as we do today, the often marked disproportion between the general and local symptoms.

The symptoms pointing to threatening cardiac failure are in general such as occur under like circumstances, irrespective of the cause. The pulse-rate is of some significance. In 100 cases I found the average maximum pulse-rate to be 134; the average for 30 fatal cases was 144; the average for 70 non-fatal cases was 131, but 8 of these passed the average for the fatal cases. Griesinger states that more than one-third of the cases where the pulse-rate reaches 120 die. Of 73 cases in which the pulse passed this point, 30, that is 41 per cent., died. The highest pulse-rate reached by a case which recovered was 160, with a pneumonia on the left upper lobe. Such figures as these have only a very general value, for the individual characteristics of the patient influence the pulse-rate to a marked degree. A pulse of 160 means much less in a nervous individual than in one who is a phlegmatic; much less in a small individual than in a large.

Irregularity of the pulse previous to the crisis should always cause anxiety, suggesting as it does an antecedent or developing myocarditis, or other cardiac complications. Certain forms of arrhythmia, as the pulsus paradoxus, are of no significance when accompanying

upper-lobe pneumonia. Here, too, we sometimes find asymmetry of the radial pulses. Bradycardia even to 40 after the crisis is not uncommon, and should excite no especial anxiety.

Examination of the heart often shows changes which, according to their degree and character, are to be regarded as symptoms or complications. A moderate increase in the cardiac dullness to the right can scarcely be regarded as a complication unless accompanied by other symptoms pointing toward cardiac insufficiency. We must mention that Aufrecht draws attention to the fact that in left-sided pneumonias the heart may be displaced to the right, thus simulating a dilatation of the heart.

Certain auscultatory changes are so common that their absence should arouse more attention than their presence. Accentuation of the second pulmonary tone is frequent and is the expression of the increased blood-pressure in the pulmonary system. The degree of the accentuation is dependent upon so many factors, especially upon the conditions of conductivity, that no inference can be drawn from the intensity of the tone alone. If, however, during the course of the pneumonia the accentuation of the second tone decreases markedly without any improvement in the condition of the lung, it must be regarded as a sign of threatening failure of the right heart.

Systolic murmurs frequently appear over the heart, and their interpretation requires considerable care, and often an absolute differentiation between organic and accidental murmurs can be made only after the lapse of days or weeks. The difficulty lies in the fact that the same patient will present an increase of the heart dullness to the right, an accentuation of the second pulmonary tone, and a systolic murmur, i. e., all the cardinal symptoms of the mitral insufficiency appear in the course of the disease, frequently accompanied by endocarditis. We must remember that this combination of findings means less in the pneumonias than in the other febrile diseases.

Fraentzel has drawn attention to the appearance of the gallop rhythm over the heart, and here as elsewhere it is a sign of impending heart failure. Fraentzel has noted it in 25 cases of pneumonia, 4 times in conjunction with other disturbing symptoms just before the crisis; 7 times during the day after the crisis with general collapse. In other cases it was either the first or an early symptom of cardiac weakness at the height of the disease. Among the last mentioned cases only one lived for two days after the gallop rhythm was first heard.

ICTERUS.

The frequency with which icterus complicates pneumonia varies greatly according to the statements of the various authors. This variation is due in part to the difference in the epidemics recorded, and in part to the attention paid to the jaundice. In many cases the jaundice is so slight and evidently of so little significance that it is not noted. There can also be no doubt of the fact that jaundice occurs more frequently in some epidemics than in others. In the table given by Jurgensen the figures vary over an astonishing range; 0.6 per cent. for Vienna; 0.9 per cent. for Stockholm, and 28.3 per cent. for Basel. In one list of cases from Basel the icterus was found in 5.5 per cent. of the cases, and in a later list, in which especial attention was paid to the icterus, the above figure of 28.3 per cent. was found. Aufrecht found 15 cases of icterus in 1501 cases of pneumonia, that is, 1 per cent. From personal experience I would say that 28 per cent. is much more nearly cor-

rect than 1 per cent., if one includes all patients who show conjunctival icterus.

The pathogenesis of the complicating icterus has been, and still is, a matter of dispute, and probably there are several ways in which the icterus develops. Some of the proposed theories can be quite readily excluded. Venous stasis, with resultant compression of the fine bile capillaries, has been suggested, but this is liable to the objection that jaundice results in this way only when the venous stasis is very marked, and it should be accompanied by the other results of the same cause. The jaundice seen in pneumonia usually occurs without any signs of venous stasis elsewhere, and the autopsies on icteric pneumonics do not show venous stasis.

Retention of bile consequent upon lessened movement of the diaphragm is another suggestion, but were this so, jaundice should occur in other conditions of lessened respiratory movement, such as pleurisy, with equal frequency. Jaundice ought also to be more common in pneumonias of the right lower lobe, while it is not proportionately so. Pétrow studied 67 cases of right-sided pneumonia with attention to this point, and found only 6 were icteric, and in all of these there was some lesion of the bile-duct.

Formation of the bile pigments from the red blood-corpuscles broken down during the absorption of the exudate is another suggestion, but may be excluded by the fact that the icterus occurs usually before the absorption of the exudate.

Banti, basing his opinion upon 15 cases, studied in an epidemic of pneumonia in Florence, believes that the diplococcus of pneumonia has a peculiar hemolytic power, and that the icterus is the result of this hemolytic power, and that the icterus is the result of this hemolysis. More than one-half of these cases died, and at the autopsies the bile-ducts were patent, the bile thick, and the feces deeply stained. Cultures from these cases produced hemoglobinuria in animals, while cultures from cases without icterus did not.

Lastly, the icterus has been referred to a catarrh of the bile-ducts or duodenum, or both, and this doubtless is the cause of many cases. Pétrow, in 1897, reports the result of autopsies in 13 cases of pneumonia with jaundice, and in all cases found a lesion of the biliary duct—in 8 cases duodenitis, in 2 cases accompanied by hypertrophic cirrhosis, in 5 cases an angiolitis. Gilbert and Grénet report three autopsies with inflammation of the gall-ducts, in each case due to the infection of the ducts with the bacillus coli communis.

From this review it would seem that the icterus complicating pneumonia may be due to an obstructing inflammation of the bile-ducts, or it may be the so-called hematogenous or toxic jaundice, remembering always that the experiments of Naunyn and Minkowsky have shown that this form of jaundice is only apparently hematogenous, and that all are really hepatogenous. It seems probable that these cases also are really cases of obstructive jaundice, but here the obstruction is in an infinite number of small ducts instead of one or a few large ones. We can not agree with Pétrow, who considers the jaundice as an accidental complication, the frequency with which it occurs being sufficient to exclude this. The experiments of Banti and the well-known clinical fact that jaundice is more common in some epidemics than in others suggests differences in the virulence of the infective agent.

The effect of jaundice upon the clinical source of the pneumonia is dependent in part upon the intensity and in part on the immediate cause of the jaundice. In

cases of duodenitis and localized angiolitis we need consider only the intensity, but where there is reason to believe that the jaundice is due to the character of the infection the intensity is of less importance. The effect upon the mortality is variously estimated by various authors. Traube regarded it as a very dangerous complication. Mosler puts the mortality at 73 per cent., Fisser at 20 per cent., and Banti lost more than one-half of 15 cases. Others, as Huss and Lebert, say that the jaundice has no injurious influence upon the course of the pneumonia. The effect on the mortality is determined by the intensity and the cause.

Jaundice affects the course of the pneumonia by the influence which it exerts upon the nervous system, the heart, the gastro-intestinal tract and the kidneys. It affects especially the sensorium, causing a stupor which appears very early; lessens the sensibility and excites delirium. Traube notes that these patients are very often entirely insensible to the pain caused by the accompanying pleurisy. The effect on the heart may be still more serious. French authors have drawn attention to the fact that jaundice, irrespective of its cause, may excite considerable dilatation of the right ventricle, and I have personally been able to repeatedly confirm this observation. It is at once manifest how dangerous a jaundice may be when added to a disease which, like pneumonia, usually causes some dilatation of the right heart.

The gastro-intestinal symptoms are nausea, vomiting, diarrhea, and meteorism. Any or even all of these may, however, be absent. Meteorism is said by Traube to be of unfavorable prognostic significance. The color of the stools is important as throwing some light upon the site of the obstruction to the outflow of bile. They are clay-colored when the obstruction is at the duodenum, but may be quite dark, as in Banti's cases, when the obstruction is at the smaller ducts. The kidneys may be affected in such a way that albuminuria or even nephritis results. Another interesting manifestation of the jaundice sometimes seen is green-colored sputum.

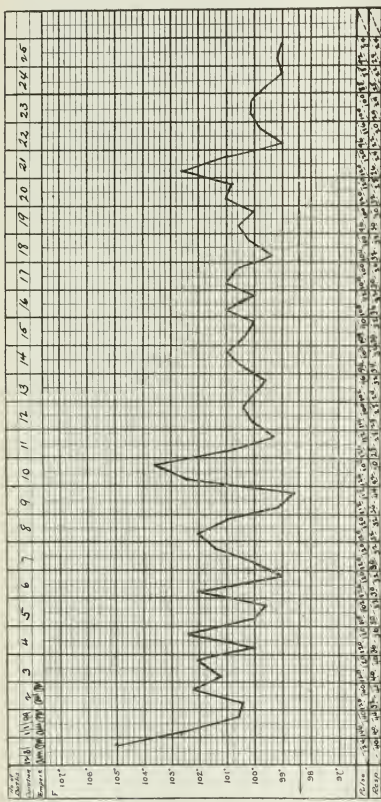
In the second, or infectious, group are placed those complications due to the presence of the pneumococcus in organs other than the lungs. The infective agent reaches these organs in a variety of ways; by the blood or lymph vessels, or by extension along ducts or by direct extension. Certain organs, as the joints and remote soft parts, are infected only by means of the blood-current. The pleura and pericardium may be infected in this way, or more often by direct extension. The meninges may be infected through the blood, by extension from the middle-ear or nasal air-spaces, or, according to Weichselbaum, by extension through the cervical lymph-channels from the mediastinum. The middle ear is oftentimes affected by extension along the Eustachian tube; the parotid gland by extension along Steno's duct. The method of extension is important, for when the extension is along the blood-channels there is usually, but by no means always, multiple secondary localization of the bacteria, while the extension by lymph-channels or ducts is a local process.

The pneumococcus has been repeatedly demonstrated in the circulating blood in cases of pneumonia without affecting the clinical symptoms of the primary disease. They are doubtless present in many cases without their presence being suspected, and inasmuch as the number of record cases is still small, no very definite statements can be made. Sello examined 48 cases by venous puncture, during life, with negative results in 26, of whom 9 died; 12 positiv results, with 10 deaths. Of the two patients who recovered, one had a pneumococcus

emphyema, and one a pyemia. These cases, with others reported, show what one would expect, that the presence of the pneumococcus in the blood makes the prognosis unfavorable and complications due to secondary localization of the pneumococcus common.

After entering the blood the pneumococcus may cause either a general infection in the shape of a septicemia or pyemia, or may localize itself in one focus, causing a meningitis, a paronychia, a panophthalmitis, and so forth. The clinical picture resulting from such infection is too manifold to permit of general description, but the following clinical cases will serve as illustrations:

CASE 3.—Mrs. N. S., a widow, aged 25 years, entered Dec. 31, 1898. She had had the measles and whooping-cough as a



Case 3.—Pneumococcus pneumonia, septicemia and other otitis media.

child; pneumonia one and two years ago, and had been feeling poorly for a week, with "a cold in the head" and loose cough. Two days before entering she had a chill lasting fifteen or twenty minutes, followed by fever. Immediately after the

chill sharp pain was felt in the right side, in the axillary region, aggravated by coughing or deep breathing; a hard, painful cough, later expectoration of white tenacious material.

Examination showed her to be poorly nourished; slender and small; mind clear; skin moist; eyes showing some exophthalmus; pupils reacting to light and accommodation; lips dry; cyanosis and icterus. Her chest was small and narrow, respirations rapid and jerky. There was friction fremitus in the right axilla; dullness over the right lower lobe posteriorly, and over the same area crepitant râles. Friction and tubular breathing. Over the left lower lobe posteriorly there were fine mucous râles. The heart was negative; pulse rapid, full and of medium tension. The liver extended two finger-lengths below the costal arch and was tender. The spleen was not palpable; urine 1020, acid, clear yellow, containing no albumin nor formed elements. Temperature, pulse and respiration were as in chart.

Diagnosis, pneumonia of the right lower lobe.

January 9, a spot of consolidation was noted in the left lower lobe, and in the left upper lobe, with a temperature of 98.7; pulse 112, and respirations, 44. Pneumococci appeared in the sputum.

January 13, an area of consolidation appeared in the right upper lobe.

January 17, cultures from the blood obtained by venous puncture showed pneumococci.

January 18, there was purulent discharge from the left ear; pneumococci in the pus. From then on gradual recovery, leaving the hospital one month after entrance.

We have here what at first seemed to be an ordinary pneumococcus pneumonia. Its course was prolonged by later transient localization in other lobes than the one primarily involved. Without there being any special reason to suspect the presence of the pneumococci in the blood, they were found easily and in large numbers, being present also in blood smears. Whether or not the complicating otitis media was due to localization from the blood or extension through the throat could not be determined, but was probably the latter.

CASE 4.—Grace K., single, entered Dec. 4, 1898. Had scarlet fever as a child; had cholera ten years ago, lasting for some months. Since then she has had trouble with her heart. She had been fairly well, until five weeks previous to entrance, when illness began with a dull pain in the fingers, thighs, and muscles generally, but not involving the joints. For a few nights after the onset she had night sweats, and when these stopped the cough began and continued with yellow mucopurulent expectorate. Has had dyspnea on lying down and on exertion; no swelling of the feet; appetite fair, but had distress after eating.

Examination showed a small, poorly nourished woman, about 25 years of age. She had slight cyanosis on lying down; no edema. Examination of the lungs showed only generally diffused moist râles. Apex-beat of the heart was external to the nipple line in the fifth interspace, first tone at apex easily palpable; presystolic thrill over the apex; second pulmonary tone palpable. There was absolute cardiac dullness to the third rib above, to and a little beyond the right border of the sternum to the apex-beat, with systolic and presystolic murmurs at apex. The first tone at the apex and the second pulmonary tone were accentuated; aortic tones pure. The liver was slightly enlarged; spleen not palpable. Urine, 1030; contained no albumin nor casts. Temperature was 101; pulse 96; respirations 32. Course of the temperature and so forth is shown in chart.

Diagnosis, acute exacerbation of an old mitral endocarditis. December 7, diffuse moist and crepitant râles over both lungs; no bronchial breathing; cough, but no expectorate.

December 12, after a normal temperature for three days, the temperature rose suddenly to 104; the pulse 120; respirations 24. Crepitant râles appeared over the right middle and lower lobe without dullness or bronchial breathing. There was bloody sputum containing pneumococci.

December 15, dullness of the right middle and part of the left lower lobe was noted, with bronchial breathing and crepitant râles; cardiac dullness increased beyond the size at entrance, with pericardial friction. Blood shows 24,541 leucocytes. Smears and cultures show pneumococci.

December 17, blood smears show pneumococci. The condition gradually improved, the temperature fell by lysis, but the pulse and respiration kept up. The lungs gradually cleared, heart condition did not change. Pneumococci found at intervals until December 31, when the blood examination

left; reacted to light. There was rigidity of the neck; no paralysis; no Kernig sign. Pulse was 96; axillary temperature 99; respirations 28. Lumbar puncture showed diplococci answering the description of the pneumococcus; extracellular.

December 2, pulse was 120; axillary temperature 100.3; respirations 48. There was coma; slight icterus; no eruption; retraction of the head and rigidity of the neck; joints as before; no paralyses. Bilateral choked disc was more marked in the left.

December 3, pulse was 120; temperature 100.3 per rectum; respirations 60. Resonance over both lower lobes was impaired; more marked in left than right; breath-sounds loud and accompanied by a few crepitant râles. The heart was not enlarged; both basal tones were pure and accentuated; pericardial friction. There was slight external strabismus; right-sided ptosis; head turned to the right; beginning herpes labialis on the right side. Left wrist was punctured, yielding a few drops of thick whitish mucopus, showing pneumococci. Blood smears show the same organism. Lumbar puncture was repeated, but no fluid obtained.

Diagnosis: Diffuse infection by the pneumococci, causing meningitis, pericarditis, and multiple arthritis. Autopsy, by Dr. Hektoen, showed a small amount of purulent fluid in the pericardium; lungs showed hypostasis below and an old healed tuberculosis in the right apex. The kidneys showed an acute degeneration; brain and cord, diffuse purulent meningitis, and multiple arthritis. Bacteriologic examination showed pneumococci in the blood, pericardium, meninges and joints.

CASE 6.—J. M., male, a patient of Dr. Billings, entered March 2, 1899. He was comatose and unable to give any account of himself.

Examination showed right eye closed; left held open; heart negative. Lungs showed dulness, with high-pitched breathing over the left lower lobe with friction. Abdomen: Liver was palpable; spleen, not. Pulse 80; temperature 102 in the axilla; respirations 22. All rose gradually till death on the sixth day.

Lumbar puncture yielded a diplococcus which by stain, culture and inoculation proved to be the diplococcus of pneumonia. Anatomical diagnosis at autopsy: Purulent cerebrospinal meningitis, acute endocarditis, pulmonary edema, cloudy swelling of the kidneys.

(To be continued.)

[This series of papers on Pneumonia will be completed next week when discussion will follow.]

ASEPSIS OF HANDS OF THE SURGEON AND SKIN OF THE PATIENT.*

BY CARL BECK, M.D.

NEW YORK CITY.

1. Ideal asepsis has become an established fact as far as all objects are concerned which stand boiling well.

2. The atmosphere has no pernicious effects on wounds, as pathogenic bacteria fortunately have a tendency to settle, so they can only come into contact with a wound when the dust in the room is immoderately stirred up. To avoid this possibility, the air in the operating-room is saturated with moisture, at least during two hours before the operation. This can be done simply by originating steam in a kettle.

3. Asepsis of the hands of the surgeon as well as of the skin of the patient is still imperfect, total destruction of the bacteria of the skin being practically impossible.

4. Asepsis must be attained principally by physical, especially mechanical, methods. Chemical processes should play but a very subordinate part.

5. The means with which asepsis should be attained must be aseptic. This refers particularly to the water used for washing, and the soap, which must have been prepared by the boiling process. If brushes are used special care has to be taken. They can only with

difficulty be rendered aseptic, thorough cleaning impeding their usefulness.

6. The surface of the human body is impregnated with many different bacterial species. Some of them adhere to the skin surface, others are imbedded in the dried cells of the epidermis. They do not need destruction, but removal. This can be done by simple mechanical means, viz., scrubbing with soap and hot water. Two kinds of soap are used for this purpose. First with linen compresses, dipped into fluid soap, which is mixed with soft sand (Stuttgart sand), the skin is energetically scrubbed for two minutes, a stream of very warm water always flowing over the surface. Then aseptized green soap is used in the same manner, for the same length of time. Particular attention is given to the folds and creases of the skin and to the subungual space. The latter requires the use of a nail-cleaner and energetic wiping with the sand-soap. Now the skin is dried with an aseptic towel and rubbed with a gauze compress, saturated with 50 per cent. alcohol for about one minute. The alcohol is used for the purpose of dissolving the fat of the skin, which shelters the bacteria; and by dissolving the shelter, the bacteria are removed at the same time. Whether washing with bichlorid of mercury is needed after these procedures is open to discussion; it will certainly not do any harm.

There is no doubt that the surface of the skin can thus be rendered absolutely aseptic by this method, as well as by a few other similar ones. But there remain still a number of bacteria imbedded in the glands of the skin—the secretions of which offer a favorable soil for their development—which cannot be removed. But they will do as little harm as the dust in the room, if cared for properly, viz.: In the incising of the skin a number of glands are naturally dissected, and the bacteria contained by them are freely exposed. The dissecting-knife also comes in intimate contact with them and must therefore be considered infected. This undeniable fact explains thoroughly the so-called supuration of the stitch-canal, as well as the bad reputation of the catgut, and many cases of infection under the supervision of the "extremely careful aseptic surgeon." It also explains supuration after most laboratory tests, carried out under "the most minute aseptic precautions."

How do we get around this salient point?

The knife used for the skin-incision must not be used for further incisions.

The wound-margins of the skin are covered with sterile napkins, with are fastened to the wound surface with small miniature forceps, so that the skin-wound is not touched at all during the subsequent manipulations.

Surgeon and assistants wear sterilized linen gloves. The surgeon changes gloves after the skin-incision is completed.

For uniting the wound-margins of the skin the subcutaneous method should be preferred. The superficial surface of the skin of the patient had been rendered aseptic beforehand by having been given a warm bath twenty-four hours before the operation, a rigid scrubbing with soap and shaving having taken place at the same time. A poultice of green soap had been applied to the skin-surface for twenty-four hours in order to secure thorough permeation of the epidermis, which is macerated to some extent by this procedure. The surface being aseptic, and the skin-glands, which contain bacteria, being *hors de combat*, it becomes evident that the only possible source of infection remaining then,

*Presented to the Section on Surgery and Anatomy, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus Ohio, June 6-9, 1898.

suffice to protect the woman, as absorption of micro-organisms or their ptomains will sometimes show itself as a putrefactive intoxication with the constitutional evidence of sepsis usual to this affection. In other words puerperal sepsis is wound fever, as the Germans call it. Primarily it is infection which takes place in an abraded or torn surface. It differs in degree with the character of the infection. It may start in the favorable medium of decomposing retained membrane, or it may be due to bacteriologic infection in the external genitalia. Therefore at first it is a local* or at least is a circumscribed process, and is at this time most amenable to treatment. If allowed to pass this stage in its development, we may meet any or all of the complicated and extremely dangerous conditions of full-fledged puerperal sepsis.

The writer has seen fit to speak of the different forms of puerperal sepsis as he has met and is constantly meeting with it. This condition follows abortion and labor at term. In the majority of cases of sepsis following abortion, early recognition will confine the operative treatment to the vagina and the uterus and necessitate simply, thorough cleansing of both cavities, including the removal of the retained decidua, and proper disinfection and packing with iodoform or some antiseptic gauze. Each year, in both hospital and private practice, I see a number of these cases, which if seen early enough usually recover.

In another class of cases following abortion, not only the uterus but the Fallopian tubes are involved. These, however, are seen at a later stage of the disease, when abdominal section and supravaginal removal of the uterus with the uterine appendages, being able to occasionally save one and sometimes both ovaries, suffice to establish a cure. Another class of cases met with after labor at full term have as their most prominent feature a large purulent collection in one or other side of the pelvis, a condition frequently described as cellulitis and abscess. To this term the writer takes exception, for I am convinced that these cases originate from sepsis carried into the Fallopian tube, and through the Fallopian tube into the pelvis, where the inflammatory exudate breaks down and forms an abscess, which is circumscribed by an adventitious membrane so closely resembling peritoneum that operators pronounce it as such, and record the case as one of abscess of the broad ligament. I have studied these cases very carefully and from an anatomic standpoint I have never been able to make them out other than cases of circumscribed peritonitis, and not suppurating cellulitis. This class of cases frequently occasions a bulging of the recto-uterine cul-de-sac so far as to make it feasible to evacuate it through an incision in the vault of the vagina. That they can be so evacuated does not disprove their true nature.

As I have referred to cleansing the uterus I will say a word about the uterine curette. On general principles this instrument is resorted to too often; on the other hand, there are conditions for the relief of which the use of it is essential. I beg to put myself on record, however, by stating that this instrument should be handled with the greatest care and gentleness. In short, it requires as delicate a manipulative skill to use the curette with safety as it does the lithotrite. In the use of either of these instruments the operator should be so deft that, through the medium of the hand manipulating the instrument, and secondarily through the instrument, he should, as it were, be able to carry on a conversation with the part being operated on, and so

be able to tell dangerous places, where it will be necessary to scarcely bring the instrument into contact with the part, while at other points a slight pressure will be necessary. I beg of you, gentlemen, to understand that I am conscious of the importance of this statement, but I feel regarding this as I do about many other operative measures about which much is said, that it is not the operation which is at fault, but the operator.

A woman, aged 26, white, married seven years, had two children, one miscarriage. Menstruation began at the age of 15. She had the usual diseases of childhood; health previous to present trouble had been fairly good; was pregnant about six weeks when present illness began, on the afternoon of March 11, 1899, with sudden sharp abdominal pain referred particularly to the pelvic region, with symptoms of shock, cold clammy skin, pale conjunctiva, weak pulse and feeble sighing respiration. I saw the patient in the evening of the same day, in consultation with my brother, Dr. H. C. Deaver, whose diagnosis was internal hemorrhage, with which I concurred. The operation the same night revealed a "belly full" of blood with a perforated uterus, the perforation being about one-half an inch in its longest diameter. Supravaginal amputation of the uterus, with removal of left tube and ovary and right tube was performed, the right ovary left *in situ*. The patient was very much depressed after the operation. Immediately following the operation 2000 c.c. of normal saline solution were given in the left basilic vein; 3.30 a. m., same night, 1800 c.c. in right basilic vein. Recovery was complete and from this on uneventful.

Another patient, aged 38, white, was seen by me in consultation with her physician, on the evening of Feb. 28, 1899. She had recently aborted and had been curetted. On the arrival of her physician, examination revealed the presence of a loop of intestine in the vagina; this was replaced and consultation called. When I saw her she had rapid pulse, high temperature, distended and rigid abdomen. Operation was performed the same night. On opening the abdomen there we found diffuse peritonitis with pus, the great omentum greatly infiltrated, blood clots in the recto-uterine cul-de-sac, a knuckle of a small bowel six inches in length, semigangrenous and devoid of mensentery. The uterus was the seat of perforation about the size of a five-cent piece. Supravaginal amputation of the uterus was done, with removal of the tubes. The involved portion of the ileum was resected and end-to-end suture with needle and thread made. The ovaries were not removed. The abdominal cavity was thoroughly irrigated and drained. Death occurred on the evening of the fourth day from peritonitis.

Sepsis following labor at term manifests itself in two ways: 1. By infection of the external genitalia, the result of bruises, tears, etc., and if recognized early and free drainage is established few lives will be lost. The practice of immediately sewing up a torn perineum, which often involves the posterior vaginal wall, if not done with the strictest cleanliness, is responsible for many of these conditions. Better leave a torn peritoneum or vagina alone than to coapt all torn parts ever so nicely, if not done with strict cleanliness, because the rents may furnish avenues of drainage sufficient to carry off the infection, which is not only added to by lack of cleanliness but is increased by the introduction of too many sutures. Not uncommonly too many sutures are used, and tied too tightly, subjecting the tissues to dangerous degrees of tension. 2. By infection of the internal genitalia which manifests itself in the shape of

septic endometritis, septic phlebitis of the uterine sinuses, and of the veins of the broad ligament; septic inflammation of the Fallopian tubes and, through fimbriated extremities, septic peritonitis. Very radical operation in infection of the internal genitalia, barring that of septic endometritis is, in the majority of instances, attended by disastrous results.

Septic endometritis, in the majority of instances, if seen early is amenable to gentle curetting, douching with a warm solution of bichlorid, 1-4000, and carbolic acid, 1-80, and packing the uterus lightly with 5 per cent. iodoform gauze, moistened with the above solution. The preparation of the field of operation is as essential here as elsewhere. The vulva and pubic region are to be shaven, and the vagina thoroughly cleansed. During the operation the external parts are bathed constantly by the bichlorid and carbolic solution, which is allowed to flow from an irrigator. The operation being completed, an antiseptic pad is adjusted. After each urination the parts are to be washed with bichlorid, etc. I think it safer to allow the patient to pass her urine than to use the catheter: 1, because I believe it bad practice to suspend the function of the bladder, and 2, the use of the catheter is too often followed by cystitis, a condition I have seen quite as troublesome to correct as the one for which the operation was done. If a catheter is used it should only be a glass or a metal instrument, for these are the only instruments that can be sterilized. It is fitting to say a word here relative to lysol as an antiseptic wash. Personally I regard it of little use compared with bichlorid and carbolic acid. In short, to use lysol I consider sending a boy on a man's errand.

To defer curetting, cleansing, etc., until the patient is constitutionally infected with perhaps a septic peritonitis is virtually locking the stable after the horse is stolen. Early recognition of the danger and the immediate institution of the only proper treatment is the *sine qua non* to a successful issue in the majority of cases. Conservative treatment is the early institution of radical measures which results in saving life, and is not waiting until the "eleventh hour" in hope that Nature, by establishing a leucocytosis or what not, will by chance accomplish a cure.

That postpuerperal sepsis manifests itself in some cases as a phlebitis of the uterine sinuses and of the veins of the broad ligaments, we must agree. In this type of the disease the constitutional symptoms are pronounced; rapid pulse, high temperature, irritable stomach, with, in some cases, a disposition to diarrhea; associated with this condition of the vessels there is endometritis, giving rise to an offensive purulent discharge, often blood-stained. Local examination shows a hot vagina, an enlarged, painful and movable uterus, which offers more or less resistance to touch, suggestive of infiltration, fulness and increased resistance in either vaginal vault indicative of a like condition of the broad ligaments; and the absence of fulness in either the recto-uterine or vesico-uterine pouch. In this condition operation promises nothing; on the contrary it may do much harm by breaking down septic thrombi, often favoring foci of inflammation, to say nothing about the risk of cerebral or ptomainic emboli.

Mrs. C., aged 35, with a history of miscarriage occurring four weeks previously, presented the symptoms of pelvic abscess following premature birth. The uterus was subdivided; a large hard mass could be detected to the left of the uterus extending from the floor of the pelvis to the abdominal wall. Diagnosis: Peritoneal uterine exudate from sepsis with abscess. Incision

through the left rectus muscles disclosed a large deposit of lymph which contained a small purulent collection. Drainage was introduced and resolution followed, with recovery.

Mrs. L., aged 32, gave a history of miscarriage. A mass was found, on vaginal examination, to the right and behind the uterus, fluctuating and very tender to touch; uterus subinvolved with a discharge from cervical canal. Diagnosis: Pelvic abscess from infection. The abscess was evacuated through the vagina by means of incision into the mass; curettement of the uterus, drainage of both the abscess cavity and of the uterine canal. Recovery was uninterrupted.

Mrs. A., aged 38, gave a history of infection occurring three weeks after labor. A mass was detected above the pubis and slightly to the left of the median line, as well as by vaginal touch. Diagnosis: Pelvic abscess following infection from uterus. An attempt was made to evacuate the collection through the vagina, by opening the recto-uterine cul-de-sac. The cul-de-sac opened, the mass was found to occupy too high a position to warrant further attempt by way of this avenue. Incision was next made along Poupart's ligament, the peritoneum exposed and pushed out of the way, the mass of lymph felt anterior to the bladder, which was opened and found to contain an abscess. The cavity was irrigated, drainage introduced and the wound allowed to close by granulation. Recovery followed.

The treatment which promises most under these circumstances is supporting: stimulants, large doses of tincture of iron, 30 grs. every three hours, quinin, grs. x. in twenty-four hours, plenty of milk and concentrated nourishment; locally vaginal and intra-uterine douching with bichlorid and carbolic solution, antiseptic pads, etc., and ice-bags are constantly applied to the lower quadrant of the abdomen. The bowels are to be opened two or three times daily, with salines. Convalescence is usually prolonged. In a percentage of these cases convalescence is interrupted by the development of foci of suppuration which, in my experience, has usually occurred in the broad ligaments, one more often than both being affected. This manifests itself as a unilateral swelling, which can be detected by vaginal, rectal and abdominal examination, and to the sense of touch presents a boggy feeling, a sense of resiliency or perhaps fluctuation. The general condition of the patient usually bespeaks the presence of pus. We find a hectic temperature, and moist skin; the tongue is usually red, but not always so; chilly sensations are complained of, or a decided chill may occur. The selection of the best avenue to evacuate the collection will depend on the point at which it is most accessible; this may be through the vagina or immediately above Poupart's ligament. It is my experience that these cases usually recover. I have seen spontaneous evacuation above Poupart's ligament take place in a number of cases followed by recovery.

The treatment, generally speaking, depends on the stage of the disease, whether it is still localized or circumscribed to the point or place of infection, or whether it is more advanced and associated with constitutional symptoms. If taken early, local treatment will, if thorough, be sufficient for a cure. If, however, it becomes advanced and the body of the uterus, or the internal genitalia be involved, we may have to meet and treat any or all of the conditions I have described here. This class of cases illustrates a point I wish to make, i. e., the early institution of so-called radical measures is true conservatism in surgery.

UTERINE FIBROIDS.*

BY THOS. FITZGIBBON, A.M., M.D.

Professor of Gynecology and Clinical Gynecology in the Wisconsin College of Physicians and Surgeons; Attending Gynecologist at St. Joseph's Hospital.
MILWAUKEE, WIS.

Fibroid tumors of the uterus originate in its muscular walls. These tumors, as we shall observe, are composed of muscle and connective tissues; hence the names myofibroma and fibromyoma, the prefix designating the more abundant tissue. Uterine tumors composed exclusively of muscular tissue rarely occur.

PATHOLOGY.

Fibroids may be classified from the position they maintain, viz: subserous, interstitial and submucous. As a rule they grow very slowly, may be single or multiple and attain various sizes from a pea to 140 lbs. "Dr. Hunter of New York removed one weighing 140 pounds, which was 55 pounds more than the woman weighed after operation."

The subserous variety develops beneath the peritoneal covering of the uterus, usually, invested by loose cellular tissue, blood-vessels of small size that connect the tumor with the capsule; and, should dense adhesions occur between the capsule and the tumor, they have been caused by inflammatory processes. Large pedunculated tumors may extend into the cul-de-sac and become adherent to the rectum and surrounding tissues, and may produce obstruction to the bowel.

The submucous variety lies just beneath the mucous membrane of the uterus, usually causing a hypertrophy or atrophy of this structure. The breadth of these tumors varies; often they are attached by a slender pedicle, but frequently by a sessile base.

The interstitial variety develops within the walls of the uterus and forms part of it; and the natural tendency of this variety is to change into one of the preceding varieties, and become pedunculated. In all varieties of fibroma the uterus is hypertrophied and the mucous membrane is in a state of inflammation. To the eye the tumor appears white or red, the latter color being due to excessive amount of muscular tissue.

Uterine fibroids may undergo various degenerations and alterations during sexual activity and after the menopause. Calcareous degeneration may occur in old women after the menopause; fatty, suppurative, cystic and malignant degeneration may also occur.

"Martin made an interesting analysis of 205 cases of uterine fibroids, fatty degeneration existed in 7, calcification was present in 3, suppurative in 10, in 8 cases the tumor has become cystic, and carcinomatous degeneration had taken place in six cases."

ETIOLOGY.

Although several theories have been advanced we must admit that nothing positive is known as to the direct causation of uterine fibroids. "Byford says the direct cause may be due to a microparasite. Other authors claim that long-continued irritation may be the cause of these neoplasms." While the greatest number are discovered during the menstrual activity, it is nevertheless true that they are also found before puberty. Dr. Jos. Price of Philadelphia has discovered uterine fibroids among the colored women of the South in a large percentage of cases, and during my observation in the past seventeen years I have found these neoplasms in a large percentage of women suffering with uterine symptoms.

*Presented to the Section on Obstetrics and Diseases of Women, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1896.

SYMPTOMS.

The symptoms of uterine fibroids may be divided into three kinds: 1, constitutional; 2, those that originate in the uterus; 3, those resulting from pressure.

The chief symptom of the submucous and interstitial variety is hemorrhage. This symptom is rarely, if ever, present in the subserous variety. The next symptom of importance is pain, always greatest during the time of menstruation, and consisting of backache and bearing down pain. Suppression of urine may be produced by direct pressure on the ureters, which in turn will produce serious kidney disturbance. We may also have local peritonitis produced by pressure, and the various displacements of the uterus resulting from the position of the growth.

Menorrhagia, metrorrhagia, leucorrhœa, backache, pain in the pelvis, down the thighs, sometimes hemorrhoids and serious disturbances of bladder are nearly always present in cases of large fibroids. We have fatty degeneration of the heart, a condition which should not be overlooked, should an operation be demanded. Anemia from great loss of blood and digestive disturbances is present in a majority of cases. Martin has called attention to the liability to embolism and thrombosis, which may cause sudden death several weeks after hysterectomy.

DIAGNOSIS.

To make a positive diagnosis of uterine fibroid in the early stages of its development is not always an easy task, even though our experience may be ever so great. The following differential condition should be considered, viz: 1, pregnancy; 2, retained menses; 3, flexions; 4, malignant disease; 5, subinvolution; 6, inflammatory exudates.

A fibroid uterus is harder and more elastic than the pregnant, grows more slowly, and does not present the positive signs of pregnancy.

Retained menses cause a tenesmus of the uterine walls, but not the hardness of fibroids, and the os will be found closed in cases of retained menses.

Flexions may be differentiated by the use of the sound, which should always be resorted to under the strictest antiseptic precautions.

Malignant disease may be known by the character of the discharge, age of the patient; and, to make a positive diagnosis, the scrapings of the endometrium should be examined with the microscope.

Subinvolution is known by an enlarged cervix, and the history of infection. Inflammatory exudates should not cause much hesitation in diagnosis, as they are accompanied by more or less febrile reaction, sudden onset and acute pain.

PROGNOSIS.

The prognosis in the great majority of cases, in so far as life is concerned, is good, providing the growth does not begin too early in life, and grow so large as to cause death by pressure, or in the submucous or interstitial varieties does not cause death by oft-repeated hemorrhages, or by some malignant or cystic degeneration taking place in the tumor.

TREATMENT.

The treatment is non-surgical and surgical. Under the former we have: medication, manipulation, intra-uterine tampons, intrauterine styptics and electrolysis.

Ergot stands at the head of all drugs in the treatment of fibroids. If of the submucous variety, it may cause its expulsion. It may also diminish the blood-supply by contracting the muscles and blood-vessels and thereby causing atrophy.

Hydrastis canadensis has a very beneficial effect in controlling the hemorrhage. The ergot treatment was faithfully tried by the author in one case, and although a considerable portion of a large submucous fibroid was expelled, the tumor reappeared in a few months, and was removed with the uterus later. Ergot is not always well borne by the stomach, and should then be given hypodermically or in rectal suppositories.

Manipulation is sometimes necessary in order to elevate an incarcerated tumor in the pelvis, intrauterine tampons by means of long strips of iodoform gauze, every forty-eight hours during the periods, and it may be necessary while the patient is being prepared for operation. Intrauterine injections of tincture of iodine or persulphate of iron. The latter is mentioned only to be condemned, as there is great danger of sepsis following.

I have used electrolysis in two cases, with no reduction of tumor; besides, when a strong current is used, it causes the patient great pain, and is often accompanied with danger of sepsis.

Under the head of surgical treatment we may divide as follows: palliative, vaginal, and abdominal operations. In the palliative we curette, ligate the uterine arteries and remove the appendages. Curetting is always indicated from the fact that in nearly all cases the mucous lining of the uterus is in a state of inflammation and, although it must be often repeated, it always gives temporary relief, but should be done with the greatest antiseptic care.

Ligation of the uterine arteries and broad ligaments was lauded to the skies by Martin and Robinson, but recently there has been very little praise for this procedure.

The removal of ovaries and tubes, which was so commonly done a few years ago, by such men as Battey, Hegar and Tait, is now rarely done unless some special reason exists against a hysterectomy or myomectomy. I have performed two operations of this kind the past winter, when a hysterectomy was deemed inadvisable; both patients have been freed from their severe floodings. In order to bring about a cessation of the periods, it is absolutely necessary to remove all the ovary, and the tubes must be tied close to the uterus, otherwise the hemorrhage will occur. The radical operation is preferable per vaginam, when the tumor is small. Vaginal morcellement is practiced in some cases. This operation was performed by Dr. Thos. Addis Emmet thirty years ago. This, too, is accompanied by the great danger of cutting through the walls of the uterus. Radical abdominal operations are adapted to the large subperitoneal and interstitial tumors. Which shall we select, extraperitoneal or intraperitoneal hemostasis? The consensus of opinion at the present time favors the intraperitoneal method. When the ovarian and uterine arteries are ligated on either side, the field of operation is, comparatively speaking, a bloodless one. This procedure was first practiced by Baer and Eastman. The clamp may be used when there is danger to the patient by a prolonged operation. The fact that there is no danger of adhesions, and it affords us the best drainage, should not be lost sight of.

Subserous fibroids, if pedunculated, may be removed by myomectomy, thereby saving the uterus. To control the hemorrhage during operation a ligature may be thrown around the upper part of the cervix, a wedge-shaped incision made, and the parts drawn together after removal of the tumor, by one or more rows of interrupted catgut sutures. In cases where drainage is necessary, this may be done through the vagina or

stitching the uterine wound into the abdominal incision and packing with gauze.

In supravaginal hysterectomy the usual preliminary preparation of abdomen, bowels and vagina is necessary; the latter precaution is especially so, should you find the removal of the cervix necessary, or vaginal drainage be indicated. The abdominal incision should be made high, lest the bladder be injured on account of its malposition. Bring the tumor through the wound, ligate the arteries, ovarian and uterine, remove the tumor and supravaginal portion of uterus. Make the toilet of the peritoneum over the stump and close the abdominal wound. As the toilet of the peritoneum is very important, first ligate all bleeding points, cauterize the cervical canal with carbolic acid, close the canal and cover the stump with peritoneum, which is best done with a continuous suture of silk or catgut. Complete removal is indicated when the uterus is septic, or undergoing malignant degeneration, or when a thorough vaginal drainage is needed. The greatest danger to be avoided is tearing or cutting one or both ureters. The mortality of complete abdominal hysterectomy in the hands of the average operator should not be more than 5 or 10 per cent.

The following cases are from my hospital records of the past three years:

LARGE SOLID SUBSEROUS FIBROID, 33 LBS.; SUPRAVAGINAL HYSTERECTOMY; RECOVERY.

Miss F., aged 28, entered St. Joseph's Hospital July 30, 1898. She had sought relief in many quarters, but in vain. The tumor was large and very hard, and had not been diagnosed until just prior to entering the hospital. She weighed 270 lbs., with girth of abdomen 49 inches at the umbilicus; heart, lungs, and kidneys normal. For several years no great inconvenience resulted, except the pressure symptoms and great discomfort in going about.

A hypodermic of morphin, $\frac{1}{4}$ gr. and 1-150 atropin was given ten minutes before the patient was taken to the operating-room. Sulphuric ether was given by Dr. Jermain, and I was assisted by Drs. P. H. Jobse, G. Fitzgibbon and W. J. Cronyn.

The first incision was about twelve inches in length about four inches above the symphysis, lest the bladder be wounded. It was found impossible to remove the tumor through this incision; it therefore was continued up to the ensiform cartilage, which made the incision twenty-four inches in length. Three omental adhesions on the right side were tied, and with great difficulty the tumor was turned out of the abdominal cavity.

Both ovaries were considerably enlarged and cystic. To expedite the operation a copper wire was thrown about the cervix and fastened with the écraseur. The uterus and ovaries were then cut away, the peritoneum was stitched to the stump beneath the wire, and the abdominal wall closed by three rows of sutures from within outward, continuous silk sutures closing the peritoneum. Chromicized catgut was used to close the muscles and fascia and integument by interrupted silk-worm gut. Immediately after the operation the temperature was 101 F., pulse 90. On the second day after operation the temperature and pulse were normal and remained so until she left the hospital, which was four weeks later.

Three weeks after operation the clamp was removed, and there remained a small fistula, which subsequently closed. The stitches were removed on the twelfth day and the abdomen was closed perfectly. The only an-

noying symptom which followed was an irritability of the bladder at the time of her menses. She is now a strong woman in perfect health and can do her own work.

A LARGE SUBMUCOUS MYOFIBROMA WITH SESSILE BASE, TREATED FIRST BY ERGOT, LATER BY MORCELLATION AND FINALLY BY SUPRAVAGINAL HYSTERECTOMY.

Mrs. R., aged 24, presented normal lungs and kidneys, anemic heart murmur, and herself very anemic from loss of blood. Large doses of fluid extract of ergot were given, and brought on severe uterine contraction, which expelled large masses of tumor, enough to fill a large fruit-jar. The patient's hemorrhages reappeared in two months, whereupon she was removed to the Presbyterian Hospital, and with the assistance of Drs. G. A. Kletzsch and L. Jermain an effort was made to remove the tumor by morcellation. With the hope that all the tumor had been removed, she returned home one week after operation.

Three months later the tumor was as large as ever. Menorrhagia and metrorrhagia were worse than at any time previous; therefore a supravaginal hysterectomy was advised, and she was again sent to the Presbyterian Hospital for operation, and was ordered to drink large quantities of milk and given 1-20 gr. strychn. nit., hypodermically, every six hours for three days previous to operation.

Abdominal incision, 8 inches, resulted in the extraction of a 5-lb. uterus and tumor; clamp applied.

As in the first case, the patient recovered very promptly, and is well and doing her household duties, with no hernia at the present writing.

A CASE OF INTERSTITIAL FIBROMA IN WHICH PREGNANCY PROGRESSED TO FULL TERM. PORRO'S OPERATION. RECOVERY.

Miss R., aged 29, height 3 ft., weight 100 lbs., has antero-post. diameter of brim of pelvis $2\frac{1}{2}$ in., lateral 5 in. Although a dwarf in stature, she has never suffered with hemorrhages or pressure symptoms, and no tumor was suspected until she entered hospital for Cesarean operation. After the gravid uterus was rolled out on the abdomen, it was decided to remove the uterus on account of the presence of fibroid. There were present, at operation, Drs. Kletzsch, Jermain, Scollard, Fitzgibbon, and Hayes. The clamp was also applied in this case and the stump was entirely healed in four weeks. The patient made an uneventful recovery, and is well and able to work to-day. No hernia has resulted.

DISCUSSION.

DR. G. B. MASSEY, Philadelphia—The Doctor used the word electrolysis in describing the various methods employed in the treatment of fibroids. Although this word is very frequently used in connection with the electric treatment of fibroids, yet I think it is an unfortunate one. Its use probably accounts for some of the poor technic in the electric treatment of fibroids. It gives the impression that the tumor is to be destroyed by the electric current. Electrolysis is the chemical dissolution of the electrolyte. Although electrolysis always accompanies the direct current and is a most important portion of the Apostolic treatment, it is by no means the whole element. We must get the greatest amount of electrolysis in the shortest time; we must have the contracting effect of the current. I avoid the word electrolysis and simply use the word electricity. The trophic action is what we want, and the trophic action on the peculiar growths of which we know so little must be gotten by careful testing and patient methods. We can not rush in and dissolve these tumors without getting ourselves into trouble; hence we have those hasty reports of a method so highly recommended by Keith and others throughout the world. I myself have been able to make an addition to the technic which would prevent some of the results of inexperience, among them that of sepsis, from unwise pushing of the current. When I say "unwise pushing of current," I mean using too long an application of

a strong current, making the application twice as much as is necessary. To do this work requires a period of time of from three months to a year. The patient must therefore make some concession, and the physician must concede something in his attempt to make an impression on this growth which will make it innocuous and at the same time preserve to the woman her womanly functions and her abdominal wall intact. The improvement I allude to is the use of mercury on the zinc anode, particularly in hemorrhagic cases where we might have a little septic trouble from unwise pushing of the current. The result of the use of mercury is the production of the oxychlorid of mercury at the seat of application, which makes it absolutely aseptic. Of the kind of tumors that are suited to electric treatment, probably the first are the hemorrhagic cases. These can be cured by patience. The other kind are the little tumors that we have heard so much about in the Section on Surgery and Anatomy. They grow from a minute nodule, and at that time they are treated for prolapsed uteri, etc. Of such cases 100 per cent. can be cured by electricity in from two to four months.

DR. WILLIAM H. WATHEN, Louisville, Ky.—These tumors, in a histogenetic sense, must necessarily be myomatous, the fibrous structure afterward developing and sometimes possibly becoming fibroid. If I understood the gentleman correctly, he used a clamp, and treated the pedicle externally in these operations. Is that correct?

DR. FITZGIBBON—I used it in three cases.

DR. WATHEN—I do not feel we can recognize as a scientific principle the extraperitoneal treatment of the pedicle in any kind of tumors by the clamp. There is either the treatment of the entire removal of the tumor of the uterus, or the removal of the tumor and of the uterus except the cervix. Each of those two methods has its advocates, and it is not possible for any one of us to say that either procedure must take precedence over the other in all operations. There are instances where possibly one procedure is better than the other, and vice versa. I do not believe there is anything in the argument, however, that the leaving of the cervix is of any benefit whatever in furnishing a strong vaginal vault, and it certainly has the disadvantage of leaving a structure in which malignant disease is more liable to develop than in the vagina or the ovary. In these operations we should do as much conservative work as possible, and I was a little surprised to hear the statement made that the so-called fibromyomatous tumors are in every instance amenable to treatment by electricity. I can hardly conceive of a case in which electricity is at all indicated in dealing with this class of tumors, and I think it has done untold harm, and those of us who have treated cases time after time following the use of electric treatment know the mischief it has done, and we know better than anyone else how it emphasizes the belief that there is no field for this method of treatment in dealing with these growths. We should be conservative, but we should resort to surgical treatment when the ordinary medicinal treatment will not relieve the symptoms, or a curettement, etc. In dealing with these cases surgically, we need not necessarily remove the uterus. We have learned in the last two years especially that there are many cases in which we can enucleate one or more fibroid tumors from the substance of the uterus, and by proper suturing leave the uterus so that it is capable of performing its normal function and of bearing children. So the treatment that we ought to develop above all other treatment, when surgical measures are indicated, is that of myomectomy, saving as much of the uterus as possible.

DR. T. A. REAMY, Cincinnati, Ohio—I can not keep my seat any longer after hearing the remarks of my friend from Louisville on the subject of electricity in the treatment of fibroid tumors. I must call a halt. By what authority does Dr. Wathen denounce the use of this agent; proclaim that such treatment ought not to be recognized? I am not an electric expert, but have a fairly clear apprehension of the principles which should guide in its use—with some practical experience. I do not, however, resort to electricity in dealing with uterine fibroma except in carefully selected cases. In most cases demanding treatment I resort to surgery. But certainly in more than fifty cases within the past few years, in which I have employed electricity, the tumors have ceased to grow, have diminished in size, and in some instances have disappeared, these women remaining well. Other men of more skill and larger experience than myself have had even better results. There are many general practitioners who use electricity with intelligence in such cases, and see their cases improve. The hemorrhages cease; the tumor or tumors cease to grow; the patients enjoy good health; and in my judgment many of them are fortunate in avoiding the

unnecessary mutilation ready to be surgically inflicted either by Dr. Wathen, myself or some worthy colleague.

Many of these cases, as is well known, but in some quarters denied, will recover without any treatment whatever. But I repeat that when truthful and competent men report cases cured by the use of electricity we are bound to credit their statements, at least until they are disproven. That the experience of my friend from Louisville is to the contrary does not count, for he has never had sufficient confidence in the remedy to enable him to learn how to use it properly. Gladly do I believe him on other subjects. On this he is not a credible witness. He denounces everything not surgical as unworthy, unscientific, useless. When he or any other surgeon can show a record of 100 per cent. over a long series of cases cured by surgery, then, but not until then, may he denounce all other methods.

In a large percentage of cases surgery is our only refuge; and its possibilities in the field are marvelous. But let us not weaken the arm of surgery or detract from its glory by unnecessary mutilations.

DR. HENRY O. MARCY, Boston.—Little did I think I would have to cross swords with my distinguished friend from Cincinnati, Dr. Reauy, and I am sorry to say that I have to differ with him in regard to the use of electrolysis in the treatment of fibroid tumors. I followed the work of my friend, Dr. Kimball of Massachusetts, and that of his successor, Dr. Cutter, till I was thoroughly satisfied that electrolysis as they advised was a misnomer if it was used at all in the sense of cure. When in London, in later years, I met Apostoli, and became familiar with his work. Ten years ago, after he had attended a meeting of the International Medical Congress, held in Washington, D. C., I invited him to Boston, where patients submitted themselves to his personal treatment. I purchased an electric outfit, made over a thousand applications, and kept careful notes of the cases so treated. The results were unsatisfactory. The surprising thing to me was that every patient declared herself as feeling better; but in a single sense, after careful investigation, I did not find a single patient that I thought was even moderately benefited. I believe the consensus of opinion of two continents is in favor of the surgical rather than the electric treatment of fibroid tumors.

DR. ALBERT GOLDSPOHN, Chicago.—After having heard both sides of the subject of electricity in the treatment of fibroid tumors represented by the opponents and the defenders, I think it is well for one on neutral ground to say something. Electricity does make a patient feel better, and it is not simply a matter of suggestion, either. Electricity does largely do away with that pelvic hyperemia, that venous engorgement of the entire pelvis that exists when such neoplasms are present. We get a beneficial action by electricity without encroaching on the "Holy of Holies"—the endometrium. The introduction of the positive pole into the uterine cavity stands on a par, as far as the danger or good is concerned, with the introduction of a red-hot wire, the actual cautery. It is not rational because we can not evenly apply it to all parts of the endometrium for mechanical reasons, which anyone can see if he thinks for a moment. There is an excessive action in many places and no action at all in others, so that at the end of a week or so there is a culture-bed for germs that are very often septic. The result is a worse condition rather than a better one. The routine introduction of the positive pole into the uterine cavity by the general practitioner is most reprehensible. It is better to use electricity in cases that are dangerous for surgery, that have valvular heart disease, or organic kidney lesions. Use electricity for what it will do in those cases.

With reference to surgical treatment, we should bear in mind that all operators at the present day recognize one ideal standard of tying or clamping of vessels outside of the uterus rather than the use of any constricting ligatures or clamps. If the cases can not be dealt with by myomectomy, where the uterus is to be removed, it is a great deal better to remove the entire uterus, cervix and all, which does not really involve any more labor than to do a supravaginal amputation, and it is for various reasons a decided advantage for the patient in future years.

DR. JOSEPH EASTMAN, Indianapolis, Ind.—There was one point mentioned by Dr. Masser which I can not allow to go unchallenged. He speaks of cases which, after a thorough course of treatment by electricity, etc., may be turned over to the surgeons. I think the surgeon whose diagnostic acumen has been thoroughly cultivated by a few thousand operations in the abdomen, and whose observations of the subjective symptoms and objective signs presented are practical, is much more capable of making a diagnosis and suggesting

what cases should be selected for the surgeon and what cases should be turned over to the electrician than the man who has spent a little of his life in using electricity in connection with fibroid tumors. These cases should be first examined by men of the greatest diagnostic ability, before they are turned over to the electrician. A large number of fibroid tumors contain calcareous deposits, associated with suppurating pus tubes. These are had cases for electricity. I find few cases that are curable by electricity, but a larger number of them are susceptible to surgical treatment rather than to electricity. Electricity has its field in the treatment of fibroid tumors, although it is a very limited one.

DR. C. D. PALMER, Cincinnati, Ohio.—This is an interesting, yet serious, question. I do not believe any one method of treatment is suitable for all cases. The patients must be individualized, and the treatment adapted to the individual case. The first thing to consider in the management of a fibroid tumor is to ask ourselves what will Nature do? Nature is perfectly competent to manage some of these cases; a number of them will get well if left alone, and the best thing for us in some cases is to do nothing. In the second place, let us ask ourselves, after we have found out a reply to that question by the history of the case, what will medicines do? I have very little confidence in medicines, as recommended by a Philadelphia physician, such as bichlorid of mercury, muriate of ammonium, and iodid of potassium. Iodid of potassium is excellent if a patient is syphilitic, but all medicines do very little good in the treatment or dissipation of these tumors. I will except that remedy which seems best adapted for interstitial fibroids or those that are intramural. I refer to hydrastis canadensis. As to surgical treatment, we again must individualize our cases. It is true, we may have to take out the whole tumor, including the cervix, provided the cervix is diseased also. Myomectomy should be resorted to whenever it is possible, and practically when all of the fibroid infiltration can be removed, and the essential structures of the uterus remain undisturbed. A pregnancy and parturition may follow a most thorough myomectomy. A myomectomy only will do if the fibroid infiltration, although small, is left behind. Curettement of the uterus is a most admirable remedy for the treatment of these tumors; nearly all cases are more or less benefited by it. The tumor may be reduced in size after a curettement has been done. In interstitial or intramural fibroids, electricity may be used with benefit; it not only makes the patient more comfortable, but arrests hemorrhage. The main point is to study each case, find out the size of the place and kind of tumor, and govern the treatment accordingly. I consider the Baer operation the best to employ when an abdominal section is made, unless, in very rare cases, the cervix uteri has also undergone fibroid infiltration.

DR. J. WESLEY BOVEE, Washington, D. C.—I want to call attention to the danger of septic infection following curettement in many of these cases. I do not consider it by any means a simple operation. I have seen three or four cases of septic infection following curettement for fibroid tumors where there was encroachment on the uterine cavity by growths sufficient to cause considerable bulging, so that the parts above could not be curetted. It is only a partial operation and is certainly attended with some danger.

DR. T. FITZGERIBSON, closing the discussion.—In order to go over such an immense subject as this I had to skip many important points. I reported three cases as having been operated on by the extraperitoneal method, believing that this is the best method for those cases. My experience with electrolysis has not been sufficient to commend the treatment, but I am pleased to know that some of the members of the ASSOCIATION have had better results than I have in the few cases I have treated with it.

THE LIFE of a talented, successful, unscrupulous, young Paris surgeon is sketched with remarkable technical fidelity in a recent French novel, "Le Mal Necessaire," by A. Couvreur. To supply his insatiable need for money, the young surgeon operates right and left, regardless of everything save the purse of his patients. He takes advantage of a young woman in a cataleptic condition, and when consulted by her parents a few months later, diagnoses a tumor and operates. The chief interest in the story is the psychologic study of his assistant, an honorable man, who learns the circumstances.

SOME RADICAL CHANGES IN THE AFTER-TREATMENT OF CELIOTOMY CASES.*

BY EMIL RIES, M.D.

PROFESSOR OF GYNECOLOGY, POST-GRADUATE MEDICAL SCHOOL,
CHICAGO.

The purpose of the changes which I have worked out within the last four years has been to free the patients from many irksome and disagreeable features of the after-treatment as usually carried out, and at the same time to make their recovery more rapid and more complete, so that they are able to leave the hospital at a much earlier date than has been customary and in such a condition of strength that they can follow their wonted occupations within a few days after their discharge from the hospital.

The first impulse for these changes has been given by the observation of patients on whom vaginal celiotomy had been performed. I found, just as other surgeons did who used this method, that after intra-abdominal work done by the vaginal route with subsequent complete closure of the peritoneum and vagina by sutures, the patients could be fed like perfectly healthy persons and could be allowed to be up and walking about in a remarkably short time. Very soon I found that the period for which it was advisable to confine such cases to bed could be counted by hours instead of days, so that of late I have allowed my patients to get up within twenty-four to forty-eight hours and to leave the hospital four to six days after their vaginal celiotomy. I could not fail to notice that these same patients did not present the picture of listlessness and muscular weakness which the same category of patients present after the performance of the same operations by the abdomen with the usual after-treatment. I refer here to operations on the uterus and appendages, from the simple salpingostomy or retroflexion operation to the extirpation of uterus and appendages.

Though these intra-abdominal operations very frequently necessitate manipulation of the intestines and the omentum, I have never insisted on causing the bowels to move within the first few hours after such operations, and I have found it easy to make them move with a simple enema on the first or second day after the operation. Very often I have found that if left alone they would move naturally. This is infinitely more comfortable for the patient than to be filled with salts as soon as the operation is finished, as some operators recommend. I must add, however, that in the preparation of the patient for the operation I omit the customary efforts toward getting the bowel as empty as possible, because I fail to see how we can expect the bowel to move easily if, previous to the operation, we have insisted on producing a condition of as complete emptiness of the bowels as possible. Many text-books still contain the statement that early action of the bowel is a preventive of peritonitis. This statement is another example of how frequently the cause is mistaken for the effect. If there is no infection of the peritoneum it is easy to move the bowel. If there is infection it is extremely hard to produce a good bowel movement. In the first case it is not the bowel movement which prevents the infection; it is rather the absence of infection which permits of the easy action of the bowel. In the case of infection of the peritoneum it is not the absence of the bowel movement which causes the peritonitis; it is rather the peritonitis which prevents the free action of the bowel. The study of this question in the light of modern research makes this perfectly clear, so that we need not hesitate to establish the maxim

that early action of the bowel is a point of diagnostic or prognostic importance rather than a therapeutic or prophylactic factor with reference to peritonitis.

While these rules were being established by my observations I found that patients who got up early and whose bowels acted regularly and easily presented another symptom which necessitated a further change of the customary after-treatment. These patients were hungry. They were not satisfied with milk and soup or liquid diet generally. They had some muscular exercise, being permitted and encouraged to turn over in bed immediately after their operations, being allowed to be up and about as early as twenty-four hours after the operation. They became hungry and the question arose: could it be permitted to give them something more nutritious? The intraperitoneal stump of organs removed by this method and the suture of the peritoneum and vagina did not seem to form any objection to having a little more fecal matter in the bowel, and so I began to give them meat, bread, vegetables as soon as peritonitis was proven to be absent by the observation of the general condition, pulse and temperature and by an easy bowel movement about twenty-four hours after the operation. To my gratification the patients thrived under this treatment so well that now I allow them every reasonable kind of food in liberal quantities as early as twenty-four hours after the operation. Two things are achieved thereby: the bowel containing fecal matter in moderate quantities experiences the most physiologic impulse to regard action and requires very little attention, and the patients are not being starved and can keep up this muscular activity, which in its part contributes toward the physiologic action of the bowel.

Where cases presented adhesions, where more or less raw surfaces were left on parietal peritoneum or bowel or pelvic organs, such liberality at first seemed little short of temerity. But when I thought the matter over, I remembered how often it had been observed that enormous, apparently inseparable adhesions found in one celiotomy had in a subsequent celiotomy on the same patient been discovered to have disappeared completely and solely by the peristaltic motion of the intestines. I, therefore, arrived at the conclusion that a well-filled intestinal canal and regular peristaltic motion, far from being detrimental, are really the only reliable means of breaking up old and preventing the formation of new adhesions. The practical consequence was that in cases where extensive adhesions were found, whether they were broken up in the course of the operation or not, I gave the patients solid food in liberal quantities very soon after the operation, and my patients have fared well under this treatment. I have yet to see my first case of ileus after a vaginal operation, be it hysterectomy or whatever else it may be. I have not had one single death from vaginal celiotomies in four years, though I have had over a hundred of them. I have had only one death in over sixty vaginal hysterectomies within the last four years, and this was a case of puerperal streptococcus-sepsis with very little pus, a case in which operation was performed as a last resort, with a temperature of 105, death ensuing twenty-four hours after the operation. On the other hand, I have had the pleasure of seeing these cases leave the hospital within a week from the operation in cases of vaginal celiotomy, and within ten days from the date of the operation in the case of vaginal hysterectomies, if they were done with the suture method. The patients go home not as anemic, stooping wrecks with backache, dizziness and general muscular weakness, but as erect as any of us, and able to work the day after they come home.

I have frequently been asked by our Post Graduate students how I manage to render my patients able to be about so early after the operation; whether I give them any special tonics and so on. I do nothing of the kind; they do not even get the much-beloved strychnia. All I do is what the general surgeons nowadays attempt to do in cases of fractures and dislocations, etc. I am telling the surgical Section of the ASSOCIATION nothing new if I speak of the prevention of muscular atrophy in operations on joints, muscles, bones, etc., and they will easily understand me if I compare the work under discussion with their work in general surgery. Put a patient to bed for six weeks and tell the patient to move as little as possible and after the expiration of the six weeks let that patient get up. Would you be astonished if that patient's muscles after general inactivity for six weeks are unable to perform physical functions? Is it not rather exactly what you have seen and see every day in general surgery when a joint and its muscles have been out of use for some length of time? Patients with intra-abdominal operations do not need any special treatment or any special tonic in order to prevent that atrophy, but what they do need is the use of their muscles, and if we do not prevent them from using their muscles we have no atrophy. I am glad to report these observations to the surgical Section, because this special point will, I am sure, be appreciated by the general surgeon.

The objections which might be raised against this régime in vaginal celiotomies have proven to be without foundation in my work. I have seen neither vaginal hernias nor hemorrhages, external or internal, nor any other subsequent trouble that could be attributed to this kind of after-treatment.

So far we have discussed vaginal celiotomies exclusively. But when I had observed the course of convalescence of these cases for some time I began to doubt the wisdom of the customary after-treatment of our ventral celiotomy cases. The only difference that I can see between a vaginal celiotomy and a ventral celiotomy, aside from the question of the organs operated on or removed, lies in the ventral incision. The incision in vaginal celiotomy or vaginal extirpation of the uterus and appendages is small in comparison with the ventral incision necessary in many of the abdominal operations and the chances of a vaginal hernia are correspondingly smaller. But the recent work of Abel on hernia after ventral celiotomy has furnished conclusive evidence that the occurrence of ventral hernia depends entirely on the accuracy of the suture in layers and the absence of infection, while all other factors, including the wearing of a binder, are of secondary importance only. With regard to the firmness of the suture it is entirely indifferent how early the patient leaves the bed, though we have been accustomed to being afraid of putting the suture on a strain soon after the operation. Here again I wish to remind you of conditions prevailing in the work of the general surgeon. Suppose you operate on a neck or a chest, do you forbid the patient to use the muscles of his neck or his chest in breathing or coughing? Suppose you operate on a tongue, can you keep that tongue absolutely quiet? Suppose you operate on a bladder or on a bowel, do you believe you can keep them at absolute rest? Or suppose you perform a suture of a vein, do you propose to prevent the blood from flowing through that vein? You certainly do none of these things, and what about the healing of these wounds? Do you or do you not expect primary union and therewith a firm, reliable cicatrix? Well, that being the case, how about the abdominal incision? First of all, remem-

ber that if you attempt to keep the abdominal suture absolutely quiet, you must know that you cannot do it. Every breath, every heart-beat, every variation in the quantity of the abdominal contents, every filling and emptying of the bladder, of the intestines, moves the abdominal wall, not to mention at all that it is impossible for a patient to maintain absolute rest. Secondly, you know from operations on organs which you cannot keep at absolute rest that primary union of operative wounds in these organs takes place all the same if you keep out infection. So, theoretically, we must arrive at the conclusion that it is not necessary to keep up strict injunction of rest. Practically I have tested this in many cases and the result corresponds absolutely to that observed in cases of vaginal celiotomies. Many of my patients with ventral or inguinal or lumbar incisions have sat up as early as three days after their operations; others I have kept in bed until after the removal of the stitches on the sixth to the eighth day, the superficial layer of stitches which comprises skin and subcutaneous fat alone and which I usually make with silkworm being removed at that time, the deep layers sutured with catgut having by this time united firmly. All the patients, however, are permitted to turn over and move about in bed as soon and as often as they want to. The consequence here as in vaginal celiotomy is prevention of muscular atrophy, rapid recovery of strength and discharge from the hospital about twelve days after the operation.

The intestinal canal is managed in ventral celiotomies as in vaginal celiotomies, no efforts at complete evacuation before the operation and no effort at artificial diarrheas after the operation. As to the relation between peritonitis and early action of the bowel, the same principle holds good as in vaginal celiotomy. The feeding of the patient is also carried out after the same rules as described above. Intestinal operations make no exception to this rule. Patients with bowel sutures or with mechanical appliances in their bowels are permitted solid food after the first bowel-movement, the only special precaution which I use in these cases being a strict order that the patient must chew the food very carefully.

My patients do not wear any binder of any shape or kind after their ventral incisions, and I have still to see the first hernia. I have to add that I do not use any drainage in order to be able to close the abdominal wound completely. I have to use packing sometimes, which is an entirely different thing. I know, however, beforehand that where packing is used and brought out through the abdominal incision I have to expect hernia and I have seen small hernias develop in every one of the very few cases where I have used packing. But in these cases I keep the patient in bed longer than in the cases in which the abdomen has been closed completely, because I know that I have to deal with an imperfect abdominal wall, through which prolapse of the intestines might take place. When the abdominal incision suppurates—and I am sorry to have to confess that I am probably the only surgeon here in whose cases suppuration takes place sometimes—I let the patient be up and about, but I put on adhesive plaster strips in order to approximate the edges of the suppurating wound and incidentally in order to reinforce the abdominal wall.

The changes which I have reported here have not to my knowledge been carried out anywhere else to this extent. I can assure you that with the proper asepsis and with the proper method of suture they can be introduced everywhere, not only without detriment to our patients, but to their positive gain and advantage. It means a great thing for a business man or a laborer or their wives

to be able to attend to their work two or three weeks after an abdominal operation, and it means a great deal to the nervous, cosseted millionaire or his wife to be put on their own feet in a short time, rather than to be confined to bed, having their weak backs and general debility increase rather than disappear after the operation which was to cure them.

100 State Street.

DISCUSSION.

DR. THOS. H. MANLEY, NEW YORK CITY.—It occurs to me that of all the papers that I have heard to-day the last one has not been the least one in importance to the practical surgeon, because it opens up in its way practically a new epoch in the therapy of a very serious, and, as it has become recently, a very large class of lesions; it certainly is one of the most valuable contributions to practical surgery that I have listened to or read for a long while and I regard it as most valuable, because my experience leads me to believe that the observations contained therein are correct. It is valuable, because it points to the improvement accomplished in a very little time by observing simple principles. You all know how we are chained down by authority and tradition in a great many ways. The Doctor makes a plunge here, and shows that it is not only not necessary but harmful to keep a patient in bed four or five days after many a laparotomy, unless we have such conditions as to point to the necessity for it; that as soon as the patient has an appetite she should have something to eat, and such food and in such quantities as agrees. He shows us great saving of time and money, which is a vast object to poor people going in to expensive hospitals.

There is another point—dispensing with drainage. Ten or fifteen years ago every kind of incision was packed with drainage-tubes, by which we killed a great many. The Doctor showed in certain cases the importance of dispensing with the drainage-tube. I would like to ask him whether, in cases where there has been an extensive operation, where it has been found that there has been a considerable parenchymatous hemorrhage, he would let his patients get up?

DR. FREDERICK HOLME WIGGIN, NEW YORK CITY.—It has been my experience that the tendency in treating patients on whom an abdominal operation has been performed, is to withhold food too long a time, and when it is supplied to give it in insufficient quantities. It has been my custom to give these patients nourishment as soon as they are able to take it, and in such quantity and quality as they are able to digest. I have also found, as a result of my work, that it is not necessary to keep these patients very still after the performance of either vaginal or abdominal operations—by incision through the abdominal wall. Last year a patient on whom I performed vaginal hysterectomy left her bed while the nurse's back was turned, within six hours after the performance of the operation, went to the closet, removed the dressings and returned to bed again, without any ill effects following. Another patient on whom laparotomy had been performed, fell out of bed the evening following the operation, and notwithstanding this accident the abdominal wound healed primarily.

As to the action of the bowels after the operation, it is a matter of considerable importance to patients when they are doing well that the bowels should not be moved too soon. The patient is necessarily somewhat weak, and suffers from more or less nervous reaction, and if the nausea incident to the administration of the anesthetic ceases, and the patient begins to desire food or nourishment, it should be given, and it is well in such cases to omit cathartic medicine for a day or two. If, on the other hand, the patient continues to vomit, or is more or less disgusted with food, eighteen hours or so after conclusion of the operation, then the quicker we get the bowels to act, the better it will be for the patient. I have seen many instances where a neglect of this procedure for a few hours, meant the death of the patient, for as a rule, this condition indicates the beginning of intestinal paresis, which condition can not be overcome if it is allowed to get much headway. The symptoms of this condition are, beginning eighteen hours or so after the performance of an abdominal operation, first a tendency of the patient to constantly vomit a light-colored fluid which next becomes tinged with yellow, and later darkens to a brown, accompanied by increasing abdominal distension, prognosis becoming less favorable with the darkening of the fluid, and the degree of abdominal distension. As soon as the condition is recognized, a rectal tube should be passed into the patient's bowel and a seditif powder immediately given. If this is rejected, it has been my custom to give another within fifteen minutes, and if this second powder is not retained, then to pass

a tube into the patient's stomach, and after letting all the gas escape through it that will, to wash out the stomach with saline solution, and then to leave there from two to four ounces of saturated solution of sulphate of magnesia, when the tube is withdrawn. Since I have come to recognize this condition in its early stage, and have followed the line of treatment already indicated, none of my patients, to the best of my recollection, have died of intestinal paresis, although formerly many of those on whom abdominal operations had been performed died as a result of this complication.

DR. F. C. SCHAEFER, Chicago.—I simply rise to make the statement that I have been familiar with Dr. Ries's work. He has certainly obtained remarkable results. The work has interested me to such an extent that I have followed the same course with satisfaction.

DR. C. L. BONFIELD, Cincinnati, Ohio.—I regard this paper as a very interesting one, but interesting as showing a possible method of treatment after abdominal section, rather than the proper one. The Doctor has proven that the incision will heal if the patient is not kept in bed. Few of us doubted that. A dog breaks his leg; the fragments are not held together by any kind of splint; union takes place. The result, however, is not such as to induce surgeons to adopt this method of treatment for their patients with similar injuries. The fact that the incision in the abdominal wall will unite after a manner if the patient is not kept quiet should not lead us to respect this measure, which common sense dictated and experience has sanctioned.

The experience of ages is not to be thrust aside in a minute. But there is a limit to all things. A patient may be kept too long in bed. Many operators doubtless have done this, and many more will now let them up too soon, for doctors are prone to believe that anything new is an improvement. We are not unlike a flock of sheep that follow the bell-wether wherever he may lead.

DR. EMIL RIES, Chicago.—The first question I have to answer is the following: You say it can be done. Is that any reason why it should be done? Yes; if you can save a patient three or four weeks' stay at the hospital, don't you try to do it? If you can save the patient money or discomfort isn't it worth while? Whatever we can do toward alleviating the suffering of our fellow-beings, isn't it our duty to do that? We have to do it as soon as we can; it is our duty—that is what we are physicians for.

I have also to answer Dr. Manley's very kind remarks, and in answer to his question, I would say that I have used in the deep layers formaldehyde catgut, boiled and kept in alcohol; you can boil it as long as you wish, and it will not become brittle.

As to packing, rather than put in a packing, I would leave small bleeding surfaces, or try to stop them by the customary means of a hot sponge or of the cautery applied a certain distance above the bleeding surface, because in this way I can close the abdomen completely. You can not operate on a peritoneal cavity full of adhesions without having some exudate, but in these cases especially I insist on early, liberal feeding, so as to get the bowel full; as long as it moves it does not become adherent; if it is kept quiet it will become adherent.

Dr. Wiggin very properly mentioned cases of patients who get up without the advice of the physician. Six years ago I was in Naples, and in Morisani's clinic the assistant showed me a case of symphysiostomy that had got up the night after the operation, and had walked through the ward to get some water, and all the dressing she had on was a towel around the pelvis. I saw the case once more than a week after that escape, and she had a firm pelvis. Similar observations of laparotomy patients getting up without permission, have demonstrated time and again, that the incisions heal all the same. I must repeat, if it can be done it ought to be done.

Health in Indiana.—The report of the state Board of Health concerning disease in Indiana for July shows that the diseases which increased in area of prevalence during that month were: diarrhæa, cholera morbus, dysentery, cholera infantum and malarial fever. All of these, except malarial fever, are called filth diseases, and would not appear in the hot months if we would but so dispose of all excreta as to prevent access of flies, and prevent the same from getting into the water-supply. The diseases decreasing in area of prevalence were: typhoid fever, erysipelas, measles, bronchitis, pleuritis, whooping-cough, diphtheria, pneumonia and scarlet fever. Dysentery has been epidemic in several towns, notably in Liberty Center and Covington. The total deaths so far, at these two places, have been 26, with probably 100 cases.

THE PROGRESS OF SURGERY.*

BY HERMAN E. PEARSE, M.D.

Chairman of Committee on Progress of Surgery.

KANSAS CITY, MO.

Standing on the threshold of the twentieth century, and looking with the eyes of hope at the future of our noble profession, let us remember that the splendid progress of the past fifteen years has been made possible only by the solid foundation builded by those whose hands have laid down their scalps forever; who watch us now from the great unknown, let us hope, in our feeble struggles to attain perfection in our art. These surgeons who upheld the profession in the long past struggled against a series of obstacles, and with a succession of handicaps that are appalling to contemplate at the present day. They had no method of controlling hemorrhage save by the cautery or direct pressure. They were compelled to operate without anesthesia. Their knowledge of anatomy was as limited as one would expect from the strenuous opposition offered to human body dissection. They knew nothing of infection as applied to surgical wounds. They were powerless to follow by the perfect microscopes, now at our command, the tissue-changes incident to growth, repair, death and morbid change in living tissue. In the face of such appalling conditions, who of us would have accomplished more than they?

In scanning the work of the past, three strongly marked epochs have been pointed out by medical historians. Prior to 1552, or until within 350 years, there was almost no progress in surgical art. At this date Ambroise Paré, then a barber, used ligatures for tying vessels and controlling hemorrhages, instead of the cautery, as his predecessors had done. This enabled the surgeon to work boldly, and beyond the former limits of his craft. He cut more freely, he feared fatal hemorrhage less, and has been increasing the usefulness of Ambroise Paré's invention by new modifications of the ligature, up to the present year, when the formalin preparation of catgut and kangaroo tendon has enabled him to do plastic work in hernia, and indeed, all kinds of surgery of finer grade of manual work, with an ease and a certainty of cure heretofore not to be hoped for.

The second epoch in the progress of surgery was marked 300 years later and only forty-three years ago, when, in 1846, Morton, the Boston dentist, gave to the world the ether anesthesia, and one year later the discovery of chloroform rounded out the measure of this great boon to mankind, and "opened wide the throttle" for the surging advances of operative procedure.

The third epoch was ushered in by Pasteur, in 1856, when he discovered and proved that fermentation could occur only as a result of the presence of certain microorganisms, some of which he isolated and fully described. It was fully completed by Sir Joseph Lister, who in 1867 gave to the world his theory of wound infection and elaborated the antiseptic methods of wound dressing. Nothing was now lacking. Hemorrhage, the dread of all conscientious surgeons, was conquered, pain was banished and quiet insured; inflammation and suppuration were held in the grasp of the surgeon's strong hand, and eliminated at his will.

Progress in surgery may be measured along these three lines. Our diagnostic skill, to be sure, is increasing, but only in connection with the splendid work, even better than our own, coming from the purely medical branch of our profession—the internal medicine men.

New routes of attack in special cases have been devised and perfected, many of them by the gynecologist—who is a surgeon first, and a specialist afterward, and who has solved many of our most vexing problems, laying them as free offerings upon the common altar of professional attainment—but for all these, we may yet, as surgeons, measure our successes, measure our advancement, control our death-rate and raise the percentage of perfect cures by observations along these three lines: 1, the ligature and suture; 2, the anesthetic; 3, the technic as ushered in by Lister and simplified by the many who have followed him.

LIGATURES AND SUTURES.

The profession is coming away from silk more and more, as catgut is perfected. The preparation of this material by the cumol process and by the formalin process, with or without chromicization, makes a suture so strong, so flexible, so surely and certainly sterile, that we are with one accord dropping all else. The use of silver wire in infected regions and for certain plastic work is still much in vogue and to be recommended. The silkworm gut is likewise a fixture under some conditions. In true surgical work, however, in aseptic surroundings and where perfect results are hoped for, catgut has no rival. The use of kangaroo tendon and allied animal sutures in such work as the repair of hernia and ruptured peritoneum has become general. Under its beneficent influence the ratio of perfect cures of hernia has so risen that it is rare indeed, to find an advocate of any other material for use in the union of the more powerful structures to be approximated and held in hernial operation.

Anesthetics.—Perhaps the most notable progress in the art of anesthesia rests in the application of nitrous oxid—"laughing gas"—to general and prolonged narcosis. Children, and patients who have recently filled their stomachs, patients known to suffer badly from the after-nausea of chloroform, or whose lungs and kidneys are too badly damaged to permit either as an anesthetic may be anesthetized by this means quickly and with satisfaction. I have seen Dr. Bennett, formerly of Kansas City, now of the New York Hospital, keep a patient under anesthesia by this agent for half an hour at a time, without bad result, and to the operator's satisfaction. As an adjuvant to ether it is used, on account of its rapidity and its effect in the beginning of the anesthesia, to be followed later by ether, as a less expensive and more permanent agent. Ether, in the old, old controversy between ether and chloroform, still continues to win its way to the front. There can be no doubt in my own mind as to its increased safety and if it were as easily used as chloroform, and if it once acquired its deserved popularity with the mass of physicians, chloroform would be still less often employed than is the case at present. Deaths from chloroform due to paralysis of the heart are still quite common and comparatively unavoidable.

Technic.—As regards technic, the third line along which our progress may be estimated, the energy of the surgical world is now directed to the margin between the ideal death-rate of 3 per cent. and the actual one of 15 per cent. to 20 per cent. The profession have emphasized in the past year that asepsis and not antiseptics is the proper safeguard for the patient, and the latter is used only as a handmaid, so to speak, to the former—a stepping-stone by which it may be reached. The normal salt solution, sterile and non-irritating, has supplanted the bichlorid or carbolic solution as an irrigating material, and for cleansing the hands during the opera-

*Read before the Missouri State Medical Society, Sedalia, May 16 1899.

tion. The autoclave with its tremendous sterilizing power renders it unnecessary to soak towels and instruments in antiseptic fluids. The rubber glove is a permanent innovation. So much is it esteemed that a prominent eastern hospital, finding after 587 hernial operations, 15 cases of suppuration, passed a resolution requiring all operators to wear sterilized rubber gloves when operating, in order to eliminate even this small number of unfavorable cases. This notable innovation is the only exception to simplicity in technic. In all other directions the tendency has been to use less and less paraphernalia in the operating-room and to rigidly limit the number of separate chances for contamination, offered by assistants.

In regard to the cleansing of the hands, I cannot do better than quote Eastman of Indianapolis, Wm. Pryor of New York and others, whose statements coincide entirely with my own experience:

"The greatest objection to any chemical sterilization of the hands and field of operation lies in the probable neglect of that greater virtue which lies in soft water, soft soap and softened elbow grease by much trituration of microbes. Cleaning nails, five minutes of scrubbing; cleaning nails again, five minutes' more scrubbing; then a teaspoonful of powdered chlorid of lime, until the heat of the lime begins to lessen; then sal soda until the hands are cooled; then immersing in alcohol. I have lost faith in the permanganate and oxalic acid. It leaves an acid on the hands last, the lime and soda an alkali last, and the hands that are in the abdomen every day and several times a day will tolerate the lime and soda, whereas the potash and oxalic acid have proven, in my work, very hard upon the skin; and, further, bacteriologic investigation by able eastern surgeons, as well as in our own laboratory, has shown a decided preference for the free chlorine produced by lime and soda."¹

Before closing this report, I wish to speak of some of the surgical procedures that have been to some extent abandoned.

Foremost among them stands the spaying of women—the removal of the ovaries for pelvic pain or because of disease of other structures. The rules of radical destruction that apply to an inflamed appendix do not apply at all to the case of female ovary. Its functions are vital to the welfare, physical and mental, of the woman, and are kept up long after grave changes occur in the connective-tissue portion of its structure. It has been settled that it is better left in situ, even after extensive plastic operations and after resection or removal of the tubes. The appendix is a useless appendage—the ovary a potent and active organ. That its exact manner of influence is not known does not render that influence less powerful upon the physical and mental welfare of the patient. The protest against the wholesale removal of these organs long ago came from the better gynecologists, was echoed by the attentive practitioner of general medicine and now comes from the laity, who see the baneful consequences. While there are still operators so blind to the light of modern pathology, so intent upon "doing something" and that something an easy one, as to perform ovariectomy for pelvic pain in young women, these are rightly denounced as little short of criminal in their disregard of modern views and the lessons of experience so well taught, and at such a bitter cost, by the records of the past decade.

Another operation practically abandoned is that of trephining and craniectomy for epilepsy and idiocy. The results have been so poor, so meager, so bare of

permanent good as to leave us but little choice in the matter—operation should not be advised. These cases belong to the asylum, to the man who can educate the few remaining nerve-cells, who can conserve the little remaining nervous energy and make of these patients useful things—automatons it may be, but self-sustaining and often more. To operate upon these is bad; to exact money for it seems worse. There are indeed a few exceptions to this rule—a very few. The greater part of these cases lie out of the sphere of the surgeon.

It is a pleasure to turn from this picture to the positive grounds fixed by the experience of the year in appendicitis. There is no recession of the surgeon on this line. Operation is imperative, is the only cure, and the earlier done the more certain are the results. Again I would say, as I have said in the past, and as many and better surgeons have said: The contraindications for operation are only a patient too weak or too shocked to bear operation and an operator incapable of doing it. In orthopedic surgery, too, the year has seen great things. Improved methods of treating bone disease; sharper lines of distinction between tubercular and other forms of bone necrosis; improved orthopedic appliances and a broader field of usefulness for the surgeon who would relieve the crippled and the deformed. The conscientious surgeon has reason to be proud of his art, to believe in himself and in the future of his profession.

PROFESSIONAL SECRECY.

ITS LEGAL ASPECTS.

BY WILLIAM C. TAIT, LL.B.,

SAN FRANCISCO.

The ethics as well as the universal custom of the medical profession protect the secrets of the patient from disclosure; the confidence which the relation of physician and surgeon inspires is seldom betrayed. The law, nevertheless, frequently unseals the lips of the physician, and compels him to divulge information which, but for the voice of authority, might never have been disclosed. In the absence of express statutory prohibition, the physician or surgeon may be either permitted or compelled, against the objection of his patient, to testify as to any information concerning the latter's physical or mental condition acquired in a professional capacity, regardless of the nature of the information or the feelings of the patient, for the common law recognized no distinction between professional and ordinary information, at least as far as physician and patient were concerned. Under that system the patient did not enjoy the privileges of the client. The secrets of the latter were sacred and inviolable. If the same protection was not extended to the patient the reason may perhaps be found in the fact that until the last and perhaps the present century, medicine can hardly be spoken of as a profession. The books speak of "physic," and the term is still found upon some of our statute books. The physician shared the fate of the ordinary witness. Neither public policy, the interests of society, nor the confidential character of the information were, to the minds of judges, sufficient inducement to warrant any distinction between professional and non-professional communications. Either plaintiff or defendant might drag from the unwilling physician evidence seldom divulged except to physician or priest. But for the protecting seal of modern statutes, the physician might be compelled to disgrace his patient; it would not be safe to consult a physician. From time immemorial the law, both written and unwritten has closed the mouth of the attorney as to the secrets of his client.

¹ Eastman: West. Med. Review, Jan. 15, 1898, p. 6.

But it did not occur to the lawmaker until a comparatively recent period that the reasons for protecting the client applied with equal, if not greater, force to the patient. How much better is the intimate life of the individual known to the physician than to the attorney. How much does the strength of the domestic tie, the happiness of the individual, the welfare of society, depend upon the silence of the physician. At the present day the statutes of all our states provide substantially that a licensed physician or surgeon cannot be examined as to any information acquired in attending his patient, which was necessary to enable him to prescribe or act for the patient.

These statutes, of which the language is plain and explicit enough, have nevertheless been variously construed. In some jurisdictions they have been interpreted literally and strictly; in others the spirit rather than the letter has been followed. Many interesting questions have arisen, and we propose in the course of this paper to review the most interesting.

First, as to what is to the judicial mind the purpose of the statutes, we will quote the language of Chief Justice Ruger of New York: "To inspire confidence between patient and physician; to enable the latter to prescribe for and advise the former most advantageously, and remove from the patient's mind any fear that he may be exposed to civil or criminal prosecution, or shame and disgrace, by reason of any disclosures thus made."—*McKinney vs. Grand St. R.*, 104 N. Y., 352.

The opinion of the revisers of the New York Code is less complimentary to the profession: "To remove all temptation from the physician during the struggle between legal duty on the one hand, and professional honor on the other. The latter, aided by a strong sense of the injustice and inhumanity of the rule, will in most cases furnish a temptation to the perversion or concealment of the truth, too strong for human resistance."

What do the statutes mean by information? Frequent attempts have been made by ingenious counsel to have the courts confine the rule to the confidential communications of the patient, but so narrow a construction of the broad term "information" has never been countenanced by the courts. On the contrary, the courts have interpreted the term to mean not only communications received from the lips of the patient, but all such knowledge as may be acquired from observation of his appearance and symptoms, for as the New York Court of Appeals once expressed it (*Edington vs. Ins. Co.* 67 N. Y., 185): "Even if the patient could not speak, or his mental powers were so affected that he could not accurately state the nature of his disease, the astute medical observer would readily comprehend his condition. Information thus acquired is within the meaning of the statute."

Nor can the rule be confined to information of any particular character; the fact that the particular information would in no way injure or reflect upon the patient makes no difference. The statute is in this respect at least absolutely prohibitive. It applies to information of every kind and nature acquired professionally and necessary to enable the physician to prescribe or act. It includes measles as well as gonorrhoea. It is so strict that when the physician is compelled to sue for his fees he is not permitted to testify to anything beyond the fact that he had treated the patient, and in the course of his employment had made a certain number of visits. Nor would he be permitted to state that he had performed a surgical operation of a particular nature, so long as the patient objected. A consulting physician or

surgeon is equally within the rule. He cannot prove the nature of his services by his books. As it is practically impossible to determine the value of medical services without at least a general account of the condition of the patient, and the nature of the treatment, the physician is, financially speaking, at the mercy of his patient, unless he is able to prove the necessary facts by the testimony of a nurse.

During the trial of a recent suit of a physician to recover the value of his services the writer endeavored to solve the dilemma by calling the defendant and patient to the stand. The court, however, refused to compel the witness to disclose the information sought to be elicited, holding that the physician could not be permitted to prove by the patient what the law forbade the physician to disclose. As far as the decisions go, there is no authority one way or the other. The statute only applies to the physician. Still, to permit the physician to prove his case by the patient would be a clear violation of the spirit of the statute, which was designed to protect the patient. It may be said *en passant* that the duty of the physician to keep secret professional information amounts to an implied contract, and that a suit for damages will lie for a breach of the contract, in case he divulges it without the patient's consent.

A distinction must, of course, be made between professional and other information. In order that the rule may apply, it is necessary: 1, that the relation of physician and patient should exist between the parties; 2, the information must be such as is necessary to enable the physician to prescribe and act. Without these prerequisites the information, although it be of a medical character, is not privileged.

Statutes and city ordinances regulating the actions of boards of health generally require the filing of a certificate by the attending physician as to the cause of death. But it has been held that such police regulations do not make the certificates public records in the sense that they are evidence between private parties of the facts recorded. In the case of *Buffalo Loan & Trust Co. vs. Knights Templars, etc.*, 126 N. Y., 450, decided in 1891, a policy of insurance obligated the company to pay the insurance within sixty days after the notice and satisfactory proof of the death of the insured, without requiring the cause of death to be communicated. The guardian of the insured, however, furnished the company, as part of the proof of death, the certificate of the attending physician of the insured, to the effect that his death was from a cause which would have released the company from liability. Upon the trial of the case the court excluded both the certificate of the physician and the records of the board of health. One of the grounds upon which the court rejected the certificate was that the guardian had no right to waive the statutory privilege of the deceased. In this case the policy did not require the cause of death to be stated. The same thing might well happen to an executor, or administrator, or to the beneficiary of the policy; unless they were allowed to waive the privilege of the deceased, the company could not be compelled to pay the insurance. Under the law of New York, as it existed prior to 1893, when the statute in question was amended, such would have been the result, as the personal representatives of the deceased patient were not permitted to waive the statutory privilege for him.

The statutes should not be understood to mean that the physician may refuse to be sworn in a judicial action or proceeding, or that he is justified under all circumstances in refusing to disclose professional informa-

tion after having been sworn. The statute is intended for the protection of the patient, and he may waive it if he sees fit to do so. If the physician were permitted to maintain absolute silence, the patient might suffer irreparable damage. The latter may, of course, remove the ban of secrecy; the moment he does so the information is no longer privileged, and the physician may be compelled to divulge it. The success of much litigation depends largely upon the testimony of attending and consulting physicians, and they are frequently called into court by their patients. The whole truth, the whole history of the case, and all the physician knows concerning the physical condition of his patient, are seldom disclosed upon an examination in chief. Naturally only such information as is beneficial to the patient's side of the case is brought out. When, however, the adverse party, by means of a searching cross-examination, attempts to elicit further information, the history of litigation shows a tendency on the part of the patient to invoke the statute, to object strenuously to the introduction of further testimony on the part of the physician the moment it bids fair to become unfavorable to his case. This is usually the case in damage suits for personal injuries. It has also happened more than once in malpractice cases that, after having testified, together with the various members of his family, as to the secrets of the sick-room, the plaintiff has claimed the protection of the statute the very moment the defendant opened his mouth in self-defense. But, as Chief Justice Ruger of New York has said: "The rule cannot be used both as a sword and as a shield, to waive when it inures to his advantage and wield when it does not. Once divulged in legal proceedings, it cannot be again hidden or concealed." (*McKinney vs. Grand St. R.*) The principle enunciated by the chief justice is well illustrated by the Indiana case of *Lane vs. Boicourt*, 128 Ind., 420, in which the plaintiff claimed that the defendant, a physician, failed to give his wife proper attendance during parturition, resulting in the lacerating and rupture of the muscles of the genital organs, and that he allowed five days to elapse before attempting to bring the parts together. The plaintiff, his wife and wife's mother, all testified to all that was done by the physician. But when the defendant called the consulting physician to the witness stand and attempted to prove by him the falsity of the plaintiff's testimony the latter claimed the production of the statute. The court very properly admitted the testimony, holding that the patient had waived the statutory rule and that "nothing was privileged, as all had been published." The court, in the course of its decision, says: "If a patient makes public in a court of justice the occurrences of the sick-room for the purpose of obtaining a judgment against his physician, he cannot shut out the physician himself, or any other present at the time. By this voluntary act he breaks down the barriers, and the professional duty of secrecy ceases. It would be monstrous if the patient himself might detail all that occurred and yet compel the physician to remain silent."

Whether by waiving the privilege as to one physician the patient thereby waives it as to others has been variously decided by the courts. Upon both principle and reason, it would seem that by waiving it as to one he waives it as to all. Sometimes the question as to whether or not the privilege has been waived by the patient is a very nice one, as in the case of *Venzke vs. Venzke*, 94 Cal., 225, in which the wife charged her husband with cruelty in having communicated to her a venereal disease (gonorrhoea). Dr. Reuda testified that he had treated her for that disease. The defendant admitted that he had had

the disease, and that he had consulted Dr. Reuda in regard to it, and did not deny that he had advised his wife to consult the doctor, but said that he had taken it from her. When, however, the wife's attorney asked what he knew about the defendant's case, defendant claimed his privilege, and Dr. Reuda was not allowed to testify.

Did the admission of the defendant that he had had the disease warrant the assumption that he had, by disclosing and publishing the secret himself, waived the statutory privilege. The judge who tried the case thought otherwise, and but for his ruling the plaintiff might have been permitted to show by the physician that he had given the disease to his wife, rather than taken it from her. If Chief Justice Ruger's declaration is good law, and it seems to be, then the testimony should have been admitted.

The death of the patient does not release the physician from his obligation of secrecy. Can the patient's executor or administrator release him from this obligation? Do they succeed to his rights to waive the legal privilege? The courts are at variance on this point. In some jurisdictions, notably New York and California, the privilege is a personal one, and no one but the patient can waive it—not even his executor or administrator. The courts of New York have said that any other rule "would permit the living to impair the fame and disgrace the memory of the dead, by dragging into the light communications and disclosures made under the seal of the statutes." Such a strict and literal construction of the statute is often detrimental to the patient's estate. The case of *Harrison vs. Sutter St. R. R. Co.*, 116 Cal., 156, is a good illustration of this. There the administrators of the deceased attempted to prove by the latter's attending physicians that the injuries complained of caused his death. The court refused to allow the physicians to testify. Such a construction becomes particularly harsh and detrimental, when the validity of the patient's will is in question, for in such a case the rule applies to the proponents as well as to the contestants. In spite of these hardships, the courts of New York for years favored the strict construction, and refused to allow the patient's personal representatives to waive the rule, thus considering the personal rights of the deceased as paramount to the property rights of his heirs. Finally, in 1893, the legislature of that state relaxed the rule so as to permit the latter to waive it except as to "confidential communications and such facts as would tend to disgrace the memory of the patient." Code C. P., sec. 836.

The following case is a still better illustration of the hardship of the literal interpretation:

A policy of life insurance provided that the policy should be void if the insured should commit suicide. He hanged himself, and mainly upon that ground the company defended the action brought by the executor of the deceased. The plaintiff gave evidence that the insured hanged himself while insane. In the course of the trial the plaintiff called a physician who had known the deceased for a long time, and who attended him professionally a short time before his death, and asked the physician how he found him. The defense objected on the ground that the information was a privileged communication and prohibited by statute, and that the privilege of the deceased could not be waived by his executor. The trial court overruled the objection; the physician was permitted to testify, and gave important evidence as to the mental and physical condition of the insured at that time and subsequently. The jury

found for the plaintiff. On appeal, the court reversed the verdict on account of the error of the trial judge in admitting the testimony of the physician, holding that "the purpose of the law would be thwarted and the policy intended to be promoted thereby would be defeated, if death removed the seal of secrecy from the communications and disclosures which a patient might make to his physician, or a client to his attorney, or a penitent to his priest. Whenever the evidence comes within the purview of the statutes it is absolutely prohibited, and may be objected to by any one unless it be waived by the person for whose benefit and protection the statutes were enacted. After one has gone to his grave the living are not permitted to impair his fame and disgrace his memory by dragging to the light communications and declarations made under the seal of the statutes. An executor or administrator does not represent the deceased for the purpose of making such a waiver. He represents him simply in respect to rights of property and not in reference to those rights which pertain to the person and character of the testator." *Westover vs. Ins. Co.*, 99 N. Y., 56, decided in 1885.

It is difficult to conceive how the testimony of the physician in the case just cited either "impaired the fame or disgraced the memory" of the deceased. On the contrary it vindicated his memory from the disgrace of an apparent suicide.

Yet it cannot be said that the court erred in its interpretation and application of the statute. Its language was plain and explicit; it was absolute and unambiguous in terms; it provided for no exceptions.

The courts of Indiana, Michigan and Missouri, under a similar statute, allow the personal representatives of the deceased patient to waive the privilege. In California and in some other states, the New York precedents are followed, and the statute strictly construed. In California, however, the statute is, by its express terms, confined to civil actions. In that state the following interesting case arose:

The defendant, a physician, was charged with the murder of a woman, and found guilty and sentenced to imprisonment in the state prison for a term of twenty-five years. The theory of the prosecution was that the deceased was pregnant and went to the defendant to have him procure for her a miscarriage, and that the defendant by some unlawful means did procure a miscarriage, thereby causing her death.

The theory of the defense, on the other hand, was that the miscarriage was effected by some one else before the deceased went to the house of the defendant, and that he, as a physician, received her there, and did all he could to save her life. To sustain this theory, the defendant called as a witness Dr. Johnson, who was willing to testify. No objection was made by the prosecution. The court, however (Judge Wallace), of its own motion, refused to allow the Doctor to be examined. For this error of the trial judge, the supreme court set aside the verdict, and granted the defendant a new trial.—*People vs. West*, 106 Cal., 89.

In this case the testimony was clearly admissible, for the reason that the statute of California applies only to civil actions. Such a statutory distinction between civil and criminal actions is peculiar to California. It is not found elsewhere. Nevertheless, there is considerable authority for the assertion that the rule does not apply to criminal cases. Thus, in New York, under a statute which provided that "a person duly authorized to practice physic or surgery shall not be allowed to disclose any information which he acquired in attending a patient in

a professional capacity, and which was necessary to enable him to act in that capacity"—we cite this particular case because the New York statutory provision has been incorporated bodily into the Codes of most of our states—the court of appeals held in a poisoning case that the physician who had attended the victim at the request of the prisoner, and had examined him and prescribed for him could be allowed to testify for the people, as against the objection of the prisoner, the latter's objection being that it was prohibited by statute. The court, after asserting that the object of the statute was "to place the information of the physician obtained from the patient in a professional way substantially on the same footing with the information obtained by an attorney professionally of his client's affair," saw fit to violate the plain language of the statute, by making a distinction between civil and criminal actions, alleging as a reason for such an arbitrary distinction that, if strictly construed, it would be extremely difficult, if not impossible, in most cases of poisoning to convict the murderer. "The statute," the court said, "was intended to protect the patient and not to shield one who is charged with his murder."—*People vs. Pierson*, 79 N. Y.

In other words, in order to convict the defendant, who is perhaps an innocent man, and who may be acquitted by the jury of the crime charged, it is proper and admissible to compel the physician of the victim to break the rule of professional secrecy, and to divulge information which may "impair the fame and disgrace the memory" of the patient!

Is it not better that the guilty should escape, if they cannot be convicted except by breaking down the barriers which the law has erected for the protection of the confidential relation of physician and patient? The decision in the Pierson case was written by Judge Earl in 1880. In 1886 the same judge, in passing upon the same statute, refused to permit the executors of a deceased patient to waive it, and said "that so important an exception should be engrafted upon the statute by the legislature, and not by the courts; that if the statute excludes the most reliable and vital evidence which is absolutely needed for the ends of justice, particularly in testamentary cases, the remedy is with the legislature, not with the courts. There is no more reason for allowing the secret ailments of a patient to be brought to light in a contest over his will than there is for exposing them in any other case where they become the legitimate subject of inquiry." This was the language of the court in a civil case (*Renihan vs. Dennin*, 103, N. Y., 593). Is it not equally applicable to a criminal case?

In the Edington case, and in the case of Grattan vs. Metropolitan Life Ins. Co., 80 N. Y., 281, Judge Earl thought the statute should be so construed as only to prohibit the disclosure by a physician of any information of a confidential nature, but was overruled by his associates. In the Pierson case, he thought there was nothing of a confidential nature in anything the physician learned, or which was disclosed to him; the symptoms and conditions were such as might be expected to be present in a case of arsenical poisoning.

The legislature of New York, in amending the statute in 1893, adopted his views as far as personal representatives were concerned. It did not see fit, however, to engraft a further exception by confining it to civil cases, as had been done in California.

The question is more squarely presented by the case of *People vs. Brewer*, 53 Hun., 217, in which the defendant was charged with aiding and assisting in procuring an abortion. The physician was called on the trial as a

witness for the prosecution, and was allowed, against the objection of the defendant, to testify that the following conversation took place between himself and the defendant: The defendant said: "For God's sake, hurry up; my wife has a fit, or fainted, or something. I don't know what." He said: "Probably you would like to know what the difficulty is before you leave the office." I said: "Yes, it might be a help to me, because I might need something that I would not take with me." He said: "This lady down to the house I am living with I am not married to, but I expect to get a divorce from my wife and get married. This lady is about three months gone in the family way, and she introduced a catheter with a wire in her womb, and after she had introduced it far enough to hurt her, I blew in it." I said: "What did you blow in it for?" He said: "I done it before, and it worked all right."

The jury found the defendant guilty. The verdict was reversed on appeal, on account of the error in allowing the introduction of the physician's testimony. The court refused to apply to this case the principle of the Pierson case, and said: "The present case is widely different. The defendant employed the physician to save Mrs. Brower's life. His alarm and anxiety were great. He knew what had taken place, and suspected that it was the cause of her sudden prostration, and felt that the physician ought to know it, and to govern his treatment accordingly. The physician did want to know. In this critical moment, with the sole purpose of saving the woman's life, he disclosed the secret to the physician to enable him to act rightly. To have withheld the disclosure would have made the defendant a consenting party to the woman's death. We have no doubt that the statute, both in letter and spirit, protects the confidence thus reposed in the physician, and forbids him to betray it."

Professional intercourse between attorney and client is protected by profound secrecy. The privilege is that of the client, and the prohibition as to the attorney is absolute. The law never unseals his lips in the interests of justice, not even when the client is charged with a crime. The client cannot be convicted out of the mouth of his attorney, any more than can the guilt of the penitent be proved by the testimony of the priest. In the case of the patient the statute may sometimes block the wheels of justice, but as Chief Justice Bigelow of Nevada said in *People vs. Depoister*, 21 Nev., 107: "It is better that such testimony should be lost, than that the confidence which ought to exist between priest and penitent, lawyer and client, and physician and patient, should be destroyed by the knowledge that they may be compelled to divulge the information so obtained from those who have placed trust in them."

MEDICINE.*

ITS PROGRESS, PROBLEMS, AND PROSPECTS.

BY J. BRUYERE, M. S., M.D.

SURGEON TO MERCER HOSPITAL.

TRENTON, N. J.

It has been the request of the committee of arrangements that the president of this Society deliver an address on "The Progress, Problems, and Prospects in Medicine," at this our fiftieth anniversary. With due appreciation, we accept the honor conferred and bespeak your kind attention and indulgence. The subject is so broad and comprehensive that we can not do more than briefly consider the course of medical evolution, and

some of the present medical problems and prospects. In the dim past so many theories, hypotheses and opinions emanated from such a few facts that medical systems flourish in abundance. It would be impossible, in the brief time at our disposal, to describe the medical systems and dogmas of the past, so we will only briefly allude to these and pass on to a brief sketch of the progress in some of the numerous branches of medical science for the last fifty years. The last decade has been a period of advancement without parallel in the world's history. This progress has revolutionized the principles and practice of medicine, hence it would require much patient research and philosophic insight to successfully trace the evolution of medicine during this period. It would require the pen of a medical genius to fittingly portray the good accomplished in preventing suffering and saving life. It is to be hoped, for the honor and glory of medicine, that the time is not far distant when some worthy medical historian will fittingly perform this task.

Throughout the ages medical evolution has kept pace with intellectual development. An infant age bred fear, bigotry, superstition and great credulity. Diseases arose from unseen and mysterious causes, hence remedies were equally mysterious, and charms, sorceries, propitiatory prayers, sacrifices and gifts were offered to appease the wrath of the gods, and to secure the assistance of some health-giving deity. During the age of barbarism, medicine was a species of sorcery, and excited fear in the popular mind. During the age of superstition, medicine was the "mystery of the alchemist," and excited feelings of wonder. During the ecclesiastical age medicine became oracular, and it was accepted with absolute credulity. During the metaphysical age medicine was speculative, and was accepted dogmatically. During the age of experience and superficial observation medicine became empirical, and specifics were demanded. During the present scientific age, fear, sorcery, alchemy, mysticism, dogmatism, empiricism, etc., have vanished, and the scientific spirit and methods have taken their place. For many centuries, owing to bigotry, superstition and the spirit of speculation, there was only progressive accumulation, and but little scientific advance in medicine. There were no laws regulating the practice of medicine, and even as late as the Middle Ages, the regular profession was composed of a mongrel horde of barbers, bath-keepers, bone-setters, butchers, calf-doctors, crystal-mancers, druggists, exorcists, midwives, priests, lithotomists, rat-catchers, shepherds, hermits, magicians, jugglers, gypsies and numerous other charlatans, mountebanks and quacks. General practice was largely in the hands of the priesthood, and surgery in the hands of social outcasts, until the sixteenth century, when there was a separation of the priesthood from medicine.

At this time there was a recognition of the importance of surgery by anatomists and clergy, and a drawing together of medicine and surgery. The ecclesiastical doctors were prone to speculation, and believed in the efficacy of charms and relics, and in the intervention of the martyrs and saints. Among the causes of disease they included demons, witches and ghosts, "the fall of man," "the faculty of appetite seated in the spleen or in the stomach," "the poisoning of the vital spirits," etc. They despised surgery, and regarded operations as beneath their dignity. In the thirteenth century surgical operations were forbidden, dissection was regarded as a sacrilege, and books on medicine were banished from the monasteries. The works of Arnold de Villeneuve, Andreas Vesalius and others "were condemned by the iniqui-

*Read before the Mercer County (N.J.) Medical Society, at its Fiftieth Anniversary, May 23, 1898, and subsequently revised.

sion, because they commended experiments rather than mere speculations." They were thought to be atheists and heretics, and were persecuted by the church, which later ridiculed Boyer, Jenner, Simpson and many others, because they feared them and the effects of their discoveries.

This early persecution by the church is not to be wondered at, if, as Park tells us, many of the clergy "were mere lascivious gluttons, and considered even washing unchristian." They denounced all observations and experimentations, and believed that "wisdom, like the grace of God, was obtainable only by fasting, supplication and poverty." All truth was to be revealed by their inner consciousness; they imagined, they speculated, they dogmatized, and, like Pilate's wife, pronounced judgment from their dreams.

The period previous to the sixteenth century was one of cabalistic theories, of mysticism and occultism, when gods, devils, and stars were supposed to exercise an influence over the conditions and affairs of men. During the Middle Ages occult philosophy consisted of theosophy, magic, astrology and alchemy. At the beginning of the seventeenth century, the natural sciences began to flourish, and observation and experimentation added many new facts to human knowledge. Modern realism, or inductive philosophy, exact methods and originality, were beginning to take effect, and were greatly advanced by such men as Sydenham, Bacon and others.

A new era in medical science commenced when the inductive system of philosophy passed into medicine. Previous to the seventeenth century they philosophized and dogmatized about medicine, and the humble labors of research were held in contempt. Dogmatism was the result of self-confident ignorance, and flourished when the principles underlying the treatment of disease were merely speculative. As we become more thoughtful and rational, dogmatism declines. It is now regarded as an act of supererogation and presumption on the part of any one to assume an autocratic dogmatism and express ex-cathedra opinions on any subject until the evidence is first carefully examined and set forth as a basis of belief. The reason is no longer in subjection to the imagination, and we no longer seek scientific truths by introspection. Men are being taught to leave their minds free to receive the impressions of truth, to interrogate nature by observation and experiment, and inductive reasoning, and to prove all things, and hold nothing for true until the grounds of certitude have been ascertained. Individual experience, deductive reasoning, and many theoretical beliefs are being eliminated by inductive and scientific methods. Sir Astley Cooper's motto: "First observe, and then think," is a good one. Observation and experimentation now precede conclusions, and have overthrown the hypotheses which were sustained only by speculation. Hypotheses must be proven, and beliefs must be founded on evidence and supported by facts. There must be a cause for every effect, and a reason for every belief. Each one must use his own eyes, and must think and observe for himself. The *ipse dixit* or ex-cathedra opinions of the great masters are no longer blindly accepted. We cannot rely upon dogmas, or the inherited opinions and beliefs, which rest solely on authority and not on their own intrinsic merits. We must accept "truth for authority, not authority for truth." Dogmatic authority steeped "in port and prejudice" made of medicine a black art, and shrouded her in mystery.

For long years medicine occupied the realm of mystery, and was accepted on faith. A sanctified faith, that

has a spiritual and intellectual foundation, is commendable, but a blind, unquestioning, superstitious faith, founded on great credulity and ignorance, imprisons the reason and leads not toward knowledge, wisdom or truth. It is said that "a judicious distrust and a wise skepticism are the sinews of the understanding." The great Sydenham was called "a man of many doubts." He was an intelligent and original thinker and investigator, and was loyal to truth rather than to authority. This is the scientific spirit, and has made the present an era of modern science. If we are to have scientists in medicine, the laboratory, hospital, dispensary and clinic must continue to furnish experimental and practical information. True scientific methods are being developed by numerous inquiries, keen experimentation and close research. Medicine is now an inductive as well as a deductive science. The scientific methods now predominate, and special systems with their "isms" and "pathies," are fast disappearing. A broader intelligence recognizes the solid foundation on which medicine rests—a foundation that is laid by research, observation, and experimentation, the same as physics, chemistry, or any other branch of science. Regular, or rational medicine, has received its greatest impulse and development through scientific methods.

Although a broader intelligence demands of medicine observation, positive knowledge, absolute proof, or the scientific spirit and methods, nevertheless there are many who can not distinguish between science and pseudo-science. There are still many pretensions theories that are built on delusions in physics and philosophy. The human mind develops slowly. The faith and belief of the ignorant and credulous "rise by means of heated air—the fevered breath of enthusiastic ignorance." To all such, medicine is "the grand idol of human credulity," and their faith and belief become a port free of entry to all unsupported individual convictions. Over this port of entry is written the motto "*Credo quia impossibile est*"—I believe this because it is impossible. Christian science, osteopathy, and all the other "pathies" and "isms," find easy entry and shelter here. Human ignorance and credulity have ever been the fruitful soil from which have germinated and flourished many pretentious theories. Scientific medicine will never be fully appreciated until the laity more fully understand the scientific tendencies and spirit of the age. But, thanks to the writings of Darwin, Spencer, Haeckel, Wallace, Huxley, Tyndall and others, people are being taught scientific methods of thought, and the importance of investigation by the senses. The pure science of nature, founded upon scientific investigation, is the most influential philosophic doctrine of this century. Of course, medical thought, as well as the popular mind, has been largely guided by these philosophic doctrines. All advance in physics, chemistry, natural history, botany, zoology, comparative anatomy, etc., have advanced the science of medicine. Medicine has ever appreciated and profited by the advance in all the various departments of science, still she has not been entirely receptive. She has found it more blessed to give than to receive, and, during the last fifty years, she has given to science many of the grandest ideas and truths of the century. These we will consider later.

When this Society was founded, May 23, 1848, medicine was an art rather than a science. The *post hoc ergo propter hoc* error which at this time received so much attention, has been discarded through rational observation. We now have more knowledge of, and re-

spect for nature than formerly, and no longer attempt to make art superior to nature. Medical truths are now discovered by applying sound medical observation and judgment to the phenomena of life. Many complaints that were popularly believed to be due to meteoric influences and the appearance of comets or to the "visitations of God," and called by medical men "idiopathic," are now rightly assigned to their real cause. Increased knowledge in the nature and causation of disease has led to more effective treatment. We no longer delight in polypharmacy with its shot-gun prescriptions. It is said that Huxham gave messes to his patients containing more than four hundred ingredients. The empirics prescribed nostrums and panaceas for a name, but now empiricism has largely given way to rationalism and physiologic and pathologic investigation have led to rational therapeutics. The great advance in physical diagnosis, and in the knowledge of the physiologic action of drugs, has banished this pseudo-scientific audacity in the use of remedies. We now use extracts and active principles for a definite physiologic effect, rather than crude drugs and mysterious combinations. Our experimental and physiologic laboratories have greatly increased our knowledge of biology, organic chemistry and the physiologic action of drugs, and have given us the alkaloids—the active principles—and many new and useful remedial agents, which we now prescribe for their physiologic effects, and for this alone. The blind faith in many remedies and methods has disappeared. Calomel was formerly regarded as "the Samson of the materia medica," and bleeding was both a necessity and a virtue. It is said that, in one year—1833—there were "forty-one million, five hundred thousand leeches imported into France." Broussais is said to have used one hundred thousand leeches in his own hospital wards during one year, and Bouillard is said to have surpassed even this. When we consider the amount of blood extracted by the lance, and by cupping, in this country as well as in France, we must conclude that our forefathers were sanguinary heroes, heroic in their faith—a divine quality that is often misplaced. Our Puritan forefathers were martyrs to faith. They believed in the combination of theology and medicine, or the "angelical conjunction" as it was called. They placed great confidence in the medical skill of their spiritual authorities, and Cotton Mather, who believed in witchcraft, etc., "was regarded as an eminent authority on medical subjects." These theologico-medical experts wrote many pamphlets and works on medicine, which must have excited the risibilities of the saints. They believed most intensely in the efficacy of prayer, which they often practiced at the bedside of their patients. Such an act is commendable, but the humor of the situation dawns upon us only when we are informed that the results they sought, by their prayers, was, as they quaintly expressed it, to "give them a lift Heavenward." What would be thought of the doctor to-day who sought such therapeutic results? What sublime faith our forefathers must have had to trust those whose avowed purpose was to give them a lift Heavenward. How different is the faith of their degenerate sons, who do not have even such confidence in those whose avowed purpose it is to keep them out of the bottomless pit. How sublime also was their faith in the justness and generosity of God acting through human instrumentality, or by proxy. Dr. Stafford says: "No man can with a good conscience take a fee or reward before the party received benefit apparent, and then he is not to demand anything but what God shall put into

the heart of the party to give him. And he is not to refuse anything that shall be given him, for it comes from God." *O tempora, O mores!* Such views could do nothing else than breed infidelity and atheism among doctors. But times have changed. The simple faith of childhood fades away as thought and knowledge develop. The primitive faith in medicine has been banished by scientific methods of observation and experimentation, which have caused more progress in medicine during the last fifty years than during all previous time.

Previous to 1848 nothing was known about bacteria, infection, immunity, antiseptics, asepsis, toxins, anti-toxins, etc. Gynecology, dermatology and pathology were in their infancy, and bacteriology was unknown. But little was known about the diseases of the heart, lungs, liver and kidneys. Nervous diseases, and diseases of the nose, throat, eye and ear were comparatively unknown. There were no laboratories, no recitations, no graded course, no ward classes, and no text-books were required. The medical student had no actual contact with disease, but after six months of didactic lectures received his diploma, and went forth to kill or cure as the fates decreed. There were no boards of health, except the microbes and the buzzards; and hygiene, sanitation and preventive medicine were in their swaddling clothes. There were no microscopic or chemical examinations of the blood, or of the secretions and excretions. Dietetics, during the last half century, has been established upon a rational scientific foundation. Pediatrics, which date from "*de morbis puerorum*," 260 B. C., received but little attention until quite recently. The first text-book of diseases of children that was published in this country was written in 1825, by Logan and Dewees. We had no journals treating of pediatrics until 1868, and there was not an exclusively pediatric society until 1888. There was not a hospital, in this country or England, for diseases of children until 1852. In 1854 a child's hospital was founded in New York, and in 1855 one in Philadelphia. These were the first established in America. There was no special chair in pediatrics in any of our medical colleges, until 1860, and this was filled by the distinguished Jacobi. The "humane sciences"—anthropology, psychology, criminology and sociology—have been formed and developed by the investigators in the field of neurology. The study of neurology has done much to explain the cause of degeneracy and the philosophy of reform. It has ameliorated the conditions in our schools, asylums, reformatories, and prisons. It has led to a better knowledge of self, to a better knowledge of the effects of heredity and environment, and to a more sympathetic and more humane treatment of the weak and erring. It has taught us the broad distinction between abnormality and immorality. It has dispelled many harsh and ascetic beliefs, and ameliorated many social conditions. It created such broad sympathies and altruistic sentiments that harsh and inhuman treatment of the degenerate classes no longer prevails. Only a few years ago the insane were supposed to be possessed with a devil, bewitched, or the victims of divine displeasure. They were regarded as heretics, witches, criminals. But the study of neurology, inductive inquiry, and physiologic research, has taught us that insanity, like all forms of degeneracy, is a disease to be treated, rather than a crime to be punished. Great has been the advance during the last fifty years. In 1848 there were about thirty medical colleges and 3500 students; now it is estimated that we have about 170 medical schools, 28,000 students,

and about 186,000 physicians. The libraries, medical journals, societies and scientific associations were few, now they are very numerous, almost universal.

With this broad and general consideration of the subject, which is merely superficial, we will now mention some of the more important discoveries and indicate their effect on general medicine. A short time previous to the organization of this Society, the first great discovery in medicine was made. Anesthesia, a term first suggested by Oliver Wendell Holmes, was at this time running the gauntlet. Holmes tells us that by means of an anesthesia "the fierce extremity of suffering has been steeped in the waters of oblivion, and the deepest furrows in the knotted brow of agony have been smoothed away forever." He, and many others, lauded this great discovery, but some of our ministerial brethren anathematized it as "a decoy of Satan—which will harden society, and rob God of the deep earnest cries which arise at the time of trouble for help." For a long time the clergy did not appreciate the moral and spiritual influences exerted by medicine, but at the present time they are our staunch friends and allies, and no longer fear the results of scientific investigation.

Sulphuric ether was first discovered in the thirteenth century. In 1510 it was called the sweet oil of vitriol, and in 1730 it was first called an ether. In 1796 Beddoes published a work on "Fartitious Airs," in which he says that "Ether in pectoral catarrh gives almost immediate relief both to the oppression and pain in the chest," and further states that "after inhaling two spoonfuls he fell asleep." In 1839, in Pereira's well-known treatise on materia medica, the intoxicating and stupefying qualities of ether are mentioned and its exhilarating effects and its relief of colic and pain were well known. Nothing could better illustrate the unscientific methods of the age than this, and the great need of close observation and experimentation. With all this knowledge before him, it seems strange that Velpaun, in 1839, should write: "To escape pain in surgical operations is a chimera which we are not permitted to look for in our time." At this very time negroes on southern plantations were holding "ether frolics," and knew much about the anesthetic effect of ether. Ether and its blessings might have been obtained centuries before, had there been greater observation and experimentation. At present, with our laboratories for scientific research, medical truths do not slumber so long in the lap of forgetfulness.

On Oct. 16, 1846, occurred the first authentic and public exhibition of anesthesia during a surgical operation, although this was not the first time ether had been used for the purpose of producing insensibility to pain. In May, 1842, Crawford Long of Georgia removed from the neck of a patient a small tumor, while under ether, and without any pain. In 1844 Horace Wells, a dentist of Hartford, first demonstrated the painless extraction of teeth when under the effects of nitrous oxid gas. During this same year Dr. Marcy of Hartford performed a painless operation on a sailor, while under the influence of ether. In 1841 W. T. G. Morton entered the office of Horace Wells, as an assistant, and while there became impressed with the nature and usefulness of nitrous oxid gas. He saw in this a pecuniary reward, so he applied to Dr. C. P. Jackson of Hartford, a noted chemist, to ascertain the best method of manufacturing the nitrous oxid gas, for anesthetic use, and Dr. Jackson first suggested to him the use of ether for this purpose. On Sept. 30, 1846, Morton gave ether for the extraction of a tooth, and the operation proved painless. The next

day he proceeded to have his supposed discovery patented. Then he called upon Warren, at the Massachusetts General Hospital, soliciting his co-operation, and on Oct. 16, 1846, he made his first public experiment with his so-called "lethion," which was simply ether disguised by aromatic oils. Warren succeeded in removing a tumor from the neck of a young man, and the operation was pronounced a great success. Had Morton possessed a scientific and philanthropic spirit instead of one of speculation and cupidity, he would never have disguised the ether or patented his supposed discovery, and sold office rights to dentists. The hospital was the pedestal that caused his borrowed light to shine abroad like a newly discovered sun. Morton, in attempting to find a market for his patent, first publicly proved to the world that ether was a safe anesthetic in surgical operations. Nevertheless, the Medical Society of Paris, in 1848, recognized the claim of Horace Wells as having been the first to apply the use of vapors or gases for painless surgical operations, and on Wells' monument in Hartford, is the following inscription, "Horace Wells, who discovered anesthesia, November, 1844."

Chloroform was discovered in 1831, but was not introduced for anesthetic purposes until 1847, when Simpson used it in his obstetric work. Cocain was discovered by Niemann in 1860, and was first applied as a local anesthetic, or analgesic, in 1862, by Schroff. Karl Koller first demonstrated its use as an ocular analgesic, and reported the same in 1884, when it first came into general prominence. Since this time rhigolin or chlorid of ethyl, Schleich's infiltration method, eucaïn, holocain, aneson, orthoform, etc., have been used as analgesics, in minor surgery. Before anesthesia patients sometimes preferred death to the pain and agony of an operation, which frequently terminated in death from the depressing effects of simple shock and pain. Now there is no more pain, no more agony, and no more incautious haste on the part of the surgeon. Far more difficult and better operations can now be performed. Anesthesia was one of the grandest discoveries of all time, and the human race owes a debt of gratitude to the profession that has done so much toward the relief of suffering and the prolongation of life.

Another grand discovery that has no parallel in the history of medicine was the discovery of bacteriology and antiseptics. We will next, therefore, consider bacteriology, its history and development, its influence over etiology, pathology and the principles and practice of medicine, together with the results that have followed this discovery, such as the knowledge of infection, hygiene, preventive medicine, sanitation, boards of health, antiseptics, asepsis, serum therapy, immunization, etc. The germ theory of disease was anticipated by Terentius Varro, 115 B. C. He advised people to avoid marshy places which "breed certain minute animals, invisible to the eye, and which, carried by the winds, penetrate the mouth and nostrils, and promulgate obstinate diseases." It seems that nearly, if not every, great discovery was anticipated centuries before. For a century or more previous to the experiments of Pasteur, Tyndall, and others, scientists and naturalists believed in the spontaneous generation of life. They knew of the existence of micro-organisms, "monads" or "vibrions" as they were called, but they did not know that all life springs from pre-existing life. They did not know the life history of micro-organisms, or the part they play in nature or disease. Still there were a few early investigators who believed in the germ theory of disease.

In 1675 Leuwenhoek described the "animalcules" in water, and in 1683 he discovered micro-organisms in the saliva, in the intestinal evacuations and elsewhere, and this led him to believe in the relation of micro-organisms to disease. He believed that all diseases and pathologic conditions were caused by organisms. In 1762 Plenicz declared that all infectious diseases were due to living substances capable of multiplying within the body, and of transmission through the air. He discovered animalcule in all decomposing matter, and believed that decomposition was always due to organisms, and that each disease had a special germ. The times, unfortunately for posterity, were not ripe for such observations or theories—which at this time were regarded as due to an unbalanced mind. Ozanan, in 1820, refers to Plenicz' theories and calls them "absurd hypotheses." Robert Boyle, in the seventeenth century, believed that a knowledge of the cause of fermentation would explain the phenomena of fevers and other diseases. Many had vague notions about a "*contagium vivum*," or minute organisms capable of spreading and reproducing themselves. In 1835 Bassi discovered the parasitic origin of silk-worm disease. In 1836 Schulze proved the presence of organisms in the air, and in 1837 Schwann found minute globular bodies, which he believed to be the cause of alcoholic fermentation, and later proved that there was nothing in the elements of air to cause fermentation, as heated or sterilized air would not produce fermentation in boiled substances. In 1843 Helmholtz confirmed Schwann's discovery. In 1839 Schönlein discovered that a parasitic fungus caused the contagious disease of the head, called favus. Vogel discovered the *oidium albicans* in 1840, and Gordsir the *sarcina ventriculi* in 1841.

In 1849 and 1850 the first and largest of the pathogenic organisms—the anthrax bacillus—was identified and described by Pollender and Devaine. So important was this discovery that it has been called the key-stone to the arch of bacteriology. Notwithstanding this discovery, and all previous observations, it was still generally believed that micro-organisms might arise *de novo*, or be generated spontaneously. Liebig thought that putrefaction was due "to the absence of oxygen" and disturbed "molecular arrangements." Schroder and Dusch, in 1854, proved that filtered air would not produce fermentation, and Schwann, Helmholtz and others, in 1848, knew that fermentation and putrefaction were intimately connected with the presence of organisms.

But it remained for Pasteur, in 1858, to scientifically explain the mysteries of fermentation and to disprove the theory of spontaneous generation. There were many previous experiments and observations that anticipated Pasteur's work, but with greater zeal, and with scientific methods of research, he did more than any other observer to popularize and give scientific form to the discoveries previously made. Tyndall and Cohn's observation on the micro-organisms in the air, their relation to fermentation and putrefaction, and the results of temperature on germ life, did much to banish the idea of spontaneous generation, and to create an earnest study of the relations of germs to disease. Pasteur, in 1858, showed that lactic, butyric, and acetic fermentation, and the fermentation of the impure tartrate of lime, were due to micro-organisms, and later affirmed that putrefaction is only a special case of fermentation. He investigated the diseases of silk-worms, the cause of splenic fever, etc., and showed that sheep and cows vaccinated with the attenuated bacilli of splenic

fever were made immune. He first scientifically demonstrated that infection is a phenomenon of microbial parasitism, and first discovered the principle of vaccination, and proved that the pathogenic microbes could be so attenuated or weakened as to produce a mild disease and future immunity. Pasteur's experimental work was along the line of fermentation, infection, contagion, and vaccination. These, together with his discovery of the new treatment of hydrophobia, which is said to cure more than 99 per cent. of all cases, have made him a great benefactor to humanity. Pasteur undoubtedly laid the foundation for bacteriology, but many earnest workers aided in erecting the superstructure. Cohn classified and studied the forms of bacteria, which he regarded as constant. His classification and theories were later modified and enlarged by Lankester, Lister, Billroth, Klebs and many others, who added greatly to our knowledge of the morphology of the micro-organism. While these observations in morphology were being made other observers were doing much to establish the relation of micro-organisms to disease. Villemin, in 1865, first demonstrated the fact that tuberculosis is an infectious disease and could be transmitted by inoculation. Cohnheim, in 1877, confirmed these observations, and this led many to search for the bacillus. Baumgarten first discovered the bacillus, but Koch, in 1882, first fully established the identity of the organism, and made successful cultures. In 1866 Rindfleisch described "vibrios" that he found in infectious wounds, and Recklinghausen and Waldeyer record a similar discovery in pyemia. It must be borne in mind that micro-organisms were called by different names at different times. They were called "monads," "vibrios," "animalcule," "infusoria," "schizomyccets," microbes, etc. These micro-organisms were regarded as animals until 1852, when Perty demonstrated that they belonged to the vegetable kingdom. In 1881 Laveran discovered the plasmodium malariae, and Ogston and Rosenbaum discovered pyogenic organisms. Israel and Ponifick, in 1882, first discovered the parasite, or bacillus, of actinomycosis. During this same year Koch identified the micro-organisms of malignant edema, and Friedlander, in 1883, discovered the bacillus of pneumonia. Loeffler and Schultz discovered the specific germ of glanders—the bacillus mallei—and in 1884 Koch discovered the specific organisms of Asiatic cholera. Nicolaier, in 1884, discovered the bacillus of tetanus, and recently the specific bacillus of yellow fever—the bacillus icteroides—has been discovered. Klein and others have also recently isolated a streptococcus that is regarded as the cause of scarlet fever. Eberth, Koch, Gaffky and others, demonstrated the fact that typhoid fever is due to a special micro-organism. In 1870 Klebs described how organisms in wounds enter the circulation, and later Oertel, Klebs, Eberth and others, established the constant presence of bacteria in diphtheritic deposits. Martin, in 1892, describes three forms of the Klebs-Loeffler bacillus—the long, medium, and short—and showed that one or more of these are found with the streptococcus and other germs, in every case of diphtheria. Much was done by Latour, Schwann, Pollender, Davaine, Heme, Oertel, Pasteur, Tyndall, Klebs, Lister, Koch, and other close observers, to firmly establish the relation of micro-organisms to disease.

(To be continued.)

NAPLES is planning for an international antituberculosis congress and a national exhibition of hygienic appliances next spring.

Correspondence.

A Philippine Evil.

PARIS, FRANCE, July 20, 1899.

To the Editor.—The lay as well as the medical public already recognizes that the torrid heat and drenching rains of a tropical climate are more to be dreaded by the American pacificator, than its hostile and treacherous mongrel population, but the non-professional community does not understand that which even the medical fraternity at home is slow to declare—a far greater evil than even these menaces the youthful soldiers, and through them, when they return, the people of our own land with whom they come in contact. Among the harpies, whose nests are in the East Indies and countries bordering the China Sea, there is none more ravenous and destructive than the lues venerea, whose victims are first the young and vigorous males of the race, and through them, those whom they infect, these remotely to poison others.

No amount of religious instruction or moral suasion, except in a few instances, has been found effective in deterring the youth subjected to the allurements of the facile women of this part of the world. Themselves ignorant, indolent, careless, and unclean, as well as amatory, they become the ready propagators of venereal diseases, which, perhaps from climatic influences, here assume their most virulent form. The writer's own professional experience in these regions caused him to look for syphilis underlying almost every ailment, barring accidents alone, that came under his cognizance.

The British medical officers, from the earliest occupancy of the Indian peninsula, proclaimed this danger, and the medical authorities, year after year, pointed to the statistics, which, moreover, only incompletely exposed the extent of this terrible scourge. Finally, parliament passed the "Contagious Disease Acts," the beneficial effects of which were soon apparent throughout the military and naval service of Great Britain. Notwithstanding this, the cry that the government was fostering vice was raised by a set of narrow-minded religionists, which resulted in the repeal of these acts and the immediate increase and spread of venereal diseases and their sequelae in the British army and home. Japan and the French Asiatic colonies alone examine their public women and sequester those found diseased, in Lock hospitals. Among the Chinese, Malayan and hybrid Spanish population, with whom our troops come in contact, these diseases run rife. When passion impels, principles are forgotten, precepts are ignored, and prudence ought to be inculcated. The examination of women who ply the trade of prostitution can be conducted without even a quasi-recognition of it, at least not greater than its tolerance by the authorities, which is of itself a tantamount recognition, since to assume its non-existence is only a hypocritical pretense of ignorance.

Unfortunately, the reckless exposure of the willful, sinful soldier and sailor does not end with their own infection. With equal recklessness and unconcern, they either deliberately communicate their maladies under the traditional belief that they can thereby rid themselves of them, or unconsciously infect innocent women and children, or even men, who use the drinking vessels, table appointments, toilet articles, or utensils which they have soiled by the touch of their lips or hands. The most pernicious case of syphilis I have seen in recent years occurred in an innocent person, who used a comb belonging to an unsuspected syphilitic, the victim not recognizing the nature of the disease until it had progressed so far that cutaneous syphilides were developed.

It is of moment, therefore, to sanitary and medical men to recognize the danger from the importation of those same venereal maladies, which are invalidating an immense proportion of the British Indian troops. If it be impracticable to require the compulsory examination of enlisted men, prior to their com-

plaint of disability, it is, nevertheless, urgent and necessary to institute such examinations, before the men or officer is mustered out of service on return home. Precise figures can not be given of the proportion of such troops so infected, but the number is far greater than supposed, and as every single case becomes a focus of dissemination, its discovery and suppression are of far-reaching sanitary importance. Chaplains may exhort fervently and eloquently—though in fact they avoid the subject—without moving the sinner, who conceals his sinning, but the medical officer who positively says "Thou art the man," serves the cause of God and righteousness to far better effect by secluding the—in it may be innocent—victim from possible, if not certain, contamination, or other innocents among women and children. If syphilis is comparatively infrequent in late years, in the United States, it is because the keepers of brothels recognize the pecuniary advantage of protecting their inmates by instructing them in preliminary inspection of their visitors, and by placing them at once under medical care if, despite their crude precautions, they become infected. There is no such safeguard among the loose females of the Philippines and adjacent groups, whose animal instincts are under no restraint, and who, themselves often in the first place victims of unscrupulous beastly men, scatter their disease far and wide. Were sinners the only sufferers, some reason might be held by those whose own righteousness entitles them to stone these profligates, but since we know that the mucous patch and eczematous vesicle are no respectors of persons, and that the sure and guileless may be innocently defiled, it becomes a solemn duty to extinguish the spark which may lead to such ruin. Hence, it is to be hoped that the surgeons-general of the army and navy will require satisfactory evidence of absence of venereal disease before authorizing the discharge of any soldier, sailor and marine from the national services. The economic consideration concerned in the protection of the pension list from future applications actually due to antecedent venereal disease is an additional reason for this rigid scrutiny.

A. L. G.

Ventrosuspension of Uterus.

HILLSBORO, N. D., Aug. 8, 1899.

To the Editor.—In connection with the recommendation of Dr. J. Wesley Bovee, to utilize a bundle of the rectus for ventrosuspension of the uterus, I wish to draw your attention to the successful performance and result of this idea in a case operated on by me in 1896, reported to the last meeting of the North Dakota State Medical Society and printed in the *Northwestern Lancet* for June 15, 1899. This patient was well one year after. I have endeavored to get the subsequent history as to conceptions, labors, etc., but have not yet succeeded.

Yours very truly,

THOR MOELLER, M.D.

[All the mention we find in the paper referred to is contained in the following very brief report of a case:

"Case 15.—Mrs. S., March 19, 1896. Ventrosuspension of the uterus by a bundle of the rectus muscle and fascia for retroflexion. Discharged in three weeks, was well a year after."

EDITOR.]

Unique (?) Case.

BURLINGTON, IOWA, Aug. 5, 1899.

To the Editor.—Country doctors sometimes see unique cases, and I should like to report the following as having been interesting, at least to me:

Early in May, of this year, I was consulted by Miss W. J., from a neighboring town, for a pathologic condition variously estimated as calculus of the liver, kidneys or bladder. I discovered cystic ovaries, and pyosalpinx of the right Fallopian tube, and advised removal. On account of severe pain, she readily consented, and the following day, after curettage, I removed degenerated tubes, broad ligaments, cystic ovaries,

subserous myoma with appendix vermiformis attached thereto, by adhesive inflammation; rapid and uneventful recovery,

Yours,
C. E. BARNES, M.D.

A. M. A. Week Clinics.

COLUMBUS, OHIO, Aug. 5, 1899.

To the Editor.—During the week of the meeting of the ASSOCIATION in Columbus, I made a number of private abdominal sections. Although there were no public clinics, all the operations were witnessed by numbers of my surgical colleagues who had honored me by asking to see me work. Several of them requested to be informed of the results of the operations, but as I am unable to keep a record of my visitors I have felt that the only way to reach them would be by a note to the JOURNAL.

The abdominal sections were twelve in number, ten of the cases being operated on at the Protestant Hospital and two at St. Anthony. I am happy to state that in all the cases recovery was absolutely uneventful and the patients all left the hospital promptly and in good condition. Very respectfully,

J. F. BALDWIN, M.D.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Annals of Surgery, August.

- 1.—*Two Cases of Traumatic Rupture of Colon, with Some Remarks on Cases of Rupture of Intestine Treated in Wards of St. Thomas' Hospital, London, between the Years 1889 and 1898, Inclusive. George Henry Makins.
- 2.—*Treatment of Injuries of Spinal Cord. Percival R. Bolton.
- 3.—*Observations on Detection of Small Renal Calculi by Roentgen Rays. Robert Abbe.
- 4.—Observations on Nephralgia with Report of Cases Simulating Stone in Kidney Occurring at the Massachusetts General Hospital. Joshua C. Hubbard.
- 5.—Chondrocarcinoma of Testicle. Arnold Caddy.
- 6.—*Anterior Dislocation of Carpal Scaphoid Bone; Congenital Malformation of Clavicle. Alfred King.

Bulletin of the Johns Hopkins Hospital, July.

- 7.—*Present Aspect of Some Vexed Questions Relating to Tuberculosis, with Suggestions for Further Research Work. E. L. Trudeau.
- 8.—*Infusion of Salt Solution combined with a Special Method for Administration of Oxygen Inhalations as a Treatment in Pneumonia. Clement A. Penrose.
- 9.—Note on Pigment Production of Bacillus Procyaneus and Bacillus Fluorescens Liquefaciens. Paul Gerhart Woolley.
- 10.—Experiments Made to Determine Effects of Sugar on Firmament of Some of the Chromogenic Bacteria. Paul Gerhart Woolley.
- 11.—*Chronic Malarial Nephritis, with Report of Case. Charles W. Larned.
- 12.—Case in which the Bacillus Aerogenes Capsulatus was repeatedly Isolated from the Circulation During Life. N. B. Gwyn.

Archives of Otolaryngology (N. Y.), April-June.

- 13.—Contribution to Surgery of Temporal Bone. Robert Sattler.
- 14.—Extensive Laceration of Auricle and Complete Section of External Auditory Canal, with Partial Detachment of Sterno-Cleido-Mastoidens Tendon and Splintering of Tip of Mastoid by Blow from a Brick; Operation for Restoration of Auricle and Canal. Swan M. Burnett.
- 15.—Sarcoma of Frontal and Ethmoidal Sinuses. Swan M. Burnett.
- 16.—Fracture of Malleus and Annulus Tympanicus. Frank Allport.
- 17.—*Operation for Otic Brain Abscess with Special Reference to its Curative Value. F. Bynke.
- 18.—*Intestinal Disturbances Produced by Otitis Media of Infants. Arthur Hartmann.
- 19.—Sarcoma of Middle Ear. L. D. Brose.
- 20.—Contribution to Technique of Perforating the Maxillary Antrum. O. Körner.
- 21.—Action of Sen-Cimate and of Surf-Bathing on Aural Affections, and Hyperplasia of Pharyngeal Tonsil. O. Körner.
- 22.—Two Cases of Otitic Sinus Thrombosis, the One Fatal, the Other Ending in Recovery. Herman Koopp.
- 23.—Magnifier in Otolaryngology. George Boeninghaus.
- 24.—Contributions to Statistics of Dangerous Complications of Suppurative Ear Diseases and of Operations on Mastoid Process. M. Feilmann.
- 25.—Persecution of Mastoid Process. H. Eulenstein.

Journal of Nervous and Mental Diseases (N. Y.), July.

- 26.—*Multiple Cavernous Angioma, Fibro-endothelioma, Osteoma and Hematomatous of Central Nervous System in Case of Secondary Epilepsy. A. P. Ohlmacher.
- 27.—*Retardation of Pain Sense in Locomotor Ataxia. L. J. J. Muskens.
- 28.—*Contribution to Symptomatology of Intercranial Disease. Joseph Fraenkel.

Medicine (Detroit and Chicago), August.

- 29.—*Note on Aural Vertigo (Ménière's Disease) and the Organ of Equilibrium. L. Harrison Mettler.
- 30.—*Practical Points in Diagnosis of Extrapulmonary Coughs. Albert Abrams.
- 31.—*Therapeutics; Past, Present and Future. George F. Butler.
- 32.—Some Clinical Observations on Action of Thermal Waters of Glenwood Springs in Gout and Lithemia. Richard K. MacAlester.
- 33.—Use of Cascara Sagrada in Habitual Constipation. Harold N. Rogers.
- 34.—Resection of Cervical Sympathetic in Treatment of Epilepsy, Basedow's Disease and Glaucoma. Thomas Jennesco.

Medical Standard and No. Am. Practitioner (Chicago), August.

- 35.—Frederick Ruysh, Anatomist. Frank Webster Jay.
- 36.—Technic of Local Anesthesia (Continued). Aime Paul Heinicke.
- 37.—Typhomalarial Fever. G. A. Smith.
- 38.—*Asthma and its Treatment. Henry B. Hitz.
- 39.—*Sanitation of Private Houses. J. F. Pritchard.
- 40.—Science of "Christian Science." H. Gasser.
- 41.—Importance of Thorough Static Insulation. B. Y. Boyd.
- 42.—Treatment of Pneumonia. I. W. Pritchard.
- 43.—The Era of Trusts. George P. Engelhard.
- 44.—Report of Pharmaceutical Committee of Ill. Pharmaceutical Association. C. S. Hallberg.

New Orleans Medical and Surgical Journal, August.

- 45.—The Charity Hospital from 1877 to 1894. W. E. Parker.
- 46.—Address Before Charity Hospital Alumni Association. Beverly Warner.
- 47.—*Experiments with Sanarelli's Anti-Amariyllie Serum in 1898. P. E. Arehland.
- 48.—Case of Gunshot Injury of Spine. S. P. Delaup.
- 49.—*Transposition of Viscera; Report of Case. L. G. LeBeuf.

Brooklyn Medical Journal, August.

- 50.—Report of Two Hepatic Abscesses. E. D. Ferris.
- 51.—*Danger Signals of Pre-embolic State. C. Jewett.
- 52.—Functional Derangements of Ocular Muscles. E. W. Wright.

Buffalo Medical Journal, August.

- 53.—*Christian Science" Methods. Nelson W. Wilson.
- 54.—*Catarhal Deafness. A More Favorable Prognosis. Sargent F. Snow.
- 55.—Study of Pathogenesis of Gout. Mary Clayton.
- 56.—*Slipping of Intra-peritoneal Ligature. R. Stansbury Sutton.

Cleveland (Ohio) Medical Gazette, July.

- 57.—Some of the Lessons of the Late War and their Bearing upon Trained Nursing. Isabel Hampton Robb.
- 58.—*Life Insurance Decision Following Gastro-Enterostomy. N. Stone Scott.
- 59.—Cranial Injuries of Childhood and Their Treatment. E. Merrill Ricketts.

Memphis (Tenn.) Lancet, August.

- 60.—Gunshot Wounds in Civil Practice. W. L. Estes.
- 61.—Enuresis Nocturna in Female. Edwin Kolschler.
- 62.—*Clinical Study of Chorea. Gustav Williams.
- 63.—Atypic Malaria in Children, with Case in Point. Rosa Engelmann.

Illinois Medical Journal (Springfield), August.

- 64.—*Therapeutics; Past, Present and Future. George F. Butler.
- 65.—*Psycho-Physical Culture. W. Xavier Sudduth.
- 66.—*Etiology of Eclampsia. Chas. B. Reed.
- 67.—Treatment of Eclampsia. Joseph B. DeLee.
- 68.—*Complete Prolapsus of an Ovarian Tumor Through the Anus. Operation. Recovery. J. A. Baughman.

Medical Herald (St. Louis, Mo.), July.

- 69.—Relation between Doctor and Dentist. Daniel Morton.
- 70.—Report of Committee on Progress of Obstetrics, Mo. State Medical Ass'n. C. C. Dannaker.
- 71.—Treatment of Gastric and Intestinal Diseases. Johann Landau.
- 72.—The Specialist. W. C. Fulkerson.
- 73.—Treatment of Diabetes. C. H. Wallace.

Occidental Medical Times (San Francisco), July 15.

- 74.—*Malarial Fevers of Sacramento and San Joaquin Valleys. Philip King Brown.
- 75.—Sinus—Thrombosis—Cure without Opening the Sinus. Robert Levy.
- 76.—*Cerebrospinal Meningitis, Three Cases. Death. Autopsy. S. J. Hunkin.

St. Paul Medical Journal, August.

- 77.—Complications and Sequels of Appendicitis. James E. Moore.
- 78.—*Tuberculosis of Breast. Homer Gage.
- 79.—Gummatous Pelvis. Arthur E. Stone.
- 80.—*Gelato-Glycerin Bougies in Treatment of Eriache. George L. Richards.
- 81.—Puerperal Infection. E. W. Moore.
- 82.—Report of Two Cases of Stone Successfully Removed from Ureter. W. J. Mayo.

New England Medical Monthly (Danbury, Conn.), August.

- 83.—*President's Address. Joseph M. Matthews.
- 84.—Asthma and its Treatment. G. A. Gilbert.
- 85.—Infantile scurvy. Thomas W. Harvey.
- 86.—Vertigo. Philip Zenner.
- 87.—Treatment of Gout with Thyroid Extract. Walter U. Kennedy.
- 88.—Xeroform in Army Surgery. Emilio P. Nozueira.

American Medical Compend (Toledo, Ohio), August.

- 89.—Care and Feeding of Infants. Wm. A. Dickey.
- 90.—Rectum and Pelvic Fascia. Byron Robinson.
- 91.—*Memphis (Tenn.) Medical Monthly, August.
- 91.—Surgical Aggressiveness. C. R. Shinault.

- 92.—Some Remarks on Pleurisy with Effusion. Report of Cases. Frank A. Jones.
- 93.—Some Causes of Dysentery. O. S. McCowan.
- 94.—Report of Three Surgical Cases. Appendicitis. Fracture of the Cranium. Intestinal Perforation. J. P. Runyan.
- 95.—Ectopic Gestation. A. J. Johnson.
- 96.—Ergot in Obstetrics. A. J. Jaogoe.
- 97.—Choroiditis Tuberosa, or "Sinners' Nodule," Some Desultory Remarks Thereon. Richmond McKinney.
- 98.—Stop Worrying. Adele E. Shaw.
- 99.—Report of Two Cases of Typhoid Fever. J. T. Norman.
- 100.—Case of Septicæmia Following Abortion, Treated by Venesection, and Infusion of Normal Salt Solution. W. A. Franks and F. Bates.
- 101.—Case of Estivo-Autumnal Malaria with Crescents. Wm. Kraus.
- 102.—Simultaneous Use of Physiologic Salt Solution and Venesection in Puerperal Eclampsia. G. W. Penn.

Journal of Alumni Association of College of Physicians and Surgeons (Baltimore, Md.), April.

- 103.—"Some Smallpox Statistics. John Rührich.
- 104.—Case of Gunshot Wound of Abdomen with Multiple Intestinal Perforations. H. Westphal.
- 105.—Cephalic Version after Beginning of Labor. William S. Gardner.
- 106.—Middlestone Instrumentation in Urethral Diseases. W. L. Chapman.
- 107.—Latent Cancer of Stomach. Julius Freidenwald and A. S. Hotaling.

Iowa Medical Journal (Des Moines), July.

- 108.—"Meckel's Diverticulum Simulating Appendicitis. A. L. Wright.
- 109.—Therapeutic Value of Rest. I. S. Bigelow.
- 110.—Some of the Duties of Physicians as Educators of the Public. Z. Fuller.

Louisville Medical Monthly, July.

- 111.—Epidemic Cerebrospinal Meningitis. J. P. Ferguson.
- 112.—Typhoid Fever. G. W. Baylor.
- 113.—Euresis. L. Sexton.

Texas Medical News (Austin), July.

- 114.—Diphtheria. J. C. Shav.
- 115.—"President's Address. Jos. M. Mathews.

North Carolina Medical Journal (Charlotte), July 20.

- 116.—"Treatment of General Suppurative Peritonitis. Stuart McGuire.
- 117.—Notes on Some Recent Eye Cases in Railway Practice. Daubar Roy.
- 118.—Report of Case of Foreign Body in Esophagus. John H. Gibbon.

Columbus (Ohio) Medical Journal, July 20.

- 119.—Iris in Operation of Cataract Extraction. J. E. Brown.
- 120.—Ophthalmic Contributions to Pediatrics. Robert Sattler.

Medical Fortnightly (St. Louis, Mo.), August 1.

- 121.—Observations on Use of Midwifery Forceps and on Some Modifications in its Mechanism. Thos. M. Maddie.
- 122.—Modern Use of Synthetics. R. W. Wilcox.
- 123.—An Abnormal Sexual Condition. H. C. Jones.

New York Medical Journal, August 12.

- 125.—"Why Some Severe Cases of Appendicitis End in Recovery without Operation. J. H. Carstensen.
- 126.—The High Aims of the Physician. Beverly Robinson.
- 127.—Effects of Influenza on the Eyes. Henry S. Oppenheimer.
- 128.—"Hemoglobinuric Fever. Edward E. Field.

- 129.—Pathology and Etiology of Rheumatism, with Some Remarks on Treatment. Cuvier K. Marshall.
- 130.—"Treatment of Forty-three Cases of Typhoid Fever with no Deaths, and with Complications in but one Case. Edward C. Seufert.

- 131.—Some Remarks on Use of Suprarenal Capsule in Nose and Throat. J. Clarence Sharp.

Medical Record (N. Y.), August 12.

- 132.—"An Abdomino-Sacro Method for Removal of Rectal Carcinoma. H. Otto Sommer.
- 133.—"Acute Bronchitis—A Symptom; the Treatment from an Etiological Standpoint. Thomas F. Kelly.
- 134.—"Case of Asexualism. Harold Brooks.
- 135.—"Epiphora, or Watery Eye; its Complications, Etiology and Management. J. E. Woodward.
- 136.—"Operation for Celiotomy. Robert Bancker Talbot.
- 137.—"Typhoid Mortality in Twenty-four American Cities, 1889-1898. F. S. Crane.
- 138.—"Carbolic Acid Poisoning. J. D. Buchanan.
- 139.—"Case of Crescent Malaria Occurring in Boy of 5 years, always recid in New York. Henry Heiman.
- 140.—"Treatment of Pulmonary Edema of Cardioneurotic Origin. D. J. Hamburg.

Medical Review (St. Louis, Mo.), August 12.

- 141.—"Report on Case of Hematomyelia. Thos. H. Romelser.
- 142.—"President's Address before No. Missouri Medical Association. J. D. Brummell.

Philadelphia Medical Journal, August 12.

- 143.—"Medical Services of Army and Navy. Alexander Ogston.
- 144.—"Sketch of Century's Progress in Medicine and Surgery. J. Ward Cousins.
- 145.—"Recent Advances in Physiology. J. J. Charles.
- 146.—"Etiology of Malarial Fever. George Thib.
- 147.—"Case of Acute Dilatation of Stomach. Theodore B. Appel.
- 148.—"Note on Case of Nervous Erection Studied by Skiagrams. Albert Abrams.
- 149.—"Rectal Carcinoma with Subsequent Colotomy. B. Merrill Ricketts.
- 150.—"To Remove Blood from Clothing. J. T. Rugh.

Cincinnati Lancet-Clinic, August 12.

- 151.—"New Remedies. Geo. J. Monroe.

Medical News (N. Y.), August 12.

- 132.—"Some Observations and Controversial Remarks on the Specific Cause of Yellow Fever. G. Sanarelli.
 - 153.—"Tuberculosis of Kidney as Indication for Nephrotomy. Edward Reynolds.
 - 154.—"Retention of Testicles with Report of Cases. L. L. Hill.
 - 155.—"Choice of Drugs to Dilate the Pupil. Edward Jackson.
- Maryland Medical Journal (Baltimore), August 12.**
- 156.—"Special Schools for Special Children. Samuel J. Fort.
- Boston Medical and Surgical Journal, August 10.**
- 157.—"The Proteoids of the Urine. William B. Hills.
 - 158.—"Osteo-Arthritis of Spine: Spondylitis Deformans. Joel E. Goldthwait.
 - 159.—"Operations in Treatment of Palmar Abscess. W. A. Brooks.
 - 160.—"Proliminary Notes on Prognosis of Nephritis. Richard C. Cabot and F. W. White.

AMERICAN.

1. Rupture of Colon.—Two cases of traumatic rupture of the colon have within three years come under the observation of Makins. He reports both cases and discusses the symptoms and treatment of intestinal rupture generally. As regards causation, he finds that the one factor of importance is the severity of the violence and its localized action. The small intestine is most liable to injury, owing to its more exposed situation. He thinks that it may be affirmed that blows over the abdomen above the navel are not very likely to cause intestinal rupture unless the violence is directed so as to press the gut against the spinal cord. In such a case injury to the mesentery or omentum is nearly as likely as one of the bowel itself. The analysis of the symptoms is as follows: shock was very variable, in most cases comparatively slight; abdominal pain was constant, always continuous, and often not severe; rigidity of the abdominal wall was constant and not pathognomonic; abdominal distension was rare in the early stages and only occurs with the advent of peritoneal septicæmia. Tenderness may be regarded as a constant sign, though it is not always reported. Percussion signs are variable, but the data are imperfect in regard to them in the cases analyzed. In the two varieties of local resonance, dullness and tympanites, he regards the least extensive one as of the most importance. The importance of dullness depends largely upon its fixity. The pulse shows a steady tendency to rise in frequency and lose in strength. The temperature may be low in the beginning, but subsequently rises. Tendency to defecation or passage of blood is of importance. The diagnosis must in most cases be made by exclusion of injury to the solid viscera or the bladder which have their own special signs. The history as to the location and manner of the injury is also of value. Localized tenderness, dullness, etc., with shock, pain and vomiting are of importance, and such signs especially characteristic of intestinal injury, such as cellular emphysema localizing the injury to the uncovered portions of the duodenum or colon, or possibly free gas in the peritoneal cavity may be present. Any of these signs with a rising pulse above 100 will be indications for abdominal exploration. A definite diagnosis from rupture of the mesentery is often impossible, and the conditions may coexist. One sign, however, is of definite value in localizing injury to the mesentery, namely, the presence of a large quantity of free blood in the peritoneal cavity. The prognosis has been considered bad, but of the twenty cases analyzed, three recovered. Fifteen were operated on, including the recovered cases. The average duration of life in the fatal cases amounted to a little over fifty-nine hours, but excluding other cases which lived four, five, six and nine days, respectively, the average duration of the remainder was just forty-eight hours. Operation can not be too early if the injury is diagnosed or suspected, and the best site for incision is in the median line between the umbilicus and pubes to one or the other side of the linea alba. In all moderate rents the Lembert suture is to be preferred. The peritoneum should be cleaned by a preliminary dry sponging of the affected area followed by irrigation and flushing. Drainage should be avoided if possible. Rectal feeding should be relied on for the first twenty-four hours, after this, in the absence of vomiting, fluid nourishment may be given by the mouth. The paper ends with the brief details of the twenty cases analyzed.

2. Injury of the Spinal Cord.—Bolton's conclusions are as follows: 1. Extradural hemorrhage does not give rise to cord lesions or symptoms, and requires no treatment. 2. Total

Lesions of the cord are irremediable, because the cells and fibers of the entire thickness of the cord are destroyed, are never regenerated, and are replaced by cicatricial tissue. The lesion is thus permanent and needs no treatment. 3. In hematomyelia the clot is absorbed; its site persists as a cavity or is filled by newly formed tissue; irregularities of circulation in the surrounding portions of the cord adjust themselves. There may be great amelioration of the symptoms. There is, therefore, no therapeutic indication, and no remedial treatment is possible.

4. In partial contusion of the cord the lesion results in permanent destruction of the cells and fibers; disturbances of circulation adjust themselves. Repair is accomplished by cicatricial tissue. No treatment is available. 5. In open injuries of the cord there is destruction of cells and fibers and disturbances of the circulation. In addition, infection may occur or a foreign body may be introduced and left in or lodged against the cord, and by its continued presence produce great disturbance of circulation and consequent extensive degeneration and necrosis of cells and fibers. Repair occurs by cicatricial tissue as before. But here active operative interference is indicated to remove foreign bodies, to facilitate disinfection, to prevent more extensive necrosis, and to facilitate drainage.

3. **Detection of Renal Calculi by X-Rays.**—In this paper Abbe has collected 27 cases, including two personal observations in which operation verified the diagnosis of renal calculi by radiographs. He believes that in most people of spare habits, and in young subjects, the stone in the kidney can be found with reasonable certainty. He also thinks that while the technical work of producing a successful radiograph is not yet thoroughly studied out, it seems probable that a quick penetrating focus tube with very short exposure would show stones that would be lost in long exposures.

6. **Congenital Malformation of Clavicle.**—Besides a case of anterior dislocation of the carpal scaphoid bone, King reports a case of a woman who had fractured her right collarbone in childhood, resulting in nonunion through neglect. She had had three children. The first died in infancy, the condition of its clavicle unnoticed. The other two have a congenital ununited apparent fracture of the collar bone on the same side, with the same appearance as that of their mother. There were no accidents during pregnancy, nor to the children, and both labors were natural.

7. **Tuberculosis.**—Trudeau calls attention to a number of yet unsettled questions in regard to tuberculosis, its etiology, the wide variation in the manifestations of the disease, what constitutes virulence in the infecting bacilli, how do they grow out of the body, what is predisposition? As regards its pathology, the problems here suggested are chemical changes in the digestive secretions, condition of the blood, pathologic changes causing cure in peritoneal tuberculosis after laparotomy, the factors determining local immunity, the meaning of the presence of tubercle bacilli in the different secretions, of the production of beading of the tubercle bacilli, within and outside of the body, its relation to spore formation and to the nature of the bacillus itself as regards prophylaxis; we need still further study of the sources of infection, and he mentions a number of questions as regards bacteriology and antitoxins. As regards diagnosis, the mechanism of the tuberculin reaction requires study, and the use of X-rays is recommended, and as to treatment the chemical inoculation, antitoxin and immunizing are questions as yet in many points unanswered. He partially reports his own experiments on guinea-pigs, as yet incomplete.

8. **Salt Solution Infusions and Oxygen Inhalations in Pneumonia.**—Penrose describes the method used in the Johns Hopkins Hospital for infusion of normal salt solution in pneumonia, and reports two cases, also a method of giving oxygen by means of a funnel held by a framework, the oxygen having passed through a hot inhalation mixture. He believes that infusion of salt solution increases the circulation of the lungs and their ability to take in oxygen.

11. **Chronic Malarial Nephritis.**—The two points of special interest in the case reported by Larned are, he states, the rarity of the malarial type, the quartan, and the associated nephritis, which was almost certainly dependent on this or a previous malarial infection. He says: The conclusions to be drawn from this and other cases already on record, especially Thayer's and those of Kelsch and Kiener, are: 1. Certainly

in some localities malarial fever should be given a prominent position in the etiology of chronic as well as acute nephritis. 2. In all cases of malarial fever the urine should be carefully watched. 3. A blood examination should be made in all cases of nephritis occurring in those who have visited or lived in a malarial district, as it often happens that the severe grade of nephritis resulting may entirely mask the clinical picture of malarial fever.

17. **Otitic Brain Abscess.**—Ropke's paper discusses the subject of brain abscess from ear disease, quite thoroughly, noticing the literature in detail. After describing the technic of the operation and discussing the question as to whether brain abscess can disappear spontaneously, which he thinks can be admitted in rare cases, he gives the results of 141 cases operated on, and which he has been able to collect and analyze in detail. Of the 141 operated cases, there were 57 permanent cures or 40.4 per cent., a result which refutes the very unfavorable estimate of some authors as to the curability of this condition. Of the 26 cases following acute otitis, 43.2 per cent. were cured, and we have very nearly the same percentage—43.1 per cent.—of the 109 after chronic otitis. The operation, therefore, has about the same prognosis in either case. The symptoms which give the indications for the operation do not help us very much as regards prognosis. Cases with normal or subnormal temperature are frequently more favorable than those which run a violent course, as the virulence of the infection seems to be less and complications are less likely to occur. The presence of focal symptoms before operation is of no value in estimating the future course. The size and site of the abscess are important. The small abscesses situated near the surface of the brain naturally afford a better prognosis than the larger and deeper ones. It is especially important to note whether the abscess contains pathogenic germs. The color and odor of the pus give no clue as to its virulence. When the abscess lacks lining membrane, and is irregular in its outline, it is more serious, and the more brain tissue disturbed during the operation, the worse. In his 141 cases, 81 were operated on through the squama, with 38.3 per cent. recovered; 43 operated through the tegmen, with 40.2 per cent. cures; in 7, where the combined opening was made through both, 5 or 71.1 per cent. recovered.

18. **Intestinal Disturbances Produced by Otitis Media.**—Hartmann, after noticing the cases reported by others, deduces the following conclusions: 1. Acute febrile otitis causes a diminution in weight, or arrest of increase of weight. 2. Otitis accompanied by grave septic symptoms probably causes diarrhea. 3. An acute febrile otitis occurring during intestinal diseases may act on the general constitution, and by reducing the vitality, aggravate the intestinal affections or retard recovery. 4. Whether there is a direct relation between atrophy and otitis, must be reserved for further observations. He reports nine cases. The latter part of his paper is devoted to the diagnosis of infantile otitis.

26. **Multiple Cavernous Angioma.**—Ohlmacher's article describes, at length, a case of multiple angiomatous tumors of the brain and spinal cord, and a fibro-endothelioma of the dura. The latter gave rise to epilepsy, the spinal tumor, causing transverse destruction of the spinal cord, and ending in an extensive hemorrhage, revealed on autopsy. The pathology is very fully worked out and discussed.

27. **Retardation of Pain Sense in Tabes.**—Musken's has noted a special retardation of pain sense on the borders of analgesic areas in tabes, when the sense of touch is still intact. This border varies much in width, from a millimeter or less to some decimeters; it is widest as a rule in the lower extremities. He thinks this special retardation of pain sense is an important and early symptom of the disease, probably always preceding the analgesia, and probably of differential diagnostic value.

28. **Symptomatology of Intracranial Disease.**—Fraenkel's paper is a painstaking analysis of two cases, one probably of specific thalamic gumma, and the other diagnosed as tubercular disease involving the cerebellar and pontine region. This patient died in uræmic coma. From a careful analysis of the symptoms of the first case, emotional spasticity, mental hebetude, pupillary and ocular symptoms, abolition of the psychic reflex of the seventh nerve, mild and slowly progressing hemiplegia with inconstant spasticity, muscular atrophy and in-

co-ordination, depression of all vegetative reflexes, with absence of hemianopia and sensory disturbances in the opposite side of the body, he concludes that the tumor was in the anterior portion of the thalamus. The autopsy findings in the cranium in the second case were not very decisive, but the suggestion of a tubercular basilar meningitis existing to some extent was rather confirmed than otherwise.

29. Aural Vertigo.—The point made in Mettler's paper is that the nucleus of Deiter is probably the true center of equilibrium, that the sense of equilibrium is essentially a complicated sensory motor phenomenon, and the semicircular canals alone are not especially its organs. He aims to show, by his anatomic and physiologic discussion of the subject, that vertigo may be produced by irritation of any of the ramifications of the apparatus of equilibration, in the eye or stomach for example, as readily as in the ear.

30. Extrapulmonary Coughs.—Noticing first the difficulty of the problem of always giving a careful etiology of a cough, Abrams mentions certain methods of diagnosis, such as the use of iodid of potash, bromoform, etc., and calls attention to the influence of irritation occurring from the skin, ear, nose, nasopharynx, the pharynx, the tonsils, the uvula, and lingual tonsil, as especially producing these symptoms. It may, however, be aroused from the teeth, esophagus, liver, spleen and pleura. The so-called stomach cough is also largely corroborated by clinical observation.

31.—See ¶ 64, below.

38. Asthma.—Hitz suggests that one of the commonest causes of asthma is a reflex from the nasal mucosa, and he states that in every case that has come under his observation immediate relief has been afforded by the direct application on a probe of 10 per cent. solution of cocain to the points of contact of tumors and soft swellings with the septum—a diagnostic measure to which there is no superior. In the vast majority of asthmatics he claims that swellings or points of pressure and irritation appear to be in the region of the middle turbinal and usually greatest in its posterior aspects. He reports seven cases illustrating his views and points out removal of the growths as treatment.

39. Sanitation of Private Houses.—Pritchard calls attention to the sanitary shortcomings in homes; the unhealthy, many-layered wall paper, the carved and cracked or ill joined woodwork, hiding germs, and the defects in ventilation in old houses. He would have painted walls, well-seasoned woodwork with all cracks and holes puttied up, and painted floors laid close and not requiring carpeting, furniture without upholstering that may gather dirt, germs, etc.

47. Sanarelli's Serum in Yellow Fever.—Archinard here reports the results of a series of experiments made on yellow fever patients with Sanarelli's serum, received from Monte Video. The ten cases thus experimented on are recorded in detail. Archinard concludes that this agent has, in his hands, shown no curative power whatever, none of the important and dangerous symptoms having been in any way mitigated or prevented by its administration. In justice to Sanarelli it must be said that he has never claimed his serum curative in severe cases, and most of these were severe. It is not always easy to use it early, and, judging by experience, the great majority of cases are benign and get well under any treatment. Necessarily serum employed at random in these cases would be at great advantage. Archinard is skeptical also in regard to any immunizing property of the serum, judging from his experiments on animals. In the human species he has had no experience.

49.—See abstract in JOURNAL, July 8, p. 102.

51. Danger Signals of Pre-eclamptic State.—Jewett assuming that eclampsia is due to toxemia, adopts the view of Hughes and Carter that it is probable that in addition to the pathogenic poison of uremia there are under certain conditions other secondary ones active in the production of the toxemia; that the poison producing uremia will also produce nephritis, and that it is possible to have uremia without previously existing kidney lesions. He notices, for the sake of brevity, only a few of the leading urinary signs to be noticed as danger signals. The first of these, albuminuria, is especially valuable on account of its ease of detection. Unfortunately, however, too many physicians trust to it alone, and are not sufficiently per-

sistent and frequent in their testing. He believes that it is more frequently found early in the pre-eclamptic state than is commonly recognized. It is a fact, however, that cases of eclampsia occur with no kidney lesions found at the autopsy. How long and to what extent albuminuria may have existed in such is a question he does not attempt to answer. The second sign noticed is the urea, which is especially valuable on account of its ease of determination, but on it too implicit reliance should not be placed, as it may have quite a wide range in normal individuals. These cases, however, are exceptions, and noticeable diminution of this substance in the urine should excite suspicion. A most important and too frequently neglected element in the prognosis as relates to the pre-eclamptic condition is the daily quantity of the urine. It is especially useful, as it is a matter that can be trusted largely to the patient's observation. With necessary precautions, close observation of this element has greater value than urea determination. None of the foregoing should be alone depended on. All must be watched. The urine being normal in amount and character, true puerperal eclampsia need scarcely be feared, but departure from the normal in any of these points demands special vigilance.

53. "Christian Science" Methods.—Dr. Wilson's article is an interesting account of certain "Christian Science" methods, with extensive quotations from a report of a *New York World* reporter who took a course in "Christian Science" in order to be able to enlighten the public in regard to it.

54. Catarrhal Deafness.—The object of Snow's article is to point out that many cases of catarrhal deafness are considered incurable and unnecessarily neglected. He thinks that in most cases we will find a cause which is removable, and that the disorder is a preventable one. His plan in chronic catarrhal inflammation is to see that all removable causes are cared for, and to make a new test of the hearing and then begin with vapor of camphor and iodine in interrupted jets through the Eustachian catheter. It serves the purpose of toning up relaxed or atrophied membranes, increasing ossicular mobility and absorbing inflammatory products. This treatment should be repeated according to the case, every day or twice a week until the sensitiveness of the tubal membranes is removed, relaxed blood-vessels toned up and improvement in hearing ceases. Active treatment may then be discontinued, but the patient is instructed to report on every new sign of deafness. These periods of rest may be regularly increased until three to six months elapse between the treatments. Under this plan he has obtained very satisfactory results in cases where an unfavorable opinion has been given.

56. Slipping of Intrapertoneal Ligature.—Noting the frequency of the unfortunate accident of slipping of the intraperitoneal ligature, Sutton calls attention to the surgical practice of tying en masse, and he thinks it is better surgery to tie the ovarian artery at the big infundibulum pelvium, and the uterine below the cornual extremity of the Fallopian tube, and to strip out the tube and ovary entirely from the ligamentum latum, closing the open edge of the latter with a catgut suture. With this method the conical retracting stump is avoided, with all tension, and the removal of the ovaries and tubes is more complete. In cases where it is not possible to safely secure vessels with a ligature, Doyen's crusher will serve a useful purpose or, where it is desirable, the application of a pair of heavy clamp forceps will prepare a bed for the ligature. It will hold better in the groove of crushed tissue than made.

58. Insurance Decision Following Gastro-Enterostomy.—A case reported by Scott is of interest as showing the decision of a life insurance company in regard to a case of gastro-enterostomy. The patient, a man, 45 years of age, was operated on for non-malignant pyloric stenosis. Simple gastro-enterostomy between the anterior stomach wall and the jejunum was performed, with the result of perfect recovery. The patient's life insurance being nearly run out, and re-examination required, the doctor wrote to the New York Life Insurance Company and stated the nature of the case and the details of the operation, and received in reply the statement that they would admit the patient to examination though only one year and a half had elapsed after operation.

62. Clinical Study of Chorea.—Williams, after noticing

the accepted views and facts in regard to chorea, reports four cases as illustrating the different causes producing the disease. In the first case eye strain seems to have produced it in a boy 11 years old; the second case was apparently caused by fright in a child; the third was a girl 9 years old, with psychopathic family history, she had a fall, injuring her head, and fracture of the skull was diagnosed, but operation was refused. Epilepsy and chorea both followed, the choreic movements being confined exclusively to the left hand and arm. Trephining was performed over the scar on the skull and a spicule of bone pressing down on the ascending parietal lobe of the right hemisphere, $1\frac{1}{2}$ inches below the upper margin of the hemisphere, was removed. Recovery was uninterrupted and both disorders disappeared for as long as the child was under observation. The last case appeared to be due to reflex irritation from adenoids, and on their removal the chorea ceased. Williams emphasizes the importance of close examination as to the causal factors in each individual case.

64.—See abstract in JOURNAL, May 27, p. 1171; also ¶ 31, above.

66.—This paper appeared in full in the JOURNAL of June 24, p. 1420; see also, *Ibid*, May 27, p. 1173.

68.—See abstract in JOURNAL, June 3, p. 1256.

74.—*Ibid*, May 13, p. 1053.

78. **Tuberculosis of Breast.**—Gage reports a case of tuberculosis of the breast in a woman 43 years old, with microscopic examination, and discusses the subject of this tubercular manifestation. Up to date there have been reported 55 cases, besides his. Out of the 56, but 4 were males and more than half of the women had borne children. He thinks, therefore, that functional activity was in some measure a predisposing cause. In 20 per cent. there was a tubercular family history. As regards the mode of introduction of the germ, he believes that it is through the circulation, finding a point of least resistance in the breast. The clinical history is rather vague, there may be pain or there may be the want of it. Constitutional disturbances are slight, and the progress usually slow. The diagnosis must often be left until the breast has been removed, in accordance with the general rule that any-growth in the breast associated with enlarged lymphatics requires excision. The treatment is surgical and the removal should be radical.

80. **Gelato-Glycerin Bougies in Earache.**—Richards calls attention to the value of gelato-glycerin bougies in the treatment of this affection, as they can be inserted in the ear without difficulty, by simply washing off the lycopodium powder, when they slip in readily and dissolve so that the anodyne is brought into immediate contact with the inflamed surface. He gives the following formula, which can be made by any druggist:

Acid carbolic.....	m. 7
Fl. ext. opium.....	m. 6
Cocaine.....	gr. 3
Atropin sulph.....	gr. 3
Water.....	m. 52
Gelatin.....	gr. 18
Cocain.....	gr. 3
Glycerin.....	gr. 158

M. To make 42 bougies.

After making they are covered with lycopodium powder and dispensed in a bottle, as they are somewhat hygroscopic. He believes that if used early enough they will in many cases prevent the need of paracentesis.

83.—This address appeared in the JOURNAL of June 10, p. 1273.

103. **Some Smallpox Statistics.**—Ruhrah reports the statistics of the Quarantine Hospital at Baltimore as regards smallpox. There were 1106 cases; 441 of these had been vaccinated at some previous period, 645 had never been vaccinated, and 20 had been, but unsuccessfully. Of the 441 cases there were 378 recoveries, 63 deaths, and a mortality rate of 14.3 per cent. Of the 645 unvaccinated, there were 330 recoveries, 315 deaths, and a mortality percentage of 48.8. Of the 20 cases of unsuccessful vaccinations, there were 6 deaths and 14 recoveries, and the mortality rate 30 per cent. The total mortality was 34.7 per cent. In 105 cases the variety of the disease was stated; 55 of these cases had been vaccinated, 49 recovered; 43 discrete, 6 confluent; 6 died, discrete 1, confluent 5. Of the unvaccinated cases, 50 in number, 27 recovered;

15 discrete, 12 confluent; 23 died, discrete none, confluent 21, hemorrhagic 2. These figures show that in those who had been vaccinated, how long before not stated, the percentage of recovered was greater and the disease in most of the cases discrete. All but one of the fatal cases were confluent, and that one died of complicating pneumonia. In the unvaccinated most of the cases were confluent.

106. **Meddlesome Instrumentation in Urethral Diseases.**—The unsurgical and disastrous results of meddlesome instrumentation in urethral disorders is the theme of Champion's article. He condemns the use of small steel instruments below 18 or 20 French. Steel sounds for exploring the urethra should be abandoned. If the urethra is sensitive, or there is a discharge from the canal, first treat by irrigation until the sensitive condition has disappeared and the discharge is controlled, before using instruments. Instruments are passed too often in treating stricture, and he states that as a rule it is bad surgery, in treating stricture by dilatation, to reintroduce an instrument—unless it be filiform—before the lapse of at least seventy-two hours, and more rapid progress will be made by waiting ninety-six hours, often even seven to eight days. The practice of doing internal urethrotomy in the office and allowing the patient to go home can not be too strongly condemned. It is a dangerous operation and the patient should be kept in bed for at least five days, better a week. In his opinion, after internal urethrotomy instruments are too frequently passed. Every fourth, fifth or sixth day will give as good results and less pain than the shorter intervals. He emphasizes the importance of irrigating before surgical operation on the urethral canal, whether it be mere passage of the sound or an internal urethrotomy. If this is done there will be fewer cases of urethral fever and less irritation and inflammation. Lately he has used hydrostatic irrigation in the treatment of inflammatory conditions of the urethra and bladder and finds it better than any other method. The container, which holds a prescribed quantity of the fluid to be used, is raised eight to nine feet from the floor. The anterior urethra is first thoroughly washed out and the glass nozzle employed is placed firmly against the meatus and the patient told to breathe deeply or try to urinate and the fluid flows back into the bladder. When the bladder is full, he is allowed to pass it and it is again refilled. The advantage of this is that it distends the urethra completely, and forces the pus and germs from the glands and follicles.

108. **Diverticulitis.**—Wright reports a case of inflammation of Meckel's diverticulum simulating appendicitis, and operated on with success, by excising about three inches of the ileum with the diverticulum. This was done on account of the extreme thinness of the intestinal walls at this point, and from this he concludes there was probably a traumatic origin of the diverticulum. A Murphy's button was used and passed the nineteenth day. The clinical symptoms were entirely those of appendicitis, but the true appendix was found lacking.

115.—See ¶ 83, above.

116. **General Suppurative Peritonitis.**—McGuire reports his method in the treatment of general suppurative peritonitis. He calls attention to the importance of early diagnosis and operation, and the necessity of multiple incisions for thorough work. Primary incision should be made at the point giving the shortest and most direct route to the focus of infection. The secondary ones should be usually three in number, one opposite, below or above, the primary incision, and the other two in the posterior lumbar region. In females an opening through the Douglas sac will be of service. These secondary incisions should be large enough to permit the easy insertion and passage of gauze drains, but not large enough to cause danger of bowel protrusion in coughing, or vomiting. To cleanse the abdomen thoroughly it should be emptied, the intestines should be drawn out through the incision, wrapped in the hot gauze towels and laid to one side. The cavity should then be wiped out with moist gauze compresses and the bowels gone over loop by loop and freed from all infection. This should be done under continuous hot irrigation; plain sterilized water will be sufficient. In many cases the bowels will be found parietic and distended with gas, and it would be fatal to return them in that condition. They should be incised at several points and the tension relieved. As soon as the gas escapes the opening

should be sutured, the surface sponged off, and this operation should be repeated at other points until the distension is done away with and the bowels can be returned without force. Drainage is essential, as it means that we have no other measure available to insure complete asepsis of the cavity. Gauze drains should be left in position as long as they are doing good; usually they can be removed in from three to five days. The after-treatment is the same as in any other case of abdominal section.

122. Modern Use of Synthetics.—The title of this paper is slightly a misnomer, as it is special and not general in its subject. The paper is confined to a statement of benefits and advantages of kryofin, which the author thinks is a very valuable addition to the pharmacopœia.

125. Appendicitis.—Why some severe cases of appendicitis end in recovery without operation is explained by Carstens on anatomic grounds. In several cases observed during the last years, he found some interesting peculiarities which serve to answer this question. In one case the end of the appendix was adherent to the cecum in such a way that there was no peritoneal tissue between them. In this suppurated of the appendix would find an easy outlet into the cecum, readily penetrating the muscular wall. In a second case the appendix was adherent to the cecum throughout its whole extent, and the same condition existed as in the former, only more extensively. He gives tabulated statements of thirty-three operations for appendicitis in 1898, with two deaths.

127. Effects of Influenza on the Eyes.—Oppenheimer gives a long list of ocular complications of influenza, from medical literature, and explains them as follows: As regards glaucoma, he thinks the cases occurring may be accounted for by the general reduction of strength and vitality. The same will account for the lighter grades of paresis of the muscles, especially those of accommodation. In the hemorrhage, in various parts we have the changed condition of the blood as a probable responsible factor, and this without taking into account the septic emboli to be further mentioned. No specific effect is necessary to explain them. They occur in all conditions affecting the condition of the blood. The purulent uveitis and orbital cellulitis and panophthalmitis must be explained by emboli containing pyogenic cocci, but he is not prepared to say how far the Canon-Pfeifer bacillus is responsible. The severe nervous troubles are best accounted for, in his opinion, by malnutrition, using the word in its broader sense, combined at times with localized edema. As an example of this effect, he refers to the ocular symptoms observed in Russian prisons and barracks during the long fast of six weeks enjoined by the Greek church. He says: "Thus, to my mind, the lack of appetite, the vitiated functions of the digestive apparatus, the consequent changes in the blood, lowered nutrition, together with the great depression of the heart's action (which is in all probability due to toxins produced by the yet undiscovered causative microbe), will account for the profound impression upon the nervous system which is so commonly observed, and explain the chromatopsia, scotomata, inflammations and paralyzes of the nerves and muscles supplied by them."

128. Hemoglobinuric Fever.—Feild describes the differential diagnosis of hemoglobinuric fever, yellow fever and ordinary bilious remittent. Between hemoglobinuria and yellow fever we have the following differences. In hemoglobinuria we have no immunity, its occurrence in malarial districts, high external temperature not required; its occurrence at all seasons of the year; its non-infective nature; the excessive amount of urine, high colored and of high specific gravity as opposed to the scanty urine of yellow fever. The peculiar ratio of slow pulse and high temperature so notable in yellow fever is lacking in hemoglobinuric fever. The jaundice is very rapid, no hemorrhage occurs except from the kidneys, remission in a few hours is the rule; lack of violent headache and the characteristic flush and physiognomy of yellow fever, and the fact that negroes are exempt are also distinguishing characteristics. In ordinary bilious remittent, the slower onset and less rapid and intense jaundice, the absence of black vomit, the hemorrhage from mucous surfaces and the heavily white furred tongue are notable points of distinction. The treatment most successful in Feild's cases was the relief of constipation by salines, the withholding of quinin, hypodermics of morphin for the great

pain and restlessness, cold to the head and the administration of arsenic to prevent recurrence of the malarial paroxysm. He thinks that theoretically the flushing out of the kidneys with soft water would seem to be indicated. The other treatment should consist of keeping up the strength of the patient, allaying irritability of the stomach, giving liquids only, etc.

130. Typhoid Fever.—The antiseptic treatment of typhoid fever is strongly advocated by Seufert, who, in addition to the precautions of rest and diet and cold sponging—the Brand method was not utilized—treated his cases with an opening dose of calomel, one grain every two hours, followed by intestinal antiseptics, salol, naphthalin and carbonate of guaiacol. Each was given in the order indicated, for one week, salol in 5-grain doses every two hours, naphthalin in 5-grain doses every three hours in capsules, and the third week guaiacol in 2.5 grain doses every three hours until convalescence. Constipation was relieved by Rubinat water, and diarrhea and meteorism, which occurred in only six cases, were easily controlled by turpentin emulsion with deodorized tincture of opium. In the one case of an 8-year-old sickly child, which was complicated by pneumonia, chorea, pericarditis and endocarditis, the treatment was also with ice bags, Fowler's solution, three drops every four hours in water, and full doses of strychnin. Tonics were used during convalescence. The average duration of the fever was twenty-one days, the longest case nine weeks. An analysis of the symptoms is given.

131. Suprarenal Capsule.—The suprarenal capsule as an astringent is highly recommended by Sharp in diseases of the nose and throat, in a 10 per cent. aqueous extract, made up freshly. He thinks it will contract the mucous membrane of the nose as much as cocaine, without the danger and depressing effect of the latter.

132. Abdomino-Sacral Operation for Rectal Carcinoma.—Sommer describes a case observed by him in Kraske's clinic, in which the latter performed an operation for carcinoma of the rectum situated high up by first opening the abdomen and freeing the adhesions, then packing the cavity with gauze, placing the patient in a right lateral position and performing the sacral operation which goes under his name. He is inclined, the author states, to use this combined operation more generally in such cases. Its chief advantages are the possibility of delaying the opening of the bowel until it has been isolated; shock seems to be a matter of comparatively little consequence, and tumors, which were practically inaccessible by the sacral route alone, become accessible. Another advantage is that the removal of the tumor and resection of the rectum can be done externally, and the complete removal of surrounding infected tissue is made possible, and still another is the facility of ligating the intestinal vessels. The operation observed was perfectly successful.

133. Acute Bronchitis.—In this article Reilly discusses the etiology of bronchitis and thinks that it is due to a toxemia. He strongly suggests its connection with lithemic poisoning. As regards treatment, he objects to the use of expectorants and doubts their curative effects. The rational therapeutics of the disease consist, he holds, in repeated cleansing of the intestinal tract, aiding the skin and kidneys in the elimination of toxic products by repeated diaphoresis and the ingestion of a large quantity of water, and in the neutralizing or hastening the elimination of the so-called lithic acid poisoning. He concludes as follows: 1. Acute bronchitis is a symptom. 2. The diseased condition of which it is a symptom is a toxemia, which may be due: a, to the so-called uric-acid poison; b, to auto-intoxication from the intestinal canal; c, to specific infectious agents. 3. The treatment with nauseous mixtures under the name of expectorants, is illogical, and is opposed to modern therapeutics. 4. In every case we should endeavor to discover the etiologic factor, and treat the same.

134. Asexualism.—Brooks describes a case of approximate sexual neutrality with feminine general contour and tendency and rudimentary external male organs. He thinks these cases are more frequent than supposed, especially in the female type.

135. Epiphora.—The description of this condition by Woodward, and the discussion of its etiology and treatment form the subject of a rather lengthy paper. He classifies the causes as those inducing excessive production of tears and those interfering with the proper functions of the drainage system.

The former include emotional states, conjunctival inflammations, and various ocular irritations, eye strain and reflex irritation from the nose with other things that increase the sensibility of the fifth nerve. The drainage of the eye depends on the perfection of its apparatus, the patency of the punctum, the permeability of canaliculi, the normal condition of the lachrymal sac, the permeability of the duct and the pathologic conditions in the nose. The treatment consists in opening up the punctum by removal of a V-shaped segment from the posterior wall, and he has for many years been in the habit of removing, in cases of insufficiency of the canaliculum, a portion of the whole of its posterior wall. Other details are fully described and aescopsis insisted on.

136. Celiotomy.—Talbot's paper details the methods of celiotomy. He speaks highly of the Tuffier's angiobride for securing the vessels in celiotomy.

137. Typhoid Mortality.—The mortality from typhoid fever in twenty-four American cities given in tabulated form with brief comments, makes up the substance of Crum's paper. It shows that the typhoid mortality-rate is uniformly high, but that there has been an improvement in most cities during the past decade. The percentage of reduction during the last five years ranges from 71 in Newark to 4.7 in Boston. In New Orleans only is there a higher typhoid rate of late years than during the first half of the decade. The reduced rates are in most places directly attributable to improvement in the water-supply, and Newark and Chicago head the list, the percentage of reduction in the latter city being 61.2. The highest mortality-rate is in Pittsburg, the lowest in Brooklyn. The epidemic in Philadelphia, of this present year, is not included in these statistics.

143. See editorial abstract, *JOURNAL*, August 12, p. 419; also London letter in this issue.

144. See abstract, *JOURNAL*, August 5, p. 355.

145. See editorial abstract, *JOURNAL*, August 12, p. 419; also London letter in this issue.

146. *Ibid.*

151. New Remedies.—The multiplicity of new preparations of all kinds is deprecated by the author. He criticizes the acceptance of samples by physicians, and thinks that they do not always represent the average preparations.

152. Yellow Fever.—Sanarelli's paper is a controversial article combating criticisms that have been made against his claims, by Sternberg, Reed and Carroll, and Novy. He maintains that exposure to cold has no effect on his bacillus.

153. Tuberculosis of the Kidney.—The text of Reynold's paper is that tuberculosis of the kidney is not the hopeless bilateral affection which it has been considered, and is often unilateral and suitable for surgical treatment. The symptoms in the cases on which he founds his opinion were simply general debility and urinary discomfort, with tubercular antecedents. The diagnosis was made by palpation over the kidneys and the course of the ureters, visual inspection of the bladder and in the absence of definite lesions of this viscus, a catheterization of the ureters and the submission of the separate urines, not only to microscopic examination, but also to inoculation experiments, the latter being especially important as shown by one of the four cases he here reports.

154. Retention of Testicles.—After noticing in a general way the facts in regard to this condition, Hill reports three cases of operation in which relief was obtained. In the last case there was a reflex epilepsy which seems to have been relieved also.

155. See abstract in *JOURNAL*, April 29, p. 938.

156. Special Schools for Special Children.—Fort's article dwells on the importance of manual training for weak-minded and backward children.

157. Proteids of Urine.—After reporting a couple of cases Hills describes the conditions of globulinuria and peptonuria. The first case was one of pure globulinuria, a rare condition, though globulin is very commonly found in connection with other proteids. In fact, albuminous urines in a great majority of cases contain it, while it is the sole coagulable protein in a small proportion of cases. The same is also in all probability true of albumin. The significance of globulin in the urine is not well known, though there is some reason to think it has some effect as a factor of the proteid quotient. As regards pep-

tonuria, he calls attention to the fact that greater exactness should be observed in nomenclature. Cases of albumosuria should be reported as such and not as cases of peptonuria or propeptonuria, as has been done in the past. The term peptone should be reserved for those proteid products of proteolysis, which are not precipitated by saturation of the liquid containing them with ammonium sulphate.

158. Spinal Osteo-Arthritis.—Goldthwait reports ten cases of spinal osteo-arthritis, and points out the difference between it and rheumatoid arthritis, also its general clinical pathology.

159. Palmar Abscesses.—Brooks recommends a new method of treating palmar abscess by opening up a triangular flap along the natural lines of the palmar surface, forming a sort of open pouch of the palmar bursa. This affords easy exploration of the whole area of the palm, and cleaning out of any pockets of pus. After granulations have appeared the packing is no longer used, and the skin flaps are folded back and a dry dressing applied.

FOREIGN.

British Medical Journal, July 29.

Operative Treatment of Various Internal Derangements of Knee-Joint. W. J. WALSHAM.—In this article the author discusses the diagnosis and operative treatment of the internal derangements of the knee-joint, including loose bodies, detachment and displacement of the semilunar cartilages, enlargement with nipping of hypertrophied synovial fringes and elongation of the ligamentum patellae. All these conditions have somewhat similar symptoms, synovial effusion, weakness of joint, limitation of flexion and extension, pain sudden and severe, and sometimes a sensation of something slipping in and around the joint. If a loose body is the cause of the trouble it can be felt, as a rule, to slip in and about the joint, not only by the surgeon, but by the patient himself. Still, even in a while there are difficulties, and Walsham reports a case where exploration was required. The diagnosis between a detached semilunar cartilage and a hypertrophied fringe is sometimes difficult. The sign stated in text-books of a semilunar cartilage, that is, locking of the joint and sudden projection of the cartilage, is, according to Walsham, not common. He trusts more to a peculiar creaking or sudden click or snap over the inner portion of the joint, combined with a partial locking and some limitation of movement, and perhaps some slight swelling and pain. The cause of the snap is flying back of the flexed cartilage on flexion of the joint. The signs of a hypertrophied synovial fringe are very similar, but there is not, as a rule, locking of the joint, or much limitation of movement, and the fringe may frequently be felt to roll like a soft pad under the finger when applied over the line of articulation. The disability, however, is often equally great, but it will be found that the pain occurs only when the joint is semiflexed with some slight lateral twisting of the tibia or femur. Elongation of the ligamentum patellae is less common, but the symptoms are similar. The loose patella, slipping, sometimes, over the external condyle, allows the patient to fall. When operations are required for these conditions, the author calls attention to the five following points: The thorough preparation of the patient some time before the operation and complete asepticism of the skin, the knee-joint requiring special attention in this regard; arrest of all hemorrhage before the capsule is opened and thorough cleansing of the joint after the operation, from all clots, with warm, mild antiseptic solution; accurate suture of the synovial membrane and capsule, for which he prefers fine strands of kangaroo tail tendon; absolute rest on a well-fitting back splint till the skin wound is soundly healed, firm pressure being applied to prevent oozing; early passive movement and massage, usually beginning on the fourteenth day, and the patient being up and walking about a week later. As regards elongation of the patella, he thinks it is better to transplant the tubercle of the tibia the shortest distance downward than to attempt to divide and shorten the ligament.

Effective Treatment of Vesical Hemorrhage When Caused by Papillomatous Growths. HERBERT T. HERRING.—The author's method is to use injections of 4 ounces of warm water (99°F.), commencing with the addition of .5 dram of a standard solution of nitrate of silver, one grain to the dram

of distilled water, and increasing the strength every day or two till sometimes 2 drams have been added. This treatment at the start may occasionally increase the hemorrhage, but after several applications it decreases and finally disappears. Thorough antiseptic precautions as to instruments and the parts are required. He reports twelve cases.

Note on Blood in Case of Beri Beri. F. W. MOTT and W. B. HALLIBURTON.—This paper gives the results of experiments made with the blood obtained from a case of beri-beri, as to its effect on blood pressure, experimentally injected in cats, and is illustrated by plethysmographic and manometric tracings. The effect seemed to be more pronounced than that obtained by cholin injection obtained from the cerebrospinal fluid of paretics. Attempt was made to obtain a chemical analysis and determine the presence of cholin, but it was not entirely satisfactory.

Treatment of Impermeable Stricture of Urethra by Excision of Strictured Segment and Suture of Divided Ends. EDWARD DEANESLY.—The author recommends, instead of Wheelhouse's operation for impermeable urethral stricture, the complete excision of the segment involved, and bringing together and suturing the normal calibered, healthy ends which are left, as is done in end-to-end union of the bowel. He reports a case where this was carried out without difficulty. He thinks that there are few cases of stricture which can not be treated in this way.

The Mechanical Factors in Surgery. C. HAMILTON WHITEFORD.—Attention is here called to certain facts which the author has named, for want of a better term, "The Mechanical Factors in Surgery." In the ununited fractures of long bones it will frequently be found that a piece of muscle or splinter of bone has interposed itself between the ununited ends. The mechanical obstruction of respiration in anesthesia, as by growths at the base of the tongue and the valve-like action of the lips, is often overlooked. In the treatment of ulcers we often see lint spread with ointment extending over a margin of healthy skin, instead of having it accurately cut to fit the ulcer, which is bad practice. We see also the use of permanent buried silk sutures which frequently refuse to remain permanently buried, and the illogical use of chemical solutions, such as carbolic acid and corrosive sublimate in the irrigating of wounds, instead of the strictly physiologic salt solution. Lastly, he mentions the bad effect of strangulated hernia involving only the omentum, by producing kinking of the intestines. Another factor in peritonitis, not mentioned in text-books, is the loss of fluid by diarrhea and vomiting, causing heart failure, which would be remedied by large intravenous injections of hot normal salt solutions.

An Inoperable Case of Epithelioma of Larynx and Neck Treated with Formalin Injections. J. D. McFEELY.—This is a report of a case of inoperable malignant growth treated by formalin injections with apparent good results for a time, but the patient finally died, and, at the necropsy, it was found that the tumor occupied the entire left side of the neck from near the jaw to the clavicle and sternum, and it was with great difficulty separated from the deep muscles. The death was caused by asphyxia due to filling of the tracheal tube with fluid, from the breaking down of the tumor, which was found to be an epithelioma of the larynx, starting from the aryepiglottic fold. The author ends his paper with the following conclusions:

1. Up to half a dram of pure formalin can be injected into the body without producing toxic symptoms.
2. Although a powerful styptic, it does not seem so liable as other styptics to produce clotting or embolism.
3. It is probably as safe to use formalin undiluted as diluted with water.
4. When used undiluted it seems to produce an anesthetic effect more quickly.
5. Unlike most other powerful antiseptics or irritants, it does not stimulate, but retards cell multiplication or growth in malignant tumors.

In conclusion one may hazard the opinion that formalin, being such a powerful antiseptic and exercising, as it undoubtedly does, such destructive influence on all low forms of organic life, if any of the neoplasms or malignant growths owe their malignancy, as some believe, to any form of organism, not only

palliative but also curative effects may reasonably be expected to follow its judicious application.

Lancet, July 29.

Influence of Heredity on Drink Habit. G. SIMS WOODHEAD.—The point in Woodhead's address is mainly a criticism of the views maintained by Archdall Reed as to intemperance being a useful factor in evolution, and the establishment of national and racial alcoholic immunity.

Practical Aspects of Dorsal Percussion and in Particular of Percussion of the Spine. WILLIAM EWART.—It is not possible to abstract this article, as it covers the subject at considerable length, and is very detailed, but we mention it here for reference, as it treats very thoroughly of a matter that has not so far been extensively discussed in our text-books on diagnosis. The diagrams are also very instructive.

Dermatitis Exfoliativa Neonatorum or Ritter's Disease. KEDARNATH DAS.—This article reports briefly a case of Ritter's disease, and gives a description of the affection, largely taken from Elliott.

Case of Recklinghausen's Disease Complicated with a Sarcomatous Growth Involving the Brachial Plexus. H. D. ROLLESTON.—The case here reported in detail with necropsy is of interest. The author considers the disease as a congenital hyperplasia and tumor formation in the mesoblast at its junction with the epiblast, that is, in the skin and nerves. It appears probable in this case that the growth was at first an innocent neuroma, becoming ultimately a sarcoma similar to the sarcomatous development occasionally observed in other congenital defects, such as pigmented moles.

Practitioner (London), August.

Injuries to Peripheral Nerves. VICTOR HORSLEY.—Beginning his lecture with the statement that nerve injury without irritation causes atrophy and we only have trophic changes other than atrophy with an irritative lesion, Horsley passes on to the statement of the recuperative power of nerves and shows that, according to Kennedy's observations, the same changes take place when a nerve is simply bruised as when it is cut, that is, that regeneration occurs by the growing outward of the axis cylinder of the central portion of the nerve. He has himself seen $1\frac{1}{4}$ inches bridged over in this way, but the ordinary course would be to suture cut ends, and, if this is not possible, insert grafts. He expresses the opinion, a little at variance with that held by some authors, that direct conduction may take place through the graft or suture. As regards prognosis of nerve injury, contusion or otherwise, he thinks it is generally favorable if properly treated. In the conclusion of his paper he speaks of the question of the hysterical or neurasthenic traumatic neuroses and their diagnosis.

Various Aspects of Open Air Treatment of Phthisis. ALBERT HILLIER.—This article discusses the importance of pure air for consumptives, and shows that this is the first consideration, everything else is secondary.

Australasian Medical Gazette (Sydney, N. S. W.), June 20.

Immediate and Ultimate Treatment of the Inebriate. F. NORTON MANNING.—The author advises the immediate and total cutting off of all alcoholics in the treatment of inebriety. He condemns chloral given alone for the insomnia, but advises it combined with the bromids in moderate doses. The one important matter should be that the dose of the bromids should not be too small and of the chloral not too large. It is not necessary to give more than a few large doses or to continue active treatment beyond forty-eight hours, and it is always advisable to watch the urine and administer diuretics when it is scanty or loaded, as is often the case. As regards the ultimate treatment of inebriates, he criticizes palatial asylums or retreats, and thinks that their seclusion should be compulsory and a certain amount of work enforced. He thinks the treatment along what has been called, not inaptly, the "Calvinistic method," is the best, and that drunkenness is not altogether so much of a disease and so little of a vice as some have held.

An Outbreak of Dermatitis Exfoliativa Neonatorum. WALTER SPENCER.—This author describes an epidemic of Ritter's disease occurring in a Sydney institution. Twenty-five cases are reported with five deaths. Two patients were born with the disease. The eldest case attacked was $3\frac{1}{2}$ years old. He thinks that the prognosis, in untainted, healthy infants treated antiseptically under careful supervision, is good. In

infants with bad heredity, constitutional dyscrasia or concurrent ailments, the preliminary eruption is apt to be fatal. His treatment was permanent application of *lotio zinci carb.* combined in the cases of minor exfoliation with *lotio nig. aa.* General treatment was seldom needed except in cases where syphilitic taint existed. These responded well to mercurials.

Annales de l'Institut Pasteur (Paris), April.

Pathogenic Sarcina. LOEWENBERG.—In only one out of 1000 cases of nasal troubles examined, a fetid discharge from the nose, which had persisted for years, with symptoms differing from those of *ozena*, proved to be exclusively caused by a kind of sarcina which was found in enormous numbers in the secretions. It was extremely pathogenic for rabbits, guinea-pigs and white mice, producing intense peritonitis in the former. As the microbes vanished under appropriate treatment the patient was permanently cured.

Bulletin d'Electrotherapie, June.

Pathogenesis of Contractions. GILLES.—The hypothesis advanced in this communication is that peripheral contractions are the result of stimulation of healthy centers by some continuous, involuntary peripheral action; that spinal contractions are the result of the pathologic reaction to normal excitations of injured or defectively connected centers; that cerebral contractions, on the other hand, are essentially peripheral and connected with the appearance of tardy secondary lesions. This theory harmonizes with certain of Grasset's and Van Gehuchten's later propositions.

Gazette Medicale Belge (Liege), June 8.

Mangold's Method of Epidemic Grafting.—The skin is scraped with a razor and the scraps thus obtained are scattered over the defect to be covered, in time forming a covering as perfect as that obtained with a Thiersch flap. Pispoli has found that raking the surface with pins arranged like Wecker's instrument for tattooing, twenty pins in a coil of parchment paper, superior to the razor, and reports a number of cases in which defects 8 by 5 cm., or 8 by 9, healed over completely in two weeks, after thus sowing them with epithelial substance, and covering with tin-foil or gutta-percha to prevent drying. The fifth day the surface is irrigated with salt solution and boricated vaselin applied the tenth day. (See JOURNAL, July 29, par. 60, p. 275.)

Journal des Sciences Medicales de Lille, July 15.

Examining Old Pus for Actinomyces. G. LEMIERE.—The significant fact is reported that typical specimens of actinomyces were found in the pus of a cow affected with actinomycosis, after it had dried to a powder seven years later. The bottle containing it had stood on a dry shelf in the laboratory, exposed to sun and daylight. No cultures could be developed, but the appearance of the micro-organism suggested that merely a specially favorable soil was needed.

Presse Medicale (Paris), June and July.

The Leucocyte Balance. LEREDDE.—"Closer study of the proportions between the numbers of the various types of leucocytes may prove a valuable assistance in the diagnosis and prognosis of many diseases, and also in therapeutics, as the balance can be regulated by medication and leucocytosis promoted." The proportions in the normal adult, Leredde has established to be 60 per cent. for the polymuclear, and 1 to 2 per cent. for the eosinophiles; in the child, 40 to 50 per cent. of the former and 5 per cent. of the latter. In the aged the polymuclear increase to 70 per cent. The physiologic balance in the adult seems to be constant, with slight variations during fasting or digestion, pregnancy, etc. The polymuclear cells increase rapidly in diphtheria and certain cutaneous affections. Mononucleosis is peculiarly frequent and pronounced in acute and chronic leucemia, and is an important aid in differentiating leucemic from tuberculous glandular swellings, as polymucleosis prevails in the latter. Increase in the number of eosinophiles indicates a reaction on the part of the bone marrow; increase of mononuclear cells indicates glandular alterations.

Entero-Anastomosis by Implantation. E. SCHWARTZ.—An elderly woman with an incarcerated femoral hernia and consecutive crural aneurysm, was operated on five months later and the intestine cut off above each end of the V. The long-disused peripheral end, no larger than a pencil, was implanted in a lengthwise incision in the dilated central end. Notwith-

standing the extreme disproportion between the sizes of the portions united, normal conditions were promptly restored.

Acute Appendicitis in the Tuberculous. F. CATHELIN.—Several observations are described to emphasize the fact that tuberculous lesions of any kind reduce the power of resistance, and hence surgical intervention is indicated with special urgency in case of acute appendicitis occurring in a person with a tuberculous predisposition or local lesions.

Epidemic of Icterus in Children. FRINGUET.—Seven children out of thirty attending the same school from various villages were affected with infectious icterus, distinguished by the slow pulse, 55 in one case—a boy of 12. The icterus was the last of the symptoms of the benign infection to subside.

Cold Baths in Delirium Tremens. M. LETULLE.—Cold baths are indorsed as the most effective and harmless means of reducing the temperature and calming the delirium, with three observations reported. The patient is placed in a bath at 18 C. for ten to fifteen minutes every two or three hours, until the delirium and fever have definitely subsided.

Gangrenous Mammitis. ROGER AND GARNIER.—A young woman was attacked with scarlet fever and mammitis a week after normal delivery of a child, who died in two days without discoverable cause. The scarlet fever threatened to be severe, but yielded to cold baths. The mammitis in the left breast became gangrenous, but healed after dressings of oxygenated water were applied. Gangrenous mammitis is of rare occurrence in women, but is more frequently observed in milk animals. In this case a peculiar small coccus was isolated, producing aerobic and anaerobic cultures resembling grains of sand, and in the first cultures distinguished by a fetid odor. It is pathogenic for animals, and does not liquefy gelatin.

Chyle Cyst in the Mesentery. LETULLE.—A child of 7 years was operated on for supposed tuberculous peritonitis, and the symptoms found to proceed from a cyst in the mesentery, containing chyle. The structure of the walls of the cyst indicated a congenital malformation of the excretory lymphatic system connected with the small intestine, with a continuous endothelial layer over the inner surface of the cyst.

Etiology and Treatment of Tuberculosis of Iris. F. LAGRANGE.—According to the writer's research and experimentation, tuberculosis of the eye is frequently local and clinically primary. He also establishes the possibility and danger of generalized infection from the local lesion, and suggests the necessity of enucleating the eye if sight has been lost.

Cancer of the Ampulla of Vater. H. DOMINICI.—This is a report of an observation of a neoplasm developed at the expense of the excretory biliary and pancreatic passages, as opposed to the cancer of the head of the pancreas derived from the pancreatic acini: in one word, a cylinder-celled primary epithelioma of the Vater region, of excretory origin.

Revue Generale d'Ophthalmologie (Paris), June 30.

Essential Hemeralopia Cured by Ingestion of Sheep's Liver. TRANTAS.—Hippocrates used to treat hemeralopia by the administration of beef's liver, and this has been tried in modern times, but so ineffectually that the manuals of ophthalmology no longer mention it. Trantas reports a series of ten cases all cured after the administration of 200 grams a day of cooked sheep's liver, which can not be ascribed to mere chance. In one case of twelve years' standing, with alcoholic antecedents, the patient was relieved of his infirmity in a few days. Light cases are cured almost at once, and the hemeralopia accompanying a hepatic affection is cured even when the latter is incurable, such as an inoperable carcinoma.

Revue Heb. de Laryngologie, etc. (Bordeaux), June 3.

Double Thyrotomy, Double Tracheotomy for Angioma of Larynx. GOMIS.—The angioma located in the left wall of the ventricle in a boy of 4, was successfully removed, but the upward displacement of the ventricular band persisted, requiring a repetition of the operation and resection of the band with an elliptic flap of the mucosa, before respiration became normal.

Semaine Medicale (Paris), July 15.

Hemianesthesia of Cerebral Origin. DEJERINE.—The point that serves to differentiate cerebral from hysterical hemianesthesia is the parallelism between the other cerebral manifestations and the anesthesia: the member most paralyzed is likewise the most anesthetic. In hemiplegia complicated with

hemianesthesia, the disturbances in the sensibility are most marked in the upper member, in the trunk and face, and they are most pronounced the farther from the root of the member. This fact has never been noted before. The anesthesia never occurs in zones as in hysteria; it is usually more intense in hysteria. There is also a subconscious sense that serves to protect the subjects from injury, which is an aid in differentiating hysteria, as also the fact that when the attention is diverted from a point the anesthesia at that point becomes less. The special senses almost always participate more or less in hysterical anesthesia, while the visual field, etc., is not disturbed in organic hemianesthesia. The localization of the cerebral cause, whether cortical or capsular, can not be decided by the symptoms, which are identical in each case. The hemianesthesia is particularly persistent when a lesion in the thalamus has destroyed the terminal fibers of the ribbon of Reil and the fibers of the thalamocortical neuron. It is particularly extensive when, with an intact thalamus, its connections with the sensory-motor corticality have been more or less destroyed. These are the only two conditions, according to Dejerine, in which a central lesion of the hemisphere can cause hemianesthesia of the general sensibility.

Berliner Klinische Wochenschrift, No. 28.

Malignant, Non-Septic Form of Endocarditis Rheumatica. M. LITEN.—The writer adds seven new cases to the eleven he has previously published, in which malignant, fatal endocarditis without suppurative processes appeared in the course of an ordinary articular rheumatism or chorea, only distinguished by their prompt response to salicylic acid. The endocarditis proceeds with the characteristics of general infection, as in the septic form, with objective symptoms similar to those of the usual simple rheumatic variety, but the metastases are exclusively bland infarcts. A chill or cutaneous hemorrhage frequently inaugurates the affection; and weeks and months may elapse before the end. Erratic chills are characteristic; also, usually, enormous acceleration of the heart's action. The retinal hemorrhages sometimes show a white center. Transformation of a simple rheumatic form into the malignant or septic form has never been demonstrated. The affection may sometimes prove difficult to differentiate from peliosis rheumatica, morbus maculosus Werlhofii, etc.

Centralblatt f. Chirurgie (Leipzig), July 29.

Inflammatory Swellings in Lymphangioma. TAVEL.—The inflammatory swellings that occur "in pushes" in a lymphangioma are explained by an observation reported in which the lymph trunco jugularis entered a tumor on the neck of an infant 4 months old, and pure cultures of the streptococcus were obtained from the pus. The circumstances plainly indicated that the infection must have arrived from the nose or mouth and not from the exterior. The infected portions were not accessible by simple puncture. No antiseptics were used, as Tavel is convinced that the tissues in the vicinity of an infectious focus are practically immunized from the dissemination of the bacterial toxins, and antiseptics are not required, while they are injurious and retard recovery. He never uses them even after evacuating a large osteomyelitic cavity.

Valvular Stoppage of Biliary Passages by Calculi. C. LAUENSTEIN.—Fenger and others have called attention to the occlusion of the biliary passages by stones acting as a valve, allowing the passage of bile in one direction and not in the other. Lauenstein states that nothing but such an assumption can explain the gorged condition of the gall-bladder in some cases, the bile not finding an egress, and its emptiness in others, the bile prevented from entering by the reverse valve action of the stones. The influence of this condition is harmful, as the gall-bladder no longer answers its purpose as a reservoir. There is a constant, instead of the normal intermittent flow of bile into the intestine. The sphincter in the ampulla of Vater must be constantly gaping to allow the passage of the continuous stream, and this favors the infection of the biliary passages from the duodenum.

Deutsche Medicinische Wochenschrift (Berlin), July 27.

Is Wood Sorrel Poisonous? L. LEWIN.—Referring to Eichhorst's communication (see JOURNAL, August 5, p. 346), Lewin sifts the evidence and asserts that the possibility of intoxication from wood sorrel is absolutely improbable and unproven.

Case of Diffuse Scleroderma of Lower Limbs With Well-Defined Spinal Segmentary Limitations. I. BRUNS.—The scleroderma commenced in the feet and extended symmetrically on both legs until it reached and stopped at the line corresponding exactly, both front and rear and on both sides, to the upper limit of the cutaneous region ascribed to the first lumbar segment as depicted in Head's diagrams (*Brain*, 1893), etc. Bruns distinguishes, in the disease, first a stadium hyperemicum or vasoparalyticum; then a stadium elevatum, possibly also edematosum, and a third, the stadium atrophicum.

Universal Staining Method for Blood Preparations. L. MICHAELIS.—By this new method one stain simultaneously brings out on one preparation the nuclei, neutrophilous, eosinophilous and basophilous granulations and the blood plates. There are two solutions, each an aqueous, 1 per cent. solution of methylene blue or eosin. They are combined with alcohol and acetone as follows: Solution A (methylene blue), 20.0 and absolute alcohol, 20.0. Solution B (eosin), 12.0; acetone (Sp. 56 to 58), 28.9. The preparation is fixed in alcohol or by the Ehrlich method, from one-half hour to twenty-four hours. One e.c. each of A and B are poured into a block dish and covered. The preparation is dipped into this mixture, as Ziemann recommends for his method. It first turns blue and then red, and the proper length of time for the stain is the moment when the red stain becomes evident, which may be in from one-half to ten minutes.

Muenchener Medicinische Wochenschrift, July 11 and 25.

Phosphorus Necrosis. L. V. STUBENRAUCH.—This affection is not restricted to workers in match factories, but has occurred in bronze works, etc., where phosphorus is used. It is impossible to reproduce in guinea-pigs, rabbits or dogs, a clinical picture similar to that of human phosphorus necrosis, as Stubenrauch has established by three years of experimental research. The fumes of phosphorus have no specific irritating effect on these animals, even when the periosteum is directly exposed. The latest views are that the phosphorus alone is not responsible, but that phosphorus plus infection, causes the decay of the bone. The phosphorus only supplies the disposition, which, he asserts, is a tendency to thrombosis.

Glass Brick Walls for Operating and Work Rooms. F. KUHN.—In building an operating-room facing the east and close to the street, Kuhn employed the Faleonmer glass bricks, which are small cubes or diamonds of glass filled with air, and fitted and mortared together like ordinary bricks. He found that no windows were required, as the light penetrates sufficiently, although it is absolutely impossible to see in or through them, even with a light inside at night. A skylight above supplies the direct light, which is reflected and multiplied by the glass walls, without glare. They also modify the temperature of the room remarkably, modifying both heat and cold, and also deadening the noises without. Still another advantage is that these walls do not frost over in winter, and that they look clean, both out and inside, and can be easily kept aseptic inside, while they are very ornamental.

"Sore Mouth" in Children and Its Relation to "Foot and Mouth Disease." R. POTT.—Reviewing his 553 cases of stomatitis in children during the last twenty years, Pott notes that only 53 under 6 months were affected, and these with exclusively catarrhal manifestations, while from 6 months to 2 years, or during the teething period, the number attained 290; from 2 to 5 years, 161, and from over 5, 49. He considers abrasion of the gums of infants in attempts to clean their mouths, a frequent source of inflammation, also the congestion induced by teething and the injurious custom of allowing children to chew and suck on rubber rings, etc., which rubs off the epithelium and favors fermentative and putrefactive processes in the mouth. He considers stomatitis aphosa or ulceroa as a primary local infection, and calls attention to the fact that uncooked butter or milk from animals affected with foot and mouth disease is capable of producing an analogous disease in man, and especially in children. Boiling the milk and cooking the butter absolutely prevents this. It has been established, however, that the identical affection may appear in children when the possibility of an infection must be excluded unless disseminated long distances through the air. He has observed seven instances of family epidemics.

After Treatment of Sprained Joints. K. HASEBROEK.—Patients often complain of a weakness in a knee, wrist or ankle that has been badly sprained. It gives way when least expected, and may lead to permanent functional disturbances. Hasebroek urges trial of a leather support that he has found extremely useful in supporting the joint and imparting strength and confidence. For the wrist, a leather cuff, made over a plaster cast, and laced snugly, proves an ideal support. A similar contrivance for the knee leaves the cap of the knee bare, but is snugly laced above and below, the two parts connected by a hinge extending almost the entire width of both. For the ankle he uses Marcinovski's simple appliance for flatfoot, which answers the purpose most admirably.

Habitual Dislocation of Shoulder. F. KRUMM.—A healthy man of 49 dislocated his right shoulder and, during the following seven years, the luxation re-occurred again and again, thirty-seven times in all, requiring necrosis for each reduction, and preventing all work. Krumm restored the shoulder to normal function by taking up an equatorial fold in the capsule with a lacing suture from the depths of the axillary cavity forward, thus substituting a stout ridge in place of the stretched and weakened portion of the capsule wall, and making it fit the joint. He insists on the necessity of opening up the capsule first to examine the joint; drainage is not required, but is advisable for the extracapsular wound. Smooth and permanent recovery followed. Over a year has since elapsed.

Gazzetta degli Ospedale e delle Cliniche (Milan), July 16.

The Vagus Protects the Heart. A. STEFANI.—Years of special study have convinced Stefani that the inhibiting innervation of the heart is a contrivance to protect it against the three chief causes of exhaustion: increased arterial pressure, dyspnea and high temperature. Danger from increased arterial pressure is averted as the vagus center is directly stimulated by the increase, and probably also indirectly through the depressor nerve. As the vagus center is stimulated the heart-beat is retarded, which in turn reduces the arterial pressure. In respect to dyspnea, the blood in this condition is incapable of restoring strength to exhausted muscles, but the stimulation of the vagus center by the dyspneic blood retards the heart and in this way reduces the amount of oxygen required by the heart, which can thus longer resist the deficiency of oxygen. Elevation of temperature has also a stimulating influence on the vagus center, as can be interestingly studied by irrigating the exposed medulla alternately with hot and cold physiologic solutions. The effect of temperature on the bulbar heart inhibiting center explains why a high temperature with a moderate pulse offers a better prognosis than a lower temperature with a more rapid pulse. As long as the inhibiting innervation is functioning well, the heart has little to fear from the high temperature of the blood. The vagus, he concludes, is the trophic nerve of the heart, increasing diastole, and causing the assimilative processes to preponderate over the dissimilative.

Tuberculosis and Pregnancy. E. CIOFFI.—Maragliano has stated that out of 188 cases of circumscribed tuberculosis, 34 died within twenty-one months, that is, 18 per cent., while the percentage of deaths among those who had passed through a pregnancy amounted to 94 per cent. These statistics are confirmed by Cioffi's experience of the excessive mortality among tuberculous parturients. He asserts that the persistence of fever and grave adynamia after childbirth, when other causes of infection are excluded, should suggest the idea of possible tuberculous lesions. In examining a tuberculous female it is well to bear in mind that the first manifestations of the disease may have coincided with a pregnancy. He also reaffirms Maragliano's statements (see JOURNAL, xxxii, p. 1253), that the pregnancy must be interrupted where tuberculosis is certain or suspected.

Il Policlinico, May 30.

Resection of the Cervical and Abdominal Sympathetic. RUGGI.—Ten cases of extirpation of the cervical sympathetic for glaucoma are reported, bilateral in four. The tolerance is remarkable, and also the rapid disappearance of the violent peribulbar pains. Ruggi recommends extirpation of the sympathetic in abdominal operations—the ganglia forming the plexus spermaticus, uterinus and ovarialis—as there are sensory spinal fibers in these ganglia which may keep up the pains after the corresponding organs have been removed. He even

considers that in many cases of hyperesthesia and crithism this intervention alone might be sufficiently effectual.

Nuova Rivista Clinico-Therapeutica (Naples), No. 5.

Influence of Bandaging the Extremities on Albuminuria and on the Arterial Pressure. BRUSCHINI.—Winding the lower extremities with elastic webbing for two to three hours has always produced a transient improvement in severe cases of albuminuria and permanently cured light cases—an extensive experience at De Renzi's clinic. The amount of urine at first diminishes but later returns to one-third above normal. The percentage of albumin in the urine gradually decreases during the bandaging and after, but returns to the previous proportion in twenty-four hours. The arterial pressure is materially increased during the bandaged period, falling later even below normal. The amount of albumin eliminated does not depend on the variations in the vascular pressure, but continues diminished after the bandage has been removed. This may be explained by the assumption that the rapid increase in arterial pressure regulates the circulation in the kidneys and acts on the renal innervation, which favorable effect lasts after the increase in the blood-pressure has subsided.

Societies.

Southern Minnesota Medical Association.—This Association held its annual meeting at Owatonna; secretary, W. T. Adams, Elgin. The next meeting will be at Winona.

Rock River Valley Medical Association.—The following officers were elected at the recent meeting of this Association, held in Dixon, Ill.: President, A. E. McBride of Sterling; vice-president, G. R. Proctor of Coleta; secretary, A. L. Miller of Dixon.

Huntington County Medical Association.—At the recent session of this Association, election of officers resulted as follows: President, H. C. Gemmell; secretary and treasurer, Ervin Wright. The next regular meeting will occur October 10, in Huntington, Ind.

Southwest Minnesota Medical Society.—The summer meeting of this society was held at Adrian, Minn., recently. The newly-elected president is G. R. Curran of Worthington; secretary and treasurer, H. D. Jenkes of Jasper. The January session will be held at Worthington.

Ontario Medical Association.—At the recent meeting of this Association the following officers were elected for 1899-1900, the Association to meet in Toronto again in 1900: President, J. E. Graham, Toronto—since deceased; first vice-president, Adam H. Wright, Toronto; second vice-president, M. I. Beeman, Newburgh, Ont.; third vice-president, R. J. Trimble, Queenston, Ont.; fourth vice-president, A. F. McKenzie, Monckton, Ont.; secretary, Harold C. Parsons, Toronto; assistant secretary, E. Hurlburt Stafford, Toronto; treasurer, George H. Carveth, Toronto.

Ontario Medical Council.—The thirty-fourth annual session of the Medical Council of this province met in Toronto July 4 and transacted business for the six succeeding days. The following is the list of officers for 1899-1900: President, W. F. Roome, M.P., London, Ont.; vice-president, William Britton, Toronto; registrar, R. A. Pyne, Toronto; treasurer, Wilberforce Aikins, Toronto. The fall examinations were fixed for the third Tuesday in November, 1899, at the college in Toronto, and those at the City Hall, Kingston, Ont., on the second Tuesday in May, 1900.

British Medical Association.

Annual Meeting, Portsmouth, Eng., August, 1899.

(From advance sheets of British Medical Journal.)

PLACE OF PHARMACOLOGY IN MEDICAL CURRICULUM.

DR. J. B. BRADBURY, in his remarks, said in part: For some time my mind has been exercised as to the proper place of pharmacology in the medical curriculum. So far as I

can make out there is a growing tendency for medical corporations—if we except the universities—to require less and less knowledge of the natural history, properties, composition, and action of drugs, from candidates for their diplomas; a condition of things much to be regretted. Personally I have no wish to revert to the state of affairs when candidates were expected to have a minute knowledge of the distinctions between the different species of senna, and of cinchona, etc.; but the danger now is that they may not be able to recognize senna at all, or to know the ingredients and doses of the most important pharmacopœial preparations. The consequence is, when settled in practice, that they are tempted to prescribe ready-made tabloids, elixirs, etc., the purity and the precise dose of the ingredients of which have no official sanction. Far be it from me to speak too disparagingly of these products of the chemist's ingenuity; in many cases they are most useful and valuable on account of their easy portability; but in other cases the therapeutic results would be more satisfactory if B. P. preparations were issued instead. And here may I say one word in praise of the new "pharmacopœia"? It is a model of what such a work would be—accurate, learned, and not overburdened with details. I am surprised, when I have to consult it, at the extent and variety of the information which it contains. The contents of such a book, so far as bear directly or indirectly on prescribing, should be thoroughly mastered by all medical students, and I would make such knowledge a compulsory part of the curriculum. Think for a moment of what is required of a medical man once started in practice. A considerable part of his work is writing prescriptions for his patients, and yet in respect of the knowledge of drugs and their actions his education is often most imperfect.

This brings me to the subject of pharmacology, or the action of drugs on the body in health and in disease. Is it too much to expect those who are daily to prescribe remedies to be acquainted with what is known of their actions? Certainly not. Well, then, how can this best be taught, and where in the student's course shall it come in? I think after anatomy and physiology, and alongside of pathology. I would make the first part of the final examination pathology and pharmacology—the sciences dealing respectively with disease and its treatment—and then the student should at the next stage be ready to apply the principles thus acquired to actual practice in connection with his clinical medicine, surgery, and midwifery.

The more intimately a student knows the action of the drugs he prescribes, the greater will be his success in treatment, and it is much to be regretted that some of the examining boards require a student to acquire this knowledge only in a haphazard way, or at a premature stage of his course. He can not appreciate physiologic action until he is possessed of the elements at least of physiology. On the other hand, he can not appreciate the importance of judicious prescribing, unless he has learned the nature and properties of the agents prescribed. These two considerations seem to me decisive as to the exact place in the curriculum at which pharmacology should be introduced. I believe I am correct in stating that every German university demands of its students a knowledge of pharmacology, and that the subject is regularly taught in these universities. It has been said that the medical student is already overburdened with subjects. That may be, but lighten some of the other less necessary subjects, and encourage him to give more attention to knowledge which when in practice he will daily and hourly be called on to use.

UNUNITED FRACTURE IN CHILDHOOD.

EDMUND OWEN, F.R.C.S., considered two questions: 1. Why is non-union after fracture of the tibia and fibula in children of comparatively frequent occurrence? 2. Why does its treatment by operation so often end in amputation? He said:

It is because of the frequency with which the tibia and fibula are involved in pseudarthrosis in children, that I suggest we should confine our remarks to ununited fracture in the leg bones, though there is no reason why the condition as affecting other long bones, notably the clavicle, humerus, and femur, should not be alluded to for purposes of illustration. I have met with non-union after fracture of the clavicle in a child; but, after all, the defect did not prove a very serious one.

The humerus is rarely the seat of pseudarthrosis in children, though in the adult it is often involved. So also with

the shaft of the femur; it is frequently affected in adult life but rarely in children, and the only case of femoral pseudarthrosis which I have met with in a child recovered after a long rest, without a cutting operation.

The two great differences between ununited fracture in the child and the adult are these, that in the child the false joint is generally in the leg, and that operative treatment is almost invariably futile.

Comparatively little attention has hitherto been directed to this subject, chiefly for the reason, I suspect, that the surgeons who had to deal with such cases could not publish a satisfactory result to their operative interference. Though why surgeons should publish accounts only of their successful cases I cannot understand, such practice being equally misleading and immoral.

So far as I know, the first essay directing special attention to the subject of ununited fracture in children was by Sir James Paget in *Studies from Old Case-books*, published in 1891. In it he gives brief records of three cases:

The first was that of an infant who broke her tibia and fibula from very slight violence; when she was 15 years old she was glad to have the leg amputated.

The second case was that of a baby who fell and broke its leg below the middle. "The fracture was at once well set, and every care was taken of it; the union gave way, and consolidation never took place, though scraping, excision, wiring, everything" were tried. The limb was eventually amputated.

In the third case a "bonesetter" broke the bent leg of a child, and the fracture did not repair in spite of a resort to resection and wiring, and in due course Dr. Snowcroft amputated the leg.

In the cases on which I have operated there was apparently no local impediment to the consolidation; the broken ends of the tibia forming a salient anterior angle at the junction of the middle and lower third of the leg, were in close apposition. No tendon or sequestrum interfered with them, and they were surrounded and connected by a considerable amount of fibrous tissue, which, unfortunately, failed to attain the higher development into bone.

It would be as interesting, as it is impossible, to know what is the exact state of the bone at the time of the fracture in those cases in which pseudarthrosis ensues. Does the fracture occur because there is some peculiar atrophic condition of the tibia and fibula at that spot? If this be the case, the failure of operation to remedy the defect is at once explained. Will the X-rays eventually help in the elucidation of this mysterious and interesting matter?

In some cases of pseudarthrosis in children the fracture occurs in utero or at the time of birth, but more often at a later period, and in many cases as the result of slight violence. In such circumstances, therefore, there might be but little to attract the attention of the mother or the surgeon to the injured leg-bone, and so the fracture might be neither recognized nor treated.

In the adult the chief cause of non-union after fracture is want of rest, and possibly this is one of the causes of the frequent occurrence of pseudarthrosis in the child's broken tibia; the fracture is not detected and not treated, and the child is carried about, the leg hanging over the mother's arm. Thus the weight of the foot constantly draws the lower end of the tibia backward, and the salient angle at the fracture is directed forward.

In the adult the humerus and femur are bones whose shafts are most often the seat of ununited fracture, and with them resection of the pseudarthrosis and wiring the freshened ends of the bone always results in consolidation. But in children non-union most often occurs in the tibia and fibula, and, so far as my experience goes, fibrous union is the best result that follows operative treatment. But as fibrous union of a fracture of the tibia and fibula is of no practical value, the operative treatment very often ends in amputation.

He then quoted Packard of Denver, and D'Arcy Power's table of 72 cases of ununited fracture of the long bones in children, of which 45 occurred in the tibia and fibula, giving a percentage of 62.5, and said:

As to the cause of the almost invariable failure of operative measures I regret to say that I have nothing definite to offer.

It has been suggested that previous to its being fractured the bone may have been the seat of an obscure affection somewhat allied to mollities ossium. All I can say is that, cutting down upon the seat of the fracture there was no remarkable softness of the bone. In the instances, however, in which I have operated long after the original injury there was an atrophic condition of the lower fragment of the tibia. The child's foot had been well enough developed, but the fragment between the ankle and the fracture has been poor and spindle-like, as in a case of infantile paralysis. Why should one bone be affected by any form of mollities ossium without other bones being affected, mollities being a general disease?

As to theories—what is wanted is a theory which shall at the same time explain the easy fracture of the bone from some slight injury; the absence of bony union whether the fracture be well treated or not; and the complete failure of those operative measures which can be depended upon for success in the treatment of pseudarthrosis in the adult.

The only theory which, so far as I can see, is able to answer all these requirements is that which invokes the influence of the trophic nerves. I am, therefore, going to suggest that leading up to the fracture there is some subtle disturbance in the anterior cornu of the grey crescent of the cord, inhibiting the due nutrition of the bone, and rendering it weak and friable, subsequently interfering with repair, and eventually frustrating the best endeavors of the operating surgeon. I would thus ally the condition to the molecular disturbance of the crescent which entails infantile paralysis, but one which exceeds its influence upon bone rather than muscle.

It would be interesting to know if the forcible straightening of bent bones—a very common operation in these times—has in many instances been followed not merely by delayed union, but by pseudarthrosis. Such an occurrence would, indeed, be a calamity.

In a large proportion of the cases the fracture has been the result of very slight violence. Is it not fair to assume that there was some antecedent weakness in that part of the bone? Admitting the pre-existence of such local weakness, it will not come as a matter of surprise that operative treatment ends in disappointment.

I see no reason why one should endeavor to attribute the fracture to any constitutional dyscrasia, such as rickets, syphilis, or tuberculosis. It is probable that in a large proportion of the cases the general treatment has been in such directions, but always with the same negative result.

In the heading of this paper I ask the question why the operative treatment of ununited fracture of the tibia is so often followed by amputation; and, in order to increase the chance of some satisfactory conclusion being arrived at, I will throw out these definite suggestions for discussion:

1. Why do the tibia and fibula of a child break as he is, for instance, pushing a chair along the carpet, whilst every other bone in his body is apparently sound?

2. Why, if the fracture is promptly discovered and properly treated, does it sometimes fail to consolidate?

3. Whether the fracture has been appropriately treated or not, how is it that the operative measures which suffice to cure pseudarthrosis in the adult fail miserably in the case of the ununited fracture of the leg bones of the child?

4. Is the diaphysis of the tibia, or the lower fragment, generally ill developed in these cases? If so, does this morbid condition help to explain the failure of the operative treatment? What is the explanation of this atrophic condition?

Lastly, has any operator ever established consolidation in the ununited tibia of a child? If so, will he kindly explain how he accomplished it? For my own part, I must regretfully confess that all my best efforts in that direction have ended in complete failure.

A PLEA FOR CONSERVATIVE GYNECOLOGY.

G. GRANVILLE BANTOCK, M.D., said in part: It was an idea of the late M. Péan's that a fibroid was essentially a malignant growth that must be removed some day, and some of the younger generation seem to have adopted that view. When the life-history of the uterine fibroid comes to be written, it will be seen how erroneous that idea is. A fibroid tumor does not necessarily interfere with impregnation, the full development of the fetus and its safe delivery, nor with the repetition

of the process again and again. Fallacious arguments have been drawn from the supposed analogy between the ovarian tumor and the fibroid, and because of the improved results which have followed upon early interference in the case of the ovarian tumor, it is maintained that a like result would follow in the case of the fibroid.

But it is impossible to establish any analogy between these two diseases. Who has heard of an ovarian tumor disappearing, except by the hand of the surgeon? On the other hand, who has not heard of fibroid tumors disappearing under various conditions, of which the essential element would seem to be an interference with the nutrition of the growth, as, for example, by the natural processes of the menopause and child-bearing, or by the removal of the appendages? Who, with an experience of ten or fifteen years, has not known fibroid tumors to become arrested in their growth and all symptoms cease, if, indeed, there were any; or observed tumors of considerable size become so quiescent as to render the risk of surgical interference unjustifiable?

Again, if a woman complain of pain in the pelvis—especially in either ovarian region—as the result of an abortion, chronic uterine congestion, or follicular disease of the cervix; or if she present symptoms attributable to the minor forms of derangement of the generative apparatus, she is deemed to require the removal of the appendages; and if she should be the subject of an uncomplicated retroversion which an ill-devised and ill-adapted pessary has failed to relieve, then she must undergo an operation, either by the vaginal or the abdominal route, for fixing it in position. I have seen many examples of all these, in which I have felt it my duty to advise against operation, and I do not know of a single case in which there has been reason for regret that that advice has been acted upon, while, on the contrary, I have positive evidence of its soundness in many cases. With regard to the case of uncomplicated retroversion, I have never seen the necessity for any operation, either that senseless method of fixing the organ by the vaginal route, or the more rational method—of course, on the assumption of its necessity—by the abdominal route. It would be taking a charitable view of the matter to say that errors of diagnosis are answerable for many mistakes in practice.

It was a maxim of the late Mr. Lawson Tait, to whose initiative gynecology owes so much, and who has left the impress of his genius indelibly stamped on the face of gynecology, "When in doubt, open the abdomen." But it was very much misunderstood. Mr. Tait did not mean that the abdomen should be opened to solve a doubt as to whether there was disease or not, but to ascertain the exact nature of a diseased condition of the existence of which there could be no doubt, which is a very different thing. I know that he shrank with horror from the practice of opening the peritoneal cavity and cutting a piece out of an ovary for microscopical examination and the purpose of diagnosis.

An idea of recent origin is this, namely, that the ovary secretes a something which is of service in the economy, and that whenever it is possible, in an operation involving of necessity the removal of only a part of the generative apparatus, one or both ovaries should be left. There is not an atom of evidence to support that idea. Yet there are those who do not hesitate to foud and urge the adoption of a practice on a pure and ridiculous assumption. It appears to have been assumed that because disease or loss of the thyroid gland—of whose function we know absolutely nothing definite—is sometimes followed by a certain train of symptoms, therefore the loss of the ovaries—of whose function we have definite knowledge—must be avoided because their loss will deprive the economy of something which the ovary secretes. Now the ovary was evidently devised for the purpose of perpetuating the species by providing an ova—of which each ovary contains a definite and limited supply—and for nothing else except it be to provide fees for their removal, not for their retention, and in the normal state, having discharged that function it atrophies, and like its neighbor the uterus, becomes not only a useless but a dangerous organ; for, as we only too well know, it is very liable to disease. In a very large proportion of cases disease attacks this organ long after it has served its purpose, and it seems to me rather one's duty to secure the removal of such an unsatisfactory appendage when opportunity offers

than to take steps for its retention. In my own practice I have had to remove both ovaries in a large number of cases. I have never willfully left an ovary when the uterus or its Fallopian tube has been removed; and over and over again patients, thus deprived of both these organs, have testified by word of mouth, confirmed by appearances, to a condition of good health, mental and physical, that had not been experienced for years previously, although these organs played no part in bringing about the disease which involved their removal. On the other hand, it has occurred to me to have to remove the second ovary after an interval of as many as eleven and even eighteen years. Surely the possibility of such an occurrence is a strong argument against the practice in question. Tait was much nearer the mark when he urged that the removal of the second ovary—as in the case of the appendages—should become a rule of practice, because of the frequency with which it was subsequently attacked.

(To be continued.)

Rocky Mountain Interstate Medical Association.

Salt Lake City, July 25-26, 1899.

(Concluded from p. 414.)

TREATMENT OF ACUTE CONJUNCTIVITIS.

DR. EDWARD JACKSON, Denver, called attention to the fact that under acute conjunctivitis are included, besides effects of eye strain and chemical and mechanical irritants, at least five distinct infections; and that successful treatment depends on exact diagnosis. Eye strain should always be eliminated. In all forms of infection complete cleansing of the conjunctiva at sufficiently short intervals is of greatest importance. For purulent conjunctivitis protargol is to be employed, with occasional applications of strong solutions of silver nitrate in the bad cases.

Mydriatics and cocaine should not be prescribed for acute conjunctivitis, since they are more likely to do harm than good. To aid in securing cleanliness of the conjunctiva, and to limit the danger from infection, all forms of the poultice, handage or compress should be carefully avoided.

DR. I. A. E. LYONS, Salt Lake City, has used weak solutions of cocaine, 1 to 1000, or 1 to 2000, in connection with boric acid, on account of its power to lessen congestion.

POINTS IN EYE WORK.

DR. R. F. LE MOND, Denver, dwelt on the important connections between eye lesions and brain disease. He believes that in astigmatism the degenerative changes often seen in the eye are for the purpose of relieving the strain that would otherwise fall on the brain.

OCULAR PROTHESIS.

DR. G. MELVILLE BLACK, Denver, called attention to the recent important suggestions of Snellen that artificial eyes should be made of different forms. The shell heretofore universally used was designed to be worn over a shrunken eyeball, and not to properly occupy the orbit after enucleation. There is also needed a concavoconvex form of artificial eye, to be worn over a small stump; and a double convex artificial eyeball to be worn after enucleation. Artificial eyes of these latter forms are not yet obtainable in this country. He has resorted to the expedient of filling in the cavity of the ordinary shell with a preparation of wax ("Gilbert's temporary stopping" used by dentists. This has proven very satisfactory, preventing the unsightly sinking of the artificial eye, and the accumulation of discharges and irritation of the conjunctiva by the formation of a vacuum behind it.

DR. EDWARD JACKSON thought this suggestion of great practical importance. It removes those objections to the operation of enucleation which has led to the trial of substitutes for it; such as the Mule's operation, which planned to keep a foreign body, the glass or metal sphere, permanently embedded in the tissues of the orbit.

GALL-STONES.

DR. I. B. PERKINS, Denver, found this subject of importance on account of the frequency of the occurrence of the condition, and the numerous, often obscure symptoms caused. He ascribed its greater frequency—of more than 2 to 1—in women to compression of the abdomen by dress, and a more sedentary life.

The distended gall-bladder must be distinguished from floating kidney, chiefly by its fixed position and fluctuation. He reported three cases in which operation had been necessary.

In closing the wound after operation, he sewed the gall-bladder to the abdominal wall with catgut. The stitches to close the parietal wound passed entirely through the abdominal wall; and those which came opposite the opening in the gall-bladder were introduced in this way: They were passed through the abdominal wall and into the gall-bladder. Then they were made to emerge from the gall-bladder before reaching the incision in it; and carried across the incision and made to enter the walls of the gall-bladder on the other side of the incision, and finally brought out through the abdominal wall. This made in effect, so far as the gall-bladder was concerned, a Lembert suture, inverting the lips of the wound so as to bring peritoneal surfaces in contact and secure prompt union.

In closing the wound at time of operation two or three stitches at the center of the opening in the gall-bladder were not tied. The wound was left open at this point, and packed to insure drainage. When drainage was no longer necessary, the surfaces were scarified and brought together and the stitches tied, without causing pain or requiring the use of an anesthetic.

DR. JOHN B. ROBERTS, Philadelphia, suggested that where a gall-stone was impacted in the common duct, the duct might be followed down to its entrance in the duodenum; and the duodenum opened opposite this entrance, a probe introduced into the duct, and the obstruction pushed back into the gall-bladder. The dilatation of the duct above the point of obstruction would commonly render this not difficult.

APPENDICITIS WITH ANOMALOUS POSITION OF APPENDIX.

DR. A. J. HOSMER, Salt Lake City, exhibited a boy operated for appendicitis, in whom no trace of appendix could be found through the usual right iliac incision; but a mass of inflammatory exudate could be felt far up and to the right. A median incision was made, and the gangrenous appendix removed from the midst of this mass. The colon seemed not to pass into the right iliac region at all. In this case pain was referred to the left side.

SUPRARENAL EXTRACT IN SURGERY OF EAR, NOSE AND THROAT.

DR. W. W. BULLETTE, Pueblo, Colo., read a paper on the value of this preparation, based on its use in 201 cases. He finds that it produces anemia of the tissue, reducing swelling, and preventing the hemorrhage that would otherwise obscure the field of operation. It also aids in securing local anesthesia, which is cut short by the hemorrhage that carries away much of the cocaine. Operations can thus be done without pain or loss of blood. There is little secondary hemorrhage, and no unpleasant effects. Since employing suprarenal extract cases presenting alarming symptoms of cocaine poisoning have been fewer. It reduces the dread of operations to a minimum.

BOTTINI INSTRUMENT FOR HYPERTROPHY OF THE PROSTATE.

DR. LEONARD FREEMAN, Denver, reported 8 cases operated on with this instrument. Of these, 5 were practically cured; 1 case improved at first, and continued to have no residual urine; but pain and frequency of urination were as bad as ever, and cancer was now suspected.

The instrument burrs grooves in the prostate. It consists of a platinum knife arranged like the male blade of a lithotrite; this is heated by the galvanic current, while any general burning of tissue in contact with the instrument is prevented by a stream of ice-water circulating through it. Operation with the instrument causes little pain or after bleeding.

Few men submit cheerfully to castration or even vasectomy. Bottini's operation causes no external wound. It can usually be done under local anesthesia. In the above cases general anesthesia was used once; and in two local anesthesia was not entirely satisfactory. The burned surfaces are practically sealed against absorption. The benefit is immediate. There are few relapses. The patient can move about within a day or two. The danger is less than by other modes of operation. Patients will submit to it when they would not submit to other operations.

MASTOID DISEASE.

DR. C. K. COLE, Helena, Mont., had seen sixteen cases of serious mastoid disease in the last twenty months, of which he reported four. These cases were essentially surgical, and should be seen by the surgeon. He advocated thorough open-

ing of the mastoid and irrigation with at least two to four quarts of hot sterilized solution. The periosteal incision is also useful in young patients. In extreme cases multiple openings are a rational procedure.

DR. W. W. BULETTE has found that mastoid disease followed acute otitis media; but with early paracentesis of the drum membrane, few will go on to the more grave condition. Heroic doses of epsom salts he has also found beneficial in preventing mastoid involvement.

DR. H. R. BULL, Grand Junction, Colo., recently met with two cases of mastoid disease following measles. He employed hydrogen dioxide as a cleansing agent in these cases.

TOXIC CAUSES OF INSANITY.

DR. HUBERT WORK, Pueblo, Colo., called attention to the generation within the body of poisons capable of causing mental alienation. Loss of weight and anorexia occur so constantly in connection with certain psychoses as to suggest a common cause. It is certain that insanities do result from prolonged digestive disturbances. Autoinfection from the alimentary canal may alone cause many cases. He reported four illustrative cases in which treatment directed to the source of the toxic influence brought about a cure of the mental symptoms. One was a case of digestive disturbances, cured in three months. The second was a case of rheumatism, cured in eighteen months. The third was a case of chronic cystitis, cured in four months. The fourth was a case of hepatic derangement, cured in two months by treatment of the hepatic disease alone.

Insanity is a symptom, and removal of its cause brings recovery. In no disease is proper medical treatment more needed at the beginning.

AUTOINTOXICATION AND BLOOD MORPHOLOGY.

DR. P. S. KEOGH, Salt Lake City, discussed the bearing of these subjects on the preparation of the patient for surgical operations. The older surgeons noticed that complications followed less frequently when the patient had been carefully prepared for operation by catharsis. Symptoms of indigestion and gastro-intestinal disease should always be carefully looked for. Examination of the urine might reveal a deficient elimination of solids. General anesthesia increases the danger from autointoxication by reducing the amount of oxygen in the blood. The examination of the blood, particularly with reference to the percentage of oxyhemoglobin, and leucocytosis, gives very important evidence regarding the patient's power of resistance.

GENERAL AND LOCAL INFECTION BY THE BACTERIUM COLI.

DR. J. N. HALL, Denver, reported two fatal cases of this form of infection. The organism, at first regarded as a harmless habitant of the normal alimentary canal, was now known to be one of the most important of the pathogenic bacteria. Probably the organisms designated by this name should be regarded as constituting an extensive group, presenting varying degrees of virulence, rather than as a single species. The first patient, after twenty-four hours' retention of urine, presented great numbers of the colon bacilli in the bladder. There ensued pleuritis, bronchopneumonia, pericarditis, a purpuric eruption, pyelitis, and perinephritis inflammation. In the second patient, also a male, there were numerous abscesses scattered over the body, and a purpuric eruption. The bladder was distended with acid, foul-smelling urine, containing sugar, and loaded with bacilli. Gas was generated in the bladder. The spleen was found septic, also the liver. The heart was large and fatty. There was nephritis, and a large abscess behind the upper end of the sternum.

EARLY DIAGNOSIS OF TUBERCULOSIS.

DR. A. M. HOLMES, Denver, made a plea for the early recognition of this disease, at a time when it was most curable. There are early evidences that the vital forces are impaired, which warn of danger, and if these are heeded recovery may be brought about. Impaired health, loss of appetite and weight, gastric disturbances, dyspnea and persistent cough should lead to careful and repeated examinations. The early examination of sputum is overrated. The bacteria may not be found. Concealed foci of infection may exist a long time before the bacilli find their way into the sputum.

"Cog-wheel respiration" he regards as an important early sign. Subnormal morning temperature is also an important symptom. Hemorrhage is not early in the disease; the study

of the blood is of greater importance than the study of the sputum, especially the examination of stained films, with differential count. There is no excuse for delay in the diagnosis of tuberculosis, for we have a certain test in the reaction produced by tuberculin. It begins with the injection of 1 mg. If no reaction follows, three days later 3 mg. are injected; and if this produces no effect 5 mg. may be tried. The injection is made in the evening and the reaction commonly occurs six to twelve hours later.

At the business meeting fifteen new members were elected, and Judson Daland and John B. Roberts of Philadelphia were elected honorary members. The following officers were chosen: President, Charles K. Cole, Helena, Mont.; vice-presidents, Leonard Freeman, Denver, and R. H. Reed of Wyoming; treasurer, Charles G. Plummer, Salt Lake City; recording secretary, Donald Campbell, Butte, Mont.; corresponding secretary, S. D. Hopkins, Denver. The next meeting will be held at Butte, Mont., the last week of August, 1900.

California Academy of Medicine.

July Meeting.

(Concluded from p. 415.)

INCUBATION PERIOD IN SYPHILIS.

DR. DOUGLASS W. MONTGOMERY brought up this subject, and said—The interval elapsing between the inoculation of the syphilitic virus and the appearance of the chancre seems to be subject to wide variations. This is unfortunate, as the physician is often obliged, in order to cover possibilities in foretelling the future, to keep an anxious patient, with a stricken conscience, a long time in suspense. Authorities disagree very widely. According to Max Joseph, for instance, this time of incubation varies between ten and forty-two days, with an average of three to four weeks. Personally, my impression is that this average of three to four weeks is too long; but impressions are not facts, and facts personally observed are very difficult to gather on this subject. Patients are inaccurate or unable to give the date of inoculation, or are often unable to give the time of the appearance of the chancre. The following is an instance where the observation was accurate and by a trained observer:

On July 10, 1894, a doctor who had been attending the meeting of the AMERICAN MEDICAL ASSOCIATION, held that year in San Francisco, came to me with a rosola of the body and limbs, and of the right palm and sole. There was a herpetic sore in the mouth, which, however, was not characteristically syphilitic, and there was some redness of the fauces and throat. There was also stiffness of the right masseter muscle, and some pain down to the margin of the lower part of the sternum, which was also thought to be muscular. Both right and left epitrochlear lymphatic nodules were enlarged, and there was a large packet of swollen lymphatic nodules in the left axilla. A diagnosis of syphilis was made, and the doctor then drew my attention to a dark red patch, about the size of a nickel, over the inner side of the lower extremity of the left ulnar, which he said was the site of an ulcer. He then told me that on May 15, while on the train, coming to San Francisco, he noticed in this situation a small sore which was painful and annoying, particularly because the edge of his cuff struck against it continually. This date is probably accurate, because while traveling one can by coincident circumstances be more precise about dates than in the ordinary routine of life, and, as before stated, the inconvenience caused by the edge of the cuff, drew early attention to the lesion. This small sore grew larger, and became covered with a black scab, and then swelling of the left epitrochlear lymphatics and of the nodules in the left axilla was noticed. Pronounced secondary lesions were first noticed on July 5, although for a month previous he had suffered from malaise and pains in the limbs. He said that shortly before leaving home, while circumcising a patient suffering from a venereal sore on the prepuce, he pricked himself in the arm with the point of the knife. On returning to his home in the Middle States, he consulted his books and sent me the exact date of the above-mentioned operation, which was April 29, 1894, or sixteen full days previous to noticing the sore on his forearm. In his letter he also said that the patient he then circumcised was, when again seen, suffering from the most virulent secondary symptoms he

had ever seen. The doctor had on April 29 circumsised a syphilitic patient, and during the operation pricked his arm slightly with the point of the knife. In the region of this puncture, on May 15, or sixteen full days after the operation, he noticed the sore, and on July 5 cutaneous symptoms were manifested. He consulted me July 10. There can be no doubt that this lesion on the arm was a chancre; its existence before general manifestations appeared, together with the large packet of enlarged lymphatic nodules in the axilla, were in themselves excellent evidence of this. In addition was the fact of his having abraded himself with a knife which he had used in circumsising a patient with a venereal sore, who broke out shortly afterward with symptoms of virulent secondary syphilis.

DR. DUDLEY TAIT—I do not think there is anything positive as to the period of incubation; I think it a very variable quantity. I have personally studied this matter a little, and that is the result of my own observations, as well as the opinion of most authorities. I remember two patients who presented excellent opportunities for observation, as they were both infected extragenitally. The first patient was a girl who had been kissed on the neck by a young man infected with syphilis; she had recently suffered a slight burn on the neck, at the site of the kiss, and this was not quite healed up at the time. Nineteen and a half days after the kiss a sore appeared at this point, and became an ulcer. I did not make a correct diagnosis at the time, but after curetting tried to graft over the ulcer. In making the skin slices from the arm of the lover of the girl—himself uninfected—I infected him with syphilis, which first appeared eighteen days after the operation, and was a beautifully typical case. A third case of infection occurs to me, in which the patient was in all probability infected in a barber shop by a slight cut with a razor. Though two other cases of syphilitic infection are reported from the same barber shop, the source of infection with this man is not absolutely clear, for the reason that he was then living with a woman who had had syphilis, and she may have kissed him on the cheek at the site of an abrasion. The time in this case, and the two others from the same shop, was twenty days.

DR. S. J. HUNKIN—In the cases just mentioned by Dr. Tait I should think the average period of incubation as mentioned by Dr. Montgomery was substantiated; they were all from eighteen to twenty days.

DR. TAIT—There are cases on record where the period of incubation has been as great as 100 or 110 days.

DR. MONTGOMERY—There can be no doubt that the time of incubation is a variable one. I remember some interesting cases in point reported in the *Lancet* some years ago. Some soldiers had had themselves tattooed by a person who was afflicted with syphilis. In the process he dipped the needle with which he made the tattoo punctures into his saliva. The men could all be carefully watched, and the time before the appearance of the chancre in some of them was quite extended; one man went for eighty-nine days before the chancre made its appearance on his arm. There are also some cases reported in which the period of incubation was very short. I believe Taylor mentions one case in which the chancre appeared on the patient after two or three days.

Chicago Academy of Medicine.

Regular Meeting, June 23, 1899.

(Continued from p. 116.)

With reference to pulmonary tuberculosis, the presence of immunity here is one of considerable importance, from the fact that so many persons during some period of their life are thrown in contact with persons who have consumption and die of consumption. This may be either through their relationship with such persons in schools, boarding-houses, or from marriage, by constant and prolonged contact for months or years, during which they show absolutely no evidence of infection. They are apparently perfectly healthy and live a long time afterward without any affection, while subject to this constant contagion during the period of their existence. For this reason I believe there is considerable natural immunity in tuberculosis. The majority of tubercular infections become most highly developed at about the time that maturity results.

They are not so evident except in the form of bone tubercularis and some special forms in the spine itself. But I think at the beginning a large number of cases of pulmonary tuberculosis, considering that phase of it, have their beginning in the child life of the individual, and I am also of the opinion that tuberculosis may remain latent for a considerable period when some circumstance, as an unusual exertion, or an intercurrent disease, may furnish an opportunity for the tuberculosis, consumption more particularly, to become active and for the individual to have a sudden extension of the disease and die within a short period.

Now, as to the relation of the child to tuberculosis and measures for its prevention in after life: If tuberculosis begins during child life we should, as far as possible, prevent the individual from coming in contact with tubercular material. We should not feed children on milk of tubercular cattle, because I do not believe it is necessary to have intestinal infection from the simple fact that tubercular milk is used. On the other hand, it is fairly clear to my mind from reasoning on the subject, that tubercle bacilli can live in the intestinal canal and pass into the circulation and become localized at some distant part of the body without any infection of the intestinal canal at all. We find by inoculation experiments on animals, injecting tubercular milk under the skin at different points that we can produce a localized tuberculosis in the spleen, the liver, and in the lungs. The same is true of pigs fed on the milk of cows that have tuberculosis. There is frequently no infection of the intestinal canal, but we have tuberculosis of the liver and of other internal organs with, at times, tuberculosis of the lungs. For that reason, the food should be one that is free from tuberculosis. This is a question by itself, and even a large one, as far as cattle affected with tuberculosis are concerned.

Another point of great importance is that children who represent a condition of immaturity, apparent defects in natural immunity, should be selected as special examples for training toward the development of their natural immunity. We have all forms of physical examination as persons become older. When children start in school there is no attempt made at physical examination. That is a point of considerable importance, as brought out by Dr. Scott, and those children who appear to be lacking in natural immunity should be selected from the pupils for special courses of development along those lines, to guard against the possibility of developing those diseases later in life. We know the good effect of sanatoria and climatic changes on individuals when they are actually infected with tuberculosis. What, then would be the possibilities in individuals or children who show what is generally looked on as a tubercular tendency, that is, absence of robustness, failure of natural immunity, if they are placed under similar conditions to those individuals who are actually infected with tuberculosis and who recover. Then, if that can not be done, as far as tuberculosis is concerned, gymnastic work and special training should be had, so that there shall be a complete elimination of the effete products of the body, keeping everything clean, because we know bacterial infection is especially prone to take place where there is a nidus allowing bacteria to remain for a certain length of time, sometimes longer in the case of one form of bacterium, sometimes shorter in the case of others. The bacillus of tuberculosis may remain for a considerable time at one point, and then under suitable conditions develop and begin its serious work. In the child, if taken in hand in a proper manner and given a proper course of training, so that the areas of least resistance in the body are renovated, the chance of tuberculosis developing in after life is greatly lessened, and the chances for developing a strong man or woman in the end are very much more certain than if the child has to educate itself and care for itself in after life.

MENTAL AND NERVOUS ASPECTS.

DR. JAMES G. KIRKMAN—The relations of childhood to adult defect and disease are, from a psychiatric and neurologic standpoint, determined by three factors: heredity, the reaction of the organization to the periods of stress, and the results of disease and environment after birth. The development of man after birth is marked by periods during which certain important functions are, so to speak, learned by the organ, or other functions pass into disuse. The infant is a being

wrapped up in its instincts of self-preservation. The primary ego is predominant, and the child is an egoistic parasite. Development of a complex mental state tends to check a simple explosive propensity in accordance with the well-known law of evolution from the simple homogeneous to the complex heterogeneous with a loss of explosive forces. The forebrain is a checking apparatus against the lower and more instinctive natural impulses. The higher its development, the greater its tendency to subordinate the particular to the general. In training the infant, the difference between its explosion of anger and egotism and expressions of suffering or need must be recognized. Many a mother, by taking the child up when it cries, irrespective of the cause of the crying, has laid the foundation of that future selfishness which develops into the egotist who keeps within the law, or into the criminal who passes beyond it. With this training, conscience begins to assume its priority, the forebrain acts as a check on the purely vegetative functions, and the secondary ego develops to take precedence over the primary. If, as already stated, through lack of training, the checking functions are weakened, disordered predominance of the natural instinct occurs, and, when totally lost, a criminal appears who opposes the ethical order of society, a parasite of the worst kind, who not only lives on his host, but destroys him in so doing. During this period of stress the child expresses the fatigue of its nervous system by restlessness, which often finds expression in crying and explosions of temper with motor expressions even extending to convulsions. The balance between the system can only be secured by full development of all the checks—which are the latest and best acquirement of the race. The seeming suffering consequent on the period of the first dentition, however, often leads, through misguided albeit natural sympathy, to simulation of the primary ego of the child and hence to the retention of the child at a period of mental development that implies an arrest of the mind and moral faculties. This arrest implies, during the subsequent period of the second dentition and of puberty and adolescence, increased training to eradicate tendencies springing from the unchecked primary ego. Otherwise these render the child unsuited to his mental and moral environment. The seeds of what is afterward cruelty toward animals, playmates and relatives are often sown by the attention given to the invalid infant during the troubles resultant on the constitutional evolution of the first dentition. The child mentally is in the condition of primitive man, who was the center of the universe, owned everything, but feared nothing except the unknown. The mental state of the infant at this time, as later, resembles, so far as the fear of the unknown is concerned, the mind of the savage and the animal. A lion which would face a man will run away from a suddenly-opened umbrella. The child, like the savage, does not distinguish between its dreams, its beliefs, and actual perceptions of the senses. This is healthily shown in the way it regards its doll, and unhealthily—unless corrected, by an instinct of refuge-taking in the arms of the nurse or parent—in its fear of the unknown. This unknown, until quite late, does not include death, but some occult trifle. As any condition of disease or disorder interfering with the balance which makes up the nervous system creates uncertainty, as this mental uncertainty increases fear of the unknown, the child during the period of the first dentition accumulates a mass of fears which dominate its mental life unless corrected by refuge-taking and training in like manner as such fears do primitive man, the persecutory delusional lunatic or the neurasthenic. The two last, through denudation of checks acquired during infancy by illness, have returned to the condition of man and the child. In proportion as the infant is surrounded by judicious care during this period, and not by maudlin sympathy which defeats its own objects, will the fear of the unknown be so controlled as to render easy the child's training during subsequent periods. During this period, training should be directed to developing the tendency to the full effect of refuge-taking by limiting this to occasions. While the spoiled child is often the offspring of a defective, its defects are decidedly increased by the training given by its defective parent. Maudlin sympathy, whether for animals, children or invalids, is an expression not of the secondary ego, but of the lowest primary, a mere pose to secure personal gratification at the least possi-

ble expense. It tends to develop its own likeness in the persons to whom it is applied. Good wine makes very sour vinegar. Parental affection of the defective is thus very often worse than neglect. Expressions of either the disorder or the passions of the child during this period are generally motor. The child cries, whether from anger or unsatisfied desire, in a convulsive manner accompanied by marked motor manifestations almost approaching convulsions. Like the primitive races, convulsive pantomime repeats or adds to speech. These two conditions are so intermingled that while on the one hand physical treatment of the conditions underlying convulsive tendencies will cure them, or hygiene will prevent them and thus prevent explosions of anger and egotism to which they give rise; so, on the other hand, will mental and moral treatment of the egotism and anger prevent convulsive tendencies. The humoring of the supposed invalid child at this period has the same bad effect as the humoring of a chronic invalid. As the child does not distinguish clearly between its suddenly-conceived thoughts and what it sees, hears or feels, hallucinations may occur. Some of them are regarded as lies, some are ridiculed, others are humored, all of which procedures tend to fix these hallucinations in the mind to be retained in after-life.

The second period of stress is marked by the important maturity of the jaws and teeth, but while the stress of development is as great during this period as during the last described, it is not so obviously related to the development of the teeth as in popular opinion to be ascribed to that cause alone. The factor, therefore, which tended to interfere with training during the first period of stress is not so obviously present. Sympathy for the child during the second period of dentition is much less maudlin and its judicious exercise is much more frequent.

The second period is marked also by developments in the alimentary and other systems. A species of contest for existence has resulted between the central nervous system and the other systems whose effects are felt during the next period of stress. During this period, provided the struggle for existence goes well, the average child does not display any special disorder, but if, from inherited or congenital defect, development of the system does not proceed equally, then evidences of stress occur. Among the nerve expressions likely to result from this stress are the following:

Neuroses.—Convulsions, nervous laughs, nervous coughs, spasmodic hicough, spasmodic sneezing, stuttering, tics, neuralgia, chorea, epilepsy, somnambulism, ecstasy and hysteria.

Psychoses.—Hallucinations, anomalies of character, aberrant sentiments—love jealousy, anger, pessimism—imperative conceptions—pure; attended by impulsive acts (arson, suicide, destructiveness, homicide, alcoholism, theft, rape, non-criminal acts)—idiotcy, imbecility, night terrors, mania, acute confusional insanity, melancholia, transitory frenzy, stuporous insanity, katatonia, moral imbecility, paranoia, periodical insanity.

In many respects these nerve expressions of stress are remains of the imperfect training of the first period; in part, they are evidences of that precocity which is an expression of premature senility. The struggle for existence between the higher nervous system and the ordinary functions of the body partially results in victory for the latter. In man from about the third year onward further growth, though an absolute adaptation to and environment, is to some extent growth in degeneration and senility. It is not carried to so low a degree as in the apes, although by it man is to some extent brought nearer to the apes, and among the higher races the progress toward senility is less marked than among the lower. The child of negro races is scarcely, if at all, less intelligent than the Caucasian child, but while the negro as he grows up becomes stupid and obtuse, the Caucasian man retains much of his child-like vivacity. In the highest human types, as represented in men of genius, there is a striking approximation to the child type. The average man of genius is comparatively short and large-brained—the two chief characteristics of the child. His general facial expression, as well as his temperament, recalls the child. The aim, therefore, of education at this time should be directed to the creation of a system of

balance which would prevent that operation of the law of economy of growth whereby a too much stimulated nerve being weakened, the rest of the organs gain at the expense of the organ controlled by it. Neglect of this principle checks further growth or unduly precipitates the approach of the next period. This is shown in some of the nerve expressions of stress. It is evident that imperative conceptions sometimes take a form connected with the continuance of the race which should not appear in the ordinary course of events until after the onset of the next period of stress, between 14 and 25. As the third great period of stress is marked by development in the bony structures, especially connected with the teeth and jaws, the systems connected with these not unnaturally affect the skull and face and set in action causes which, if not duly balanced with the system as a whole, tend to check brain growths or developments as to associations.

The three periods described are not inaptly designated the period of the first dentition, the period of the second dentition, and the period of puberty. The last, albeit better designated as just described, could also be entitled the period of the third dentition, since in it the dentition is finally completed, the wisdom teeth appearing, if at all, during its close. During this period the bones of the pelvis which enclose the structures devoted to the continuance of the race are finally perfected. The period is marked by the contest between two great functions, one intended for the continuance of the race, the other for the systematization of the various intellectual and other checks for the benefit of the individual which have been acquired during the first decade and a half of life.

In consequence of this struggle, the mind, which, during the previous period had acquired somewhat of a balance, has new factors introduced which create for the time being a consciousness of instability that underlies the doubting tendency so often present during this period. The imperative conceptions described as occurring during the previous period, are now more frequent and more likely to be attended by impulsive acts. Furthermore, the imperative conception is less likely to be dominated by a healthy, suddenly acquired conception. For this reason suicide, homicide and other imperative acts are much more frequent during this period than during the preceding. The introduction of the potent influence of the great instinct of the race is also a disturbing factor, especially as this instinct can be aggravated by local disorder apparently without relation to it. In the previous period many of the impulsive acts were committed without consciousness of their moral significance. In the present period this moral significance is extended even to acts not ordinarily regarded as coming within the scope of ethics. This mental state is often unduly encouraged because of the belief that it is an expression of ethical significance, whereas it is but an additional evidence of egotism to be discouraged. For this reason, an undue struggle for class position breaks down the individual since the worry engendered by possible failure destroys the balance between the different mental faculties. It is worry, not study, which is the cause of the many nervous and mental difficulties resulting at this period.

The influence of disease, of improper food and environment may even in congenitally sound individuals produce any of the neuroses and psychoses already mentioned.

SCHOOL STRAIN OF CHILDHOOD IN ITS RELATION TO ADULT DISEASE AND DEFECT.

PROF. COLIN A. SCOTT.—School strain falls on those who are least able to bear it. The first thing in considering this question is the defectives. During the last year under the auspices of the Chicago school board, I conducted a series of examinations, directly and indirectly, of 8750 school children. This is only a small percentage of the children of our public schools of Chicago, but the percentage of defectives among this number was about 18 per cent. of those examined. The defects that were sought for, in the first place, were those of the eye and of the ear, and in the second place, such nervous defects as could be observed by the teacher in the ordinary course of school events, and such as a slight or superficial physical examination could detect. The problem was to adapt school work to the condition of the children, as well as to make it of service in assisting the children. Slight defects of hearing I find are exceedingly common. I have full descriptions of hundreds of cases. A concrete case will be of advantage.

A pupil was observed by his teacher to be careless in his work; he was not as far advanced in his grade as the rest of the boys. He did not pay very close attention to what was being done; he threw things around, made considerable noise but when spoken to sharply, paid attention. This case was referred to me. After hearing the description, the first ques-

tion I asked of the teacher was whether she had tested the hearing of the child, and she said she had not done so. On examination, by the teacher, it was found that this boy was partially deaf in both ears, although the deafness was not recognized either by the parents or any of the teachers before a special examination was made to reveal it. In such a case the boy did not need the services of an oculist to reveal the fact that he was hard of hearing, nor do many of the cases. This in my opinion is the function of the teacher. The teacher or parents, more particularly the teacher, should be able to observe these defects, although it is admitted that for treatment or a more careful diagnosis we must obtain the services of members of the medical profession. It requires a specialist to make a thorough examination to determine whether a child has defective hearing or not; still, teachers can make use of the watch-test for determining varying degrees of acuteness of hearing. As a result of this method there are hundreds of cases that have been recognized and whose condition in the school has been improved.

In the examination of the eyes we have the same necessity for examination on the part of the teacher. President Harper, of the University of Chicago, told me that until he was 12 years of age the world was to him a dim and misty place; that neither his parents, his teacher, nor physician knew that he was astigmatic. It seems to me, we need more strenuous efforts made to open the eyes of the public as to the importance of some recognition of the ordinary defects of childhood.

The other defects, those of the nervous system, are more difficult of recognition by the teacher. There are many children in the schools who are somewhat like the case I saw a few days ago. I observed a lesson which was being taught by an enthusiastic teacher to an enthusiastic class. There was apparently nothing lacking to a superficial observer. I watched the children carefully, and I saw many cases similar to the one I am about to describe.

A little girl during the first twenty minutes of the lesson was all excitement. She listened to the teacher very attentively; her face was flushed. During that time I saw two distinct flushes pass over her face. She surpassed her companions in answering the questions of the teacher. But at the end of twenty minutes she collapsed. Her head drooped, she put her thumb in her mouth, gazed vacantly, then tried to arouse herself, but to no avail. She had passed through a condition of irritable weakness to one of considerable exhaustion, both phases of undue fatigue. I asked the teacher if she had observed this child, and she said she had not particularly. She had noticed, however, that the child was very bright, and answered questions much better than any of the other pupils. She had not observed the flushes or other signs.

Now, it seems to me, if the eyes of the teachers were opened to the significance of these observations, it would have a great effect on the development of children in school. It would also have an indirect effect on children other than those who are defective. Our present examination system of education is arranged like a series of hurdles, over which our pupils are expected to pass, cart horses and race horses alike. Such a system is not best adapted to develop the brain of the child. It overtaxes and strains the nervous system, producing injurious effects. School studies should be arranged in such a way that the work is adapted to each individual pupil whether it results in the passing of a definite examination or not. The aim is to round out the development of the child, making as symmetrically developed an individual as possible. In this connection the most important discovery in child-study is what I have been accustomed to call by the name of "nascent periods." In the mental life of the child there are periods which are favorable for the growth of certain organs or combinations of organs. We know that the heart, for example, has different periods of growth, partly independent of the rest of the body. The same is true of the liver as well as other organs. Growth in height follows the same law. There are distinct periods when growth in height is accelerated. A similar periodicity is observed with respect to mental activities and, as Flechsig shows, with different groups of brain fibers. These nascent periods are important to observe, and I have studied some of them with care. (Illustrations were given.) It requires a long time to settle this matter scientifically, in such a way as to be helpful, to determine the limits of each nascent period, and what it is that grows out of it. There is a fertile field for investigation in this line, extending from the intellectual into the emotional and moral qualities. I have considerable data on that matter. All of these things are materials which concern the proper education of the child. Teachers and educators are becoming interested in child-study, and are beginning to realize its importance.

(To be continued.)

THE

Journal of the American Medical Association

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance	\$5.00
Foreign Postage	2 00
Single Copies	10 Cents

In requesting change of address, give old as well as new location.

Subscriptions may begin at any time and be sent to

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

No. 61 Market Street, Chicago, Illinois.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, 10 Washington St., Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting, of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

Those new members of the Association should send their annual subscription direct to the Treasurer, Dr. Henry P. Newman.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the Editor, and all communications relative to the business of the JOURNAL, proof-sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 61 Market Street, Chicago.

Original communications are accepted with the understanding that they are exclusively contributed to this JOURNAL.

SATURDAY, AUGUST 19, 1899.

BRAIN WEIGHT AS INDEX OF INTELLIGENCE.

Opinions regarding the weight of the brain being an index of intelligence have fluctuated within wide limits. Before the days of cerebral localization there were many physiologists who believed that an individual's intelligence was directly proportionate to the total weight of the encephalon. A large brain meant large mentality. As the encephalon began to be more closely investigated and the post-mortem records were more carefully compared, it was discovered that large brains were not always possessed by those who exhibited the highest intelligence. In fact some of the greatest thinkers in the world were the owners of brains much below the average in absolute weight and size. This apparently upset the earlier physiologic dicta in regard to mind activity being dependent on the physical brain. The discussion at once assumed two aspects. Some physiologists frankly declared that mind was not solely a product of brain function, but that it was an entity dependent for its manifestation on the brain, but nevertheless quite separate and distinct from the latter. Scalpel and alembic might analyze the brain, but they could do nothing to explain the mind. These views characterized the metaphysical physiologists. The materialistic physiologists, on the other hand, took the ground that the mind was solely and *in toto* a product of brain activity, and that accordingly it must follow that a large mind necessarily presupposes a large brain. In attempting to harmonize their views with the apparently contradictory observation that many of the most intelligent men were the possessors of undersized brains, these physiologists were again divided into two camps, as it were; some taking the

ground that the cellular richness of the cortex, including its convoluted development, was the real indicator of intelligence irrespective of the total brain weight, while the others maintained that the total brain weight was the potential indicator though not necessarily the actual one. The latter insisted that a large brain represented large capacity for mentalization, and that the brain, like the muscles, was capable of development, and the greater that development so much the greater will be the resulting mentalization. Its potentiality, according to these physiologists, rather than its manifested activity is what is shown in its total weight.

The average weight of the encephalon of a well-built European is about 1380 grams. As an argument in favor of brain weight being an indicator of mental power, real or potential, it is instructive to recall that Bismarck's brain, the largest on record, was calculated to have weighed about 1867 grams; while the actual weight of Cuvier's was 1830, Byron's 1807, Kant's 1650, Schiller's 1630 and Dante's 1420. It is unfortunate that in most of these instances the total body weight was not at the same time estimated, for that might have had some bearing on the question. Many of these large brains, as for instance those of Cuvier and Rubenstein, were associated with early hydrocephalus, which would seem to argue in favor of brain development as an antecedent of mental activity if not of actual mental development. So many brilliant thinkers have been hydrocephalic that we are forced to think that the expansion of the skull by reason of which the brain was later on enabled to grow, was an advantageous circumstance, in the enhancement of the individual's mental potentiality.

As an illustration of great mental power with a total low brain weight, Gambetta is often cited, as his brain weight was below those of the average. It should be noted, however, that the speech-area of this great orator was uncommonly well developed, a fact which leads us to immediately ask the questions, what is intelligence? How much of it do great thinkers actually possess and exhibit? What relation does it bear to the special cortical areas whose functions we are now acquainted with? and do these special areas exhibit an increase in size and weight always in correspondence with the respective forms of special intelligence? Taking all these questions into consideration it would seem that brain weight, not *in toto* but in part, is after all an index of intelligence. Unfortunate is it that the variety of intelligence revealed by individual great thinkers has not been taken more into consideration when their brains were being examined post-mortem. It is exceedingly rare, if the phenomenon ever does happen, for a man to manifest a universal intelligence equally strong and exalted in all directions. His brilliancy is more apt to shine in one special department of knowledge, and all his other acquisitions or natural powers will be subsidiary to this. In his "Intellectual Life" Hammerton goes so far even as to say that a man can not possess two languages, certainly not three, with equal accuracy, for as one be-

comes more and more facile therein the other loses! Hence, intelligence, great as it may be in some individuals, is after all a more or less limited mental phenomenon. If this be so, the character of that intelligence should be given due consideration in the study of brain weight as its indicator. Many brains have been studied from this standpoint, and to a remarkable degree there has been observed a constant increase in size and weight of special parts that bear a relationship to the kind of superior intelligence manifested. Great artists, for example, in whom the visual imagination is highly developed, have been found to show a corresponding increase beyond the average in size and weight of the representative visual center in the occipital lobe.

The pendulum is thus swinging back again and in a newer but somewhat different sense, brain weight, including brain development with convolitional and cellular increase, is shown to be more or less of an index of intelligence.

DILATION OF STOMACH DUE TO COMPRESSION OF DUODENO-JEJUNAL JUNCTION BY MESENTERIC ARTERY AND ROOT OF MESENTERY.

P. A. Albrecht¹ describes two cases in which uncontrollable vomiting and dilation of the stomach, and other symptoms of ileus, developed soon after operations on parts of the body not in direct connection with the abdominal organs. In the post-mortem examination of both these cases, it was found that the dilatation of the stomach ceased promptly at the superior mesenteric artery, and that there was no organic stricture of the duodenum at that point. In the second case it was found that when the mesentery was pulled down, then the superior mesenteric artery became tensely stretched over the duodenum, so that the latter was flattened out from before backward against the spinal column. The small intestines were crowded down into the true pelvis; but there were no adhesions which would hold them in the pelvis.

In 1842 Rokitansky suggested that intestinal obstruction might result from the pressure of one part of the intestine on another. Glenard pointed out that the duodeno-jejunal junction may become compressed by the mesentery and that the superior mesenteric artery is accompanied by a number of bundles of connective tissue, which form the real suspensory ligament or root of the small intestine. If the small intestine should sink into the true pelvis, then a weight equal to about 500 grams would pull on this ligament at the duodeno-jejunal junction.

Kundrat describes several cases in which he found the stomach and duodenum greatly dilated, the small intestine crowded down into the pelvis, and complete compression at the duodeno-jejunal junction by the mesentery. He believes that the cases are due to the peculiar form of the mesentery. Schnitzler also describes two cases, in one of which the duodenum was

completely obliterated by a band, which proved to contain the superior mesenteric artery.

Albrecht calls attention to the fact that the ascending part of the duodenum, at the point of the superior mesenteric artery, is usually not round but flat, and that when the finger is placed in the duodenum under the artery, and the small intestine pulled down into the pelvis, the lumen of the duodenum becomes smaller. Albrecht believes that an overfilled stomach, especially when previously dilated, would press on the small intestine, and that in consequence the superior mesenteric artery would compress the duodenum against the spinal column and cause a true mechanical obstruction so that fluid would be unable to escape and enormous dilatation of the stomach and duodenum would result, which would only tend to aggravate the condition. In the same way chronic dilatation of the stomach might also become an indirect cause of obstruction of the duodenum. The paresis of the stomach which results after narcosis and surgical operations may be assumed, with Albrecht, to lead to similar results.

The principal symptoms of this form of obstruction of the stomach and duodenum are the following: profuse vomiting, the vomitus containing bile but not feces; great distension in the region of the stomach, but absence of intestinal meteorism. The previous history of dilatation of the stomach would be important. There would also be found dulness above the symphysis, owing to the compression of the small intestines crowded into the pelvis. Albrecht believes that a number of cases which die apparently as the result of acute gastrectasia belong to this category of ileus.

As regards treatment, then, gastrectasia should be remedied, as a prophylactic measure; during the acute attack the patient should be put in the knee-chest position, so as to liberate the small intestine from the pelvis, and the stomach should be emptied.

ORIGIN OF DERMOID CYSTS OF OVARY.

In the June issue of *Progressive Medicine* Dr. John G. Clark presents an interesting review of the recent research of Kroemer concerning the histogenesis of the so-called dermoid cysts of the ovary. As the final result of his review of the literature and of his study of twelve cases, Kroemer reached full agreement with Wilms, who was the first to offer any proof of the ovulogenous development of these tumors. The theory which has ascribed these tumors to inclusion of the ectodermal layer, in the early growth of the embryo, has never been satisfactorily proven. The principal objection to this theory is that ovarian dermoid cysts do not correspond to the type seen in the superficial parts of the body, where dermoids undoubtedly come from the ectoderm, because they contain only those tissues which are found in this layer. Arnsperger¹ reaches the same conclusions as Wilms and Kroemer. One of the tumors which formed the basis of Arnsperger's investigation was as large as a goose egg.

¹ Hammerton: Intellectual Life, Part III, Letter viii.

² Virch. Arch., 1899, 156, Heft 2.

¹ Virch. Arch., 1899, 156, p. 1.

and grew in the right ovary of a woman 27 years old. The special feature of this tumor was a complete trachea, and also structures which correspond to the stomach and intestines, as well as a distinct head region. The development of this entodermal tube was especially interesting, because the individual parts of which it was made up maintained the same relationship to each other as in a rudimentary embryo. The growth originated entirely from the ovary. In two other cases he also found distinct entodermal elements. The number of instances of so-called dermoid cysts of the ovary in which entodermal elements and rudimentary organs of various kinds, including more or less fully developed brains and retinal epithelium, as well as true optic vesicles, rudiments of ears, cranial nerves, ganglia, a quite complete medullary tube, as well as the remarkable observation of Kroemer of a sympathetic plexus within the muscular wall of an intestinal tract, are becoming quite numerous. As already indicated, dermoid cysts usually develop from the inside of the ovary; in a few instances the tumor has been attached to the ovary by a thin pedicle. As pointed out by Kroemer, these formations are neither simple tumors nor cysts, but consist of a cystic portion and of the varied embryologic elements enumerated. The changing form of the cystic portion, and in the growth of the dermoid itself, gives rise to the variability in the general appearance of the tumor. According to the views advanced by Wilms, Kroemer, and Arnsperger, the cystic portion of these growths is of follicular origin, while the embryologic parts are of ovulogenous development. In an observation by Lee a dipinnate dermoid maintained the same relationship to the follicular cavity as the ovum to the follicle. Sutton made the same observation in the case of a dermoid cyst in the ovary of a mare. Kroemer likewise made out a similar relationship of the tumor to the follicle in two cases. The epidermal lining of dermoid cysts, therefore, appears to be derived from the ectoderm of the ovum. It would, therefore, seem that a dermoid cyst of the ovary in reality represents an ovum, and that the cyst is the more or less successful result of parthenogenesis. Kroemer points out that it is hardly correct to attribute the development to parthenogenesis proper, because this is a normal process in lower plant and animal life for the propagation of species, while in this case it was a distinctly pathologic process, in which the growth, differentiation of organs, etc., are atypic and occur without any definite law. The dermoid cysts of the testicles are explained by Wilms in somewhat the same manner. In this case the various portions of organs and tissues are derived from pathologic growth of the sperm cell. It has been suggested that these tumors be designated as embryoma, and it is thought that the development of the structures from the single ovum or sperm cell is greatly hindered, because of the confinement in the small space of cyst, so that only rudiments of embryos are developed. In what manner the ovum or sperm cell is stimulated to this anomalous growth is at present entirely mysterious.

CURATIVE VALUE OF GYNECOLOGIC OPERATIONS IN INSANITY.

The effect of disorders of the reproductive organs in causing or perpetuating mental disorders in women has been for a long time a vexed question among practical alienists. A certain proportion, probably the majority, are dubious as to the importance of this factor; many see objections to any very general extension of gynecologic surgery in asylums except where absolutely necessary. On the other side, we have some ardent enthusiasts who see in gynecologic diseases one of the chief active factors in the mental disorders of women. An article in the July issue of the *Dominion Medical Monthly* is in evidence of this; it is one of several that have recently emanated from Canadian sources maintaining the necessity and importance of gynecologic work in the insane. The author, Dr. Ernest Hall, has no hesitation in stating his convictions. He writes, however, with the heat of the reformer when he speaks of the opposition of "vested prejudices and conventionalities" that must be disturbed, and of dyeing the chariot wheel of progress red with the "political and official life blood of those who affirm that present methods are adequate." His statistics, so far as he gives them, however, are of interest; out of 70 female insane patients, 33 of the most intelligent and favorable cases were selected for examination; 30 of these cases were found fit cases for operation and 7 were operated on with the result of three cures, mental and physical, 2 improved, 1 death, and 1 with the result still in suspense. He tabulates 12 cases, the above being included, from which a better estimate of the strength of his position can be made. One of the twelve is noteworthy, a cure of melancholia of ten years' standing by double castration. One of the other two cases cured was insanity of only three weeks' standing, and the other of only a little over a year. It seems quite within the range of possibility that the production of an artificial menopause might have sufficient effect to materially modify the patient's mental condition, but as none of his cases has yet been over seventeen months under treatment, there still remains some rational basis for reservation of opinion as to the permanent cure, and the results are possibly less startling than he claims. The personal equation of the physician needs to be taken into account in the case of the estimate of the cure or improvement of the insane, as has long since been pointed out by Pliny Earle and others. This element has to be considered to some extent in any case, and all the more if the physician has enthusiastic views on any special theory or mode of treatment. On the other hand, we have the varying opinions among gynecologists and our knowledge of the variations of practice among them.

Insane women are not capable of deciding for themselves, and the physician's responsibility is therefore increased in their case. It is not remarkable, therefore, that asylum physicians should be cautious in advocating any general gynecologic crusade among their patients.

It is, moreover, unjustifiable to assume, as does Dr. Hall, that they are guilty of what is practically criminal neglect in not so doing. The opinions of experienced alienist physicians and neurologists not in accord with those of Drs. Hall, Bucke, Rohé and others on this subject also do not go for nothing in this matter; they are certainly numerous enough and sufficiently eminent in the profession to carry weight. The introduction of women physicians into hospitals for the insane, for the special duty of gynecologic work, has met some of the demands of the reformers, but these are by no means unanimously enthusiastic over the value of operative gynecology in the treatment of insanity in females. It is easy to suppose that any considerable operation may affect the mental condition temporarily for the better, as it does the attacks in epilepsy, but that enough permanent improvement can be brought about in this way may possibly be as dubious in the one case as in the other. It can hardly be said to have been proved as yet.

Considering all these facts, it seems safest to say that while an insane woman has as good a right to be relieved of needless suffering as any other, yet there are obvious reasons why judicious conservatism is advisable in the practice of gynecology in the insane.

AN EDITORIAL OVERSIGHT.

In its issue of August 5, the *N. Y. Medical Record* editorially gives credit to the American author, Dr. Leonard Corning, for priority in the method of local anesthesia by intraspinal injection, a method lately rediscovered by Bier of Keil, and published by him in the *Deutsche Zeitsch. f. Chir.* last April. The recognition is an excellent thing and the editorial prominence given it by the editor of the *Record* is altogether admirable, but it comes a little late. If he had thoroughly perused an up-to-date journal and read Dr. Matas' review of the progress of surgery in our souvenir issue of June 3, he might have given it in his editorial on June 24, on "A New Method of Anesthesia." Not only was Corning's work noticed in Dr. Matas' paper above, but also the fact that it antedated the "so-called methods of Oberst and of Bier." We are not surprised that in some things foreigners are fourteen years behind this country, but American editors ought not to be caught napping even if they do make honorable amends for it later.

THE DEVIL AS A HEALER.

Joseph Wilhoff of Chicago is in custody charged with obtaining money under false pretenses. He posed as a "Doctor," claiming to cure by the aid of the devil, his silent but active partner. Like all other supernatural healers, including the followers of "Mother" Eddy and "Father" Dowie, no ailment was too serious for his skill, provided there was money forthcoming, but it had to be "down on the nail,"—no pay, no cure. The trouble with Wilhoff, however, was that he went out of the beaten path; so long as he only swindled people out of their money with his pretense of healing, all went well, but when he began to fling around incantations, spells, and hoodoos among the superstitious Germans who composed his clientèle, the trouble began to brew. He, it

appeared, not only convinced his dupes that he could cure diseases with the aid of the devil, but that he could raise hades generally with their temporal affairs, and finally some of them rebelled. The principal difference between this impostor and others at present notorious is chiefly in the sheep's clothing affected by the latter. There is, or should be, as good a case against them for obtaining money under false pretenses as against this open and avowed ally of his satanic majesty. It may appear more respectable to some people to take the sacred names in vain to promote frauds, than to use that of the devil, but it is in every way blasphemous and more morally criminal. It is, moreover, infinitely more harmful, as the devil naturally has but a small following that believes him capable of doing them any good. If Wilhoff is convicted, why not Dowie and the mercenary followers of "Mother" Eddy.

THE PLAGUE.

Fear has been expressed in various newspaper editorials and despatches, that the appearance of plague in Egypt is only a precursor of its invasion of Europe—not that there will be an inefficient quarantine against Egyptian infected ports, but that the steady advance westward of the disease, of which its foothold in Egypt is only an indication, is not likely to be checked unless more rigid and concerted international measures are adopted to check its progress. The Mecca pilgrimage is stated as one great source of danger, and a still more eastern gateway is said to be afforded through the Persian Gulf, where the English sanitary regulations are said to be sadly neglected. It is certain that the range of the epidemic has been widened, increasing the possible sources of contagion, and that a rigid sanitary cordon on land is much more difficult to make effective than a quarantine at seaports, and for this reason the possibility of the pest reaching and ravaging Europe is to a certain extent increased. We have already expressed an opinion that the peril is not as great as some have feared, and we see no reason to retract it. The conditions of the past are not likely to be reproduced, and it must be remembered that the plague has been actually in Europe six or eight times during the present century, without its repeating the history of the invasions of the past. Readers of Kinglake's "Eothen" will remember the description of his entry into the plague-stricken city of Cairo. In those days, while quarantines were rigid in spots, the general rules of sanitation were far behind what we have to-day, and Europe was, it may safely be said, far more vulnerable to attack than at the present. That it then escaped is a good augury for the future. It is quite possible, even probable, that there may be local footholds of the plague along the Russian and Turkish borders in Asia, or that it may appear, through some oversight, in some poorly-watched European port, but the chances of its spreading from such foci are not great. There are like dangers on our own coasts. It may be carried to San Francisco by way of Japan or China, but it will be our own fault if it gains a serious foothold. The need of vigilance is great at all times, but fear is irrational and unwarranted. As it is, the risk does not justify the sensational newspaper articles and despatches that have appeared.

VOLUNTARY VS. COMPULSORY NOTIFICATION OF CONTAGIOUS DISEASE.

In 1895 the Chicago Department of Health inaugurated the plan of allowing physicians to "assume the responsibility" of enforcing precautionary measures against the spread of contagion in cases of diphtheria and scarlet fever. In other words, it made the notification of these disorders voluntary instead of compulsory. The results of this policy are reported in the *Monthly Bulletin* of the Department, for June, which is just in print. In 1894, the last year under the compulsory system, the total notifications of diphtheria were 1921, and the total deaths recorded from the disease, 1293, making an apparent death-rate from diphtheria of 67.3. In 1897 the cases reported were 3103, and the deaths 726, and in the first six months of 1899 the reported cases were 1726, as against 1304 for the corresponding period in 1897. Of all infectious reportable diseases, the total figures were 4380 to 1760 for the same periods respectively. These statistics are far better than labored arguments in favor of voluntary vs. compulsory reporting. As Commissioner Reynolds says: "The ordinance requirement of uncompensated professional service by physicians in the report of their contagious disease cases had not only been a demonstrated failure, but the tactless efforts to enforce the provision had alienated a most valuable ally of any health department. Now, more than ever before in its history, this Department is in touch with the physicians of the city, more fully than ever it receives the information from them necessary to success in its efforts to restrict the spread of the communicable diseases and to protect and promote the public health." It might be added here that the statistics further show that in the first half of 1897 the Department disinfected premises in 419 cases, and supervised 223 contagious disease funerals. In 1899, during the corresponding period, 2096 premises were disinfected and 380 funerals supervised. Figures speak louder than words, and while they may be misused, in this case no question can be raised as to their significance.

A MEDICOLEGAL QUESTION.

Last week a lawyer was fined fifty dollars and sentenced to thirty days in jail for practicing law without a license. During the trial it developed that he had practiced in the courts of Chicago for years; that he had a diploma from a law school, but had not been admitted to the bar. Editorially, the *Chicago Evening News* comments on the verdict as follows:

As to this decision no one interested in the dignity of the bar and the cause of justice will demur. It may be added, however, that the fact that this ignorant and incapable lawyer practiced ten years in the criminal and justice courts of Chicago before his right to the honors and emoluments of the profession of the law was questioned is not altogether creditable to the courts in which he practiced nor to the bar of which he was supposed to be a member. It is encouraging to note, however, that the Chicago Bar Association has at last taken the duty in hand of determining who are properly members of the legal profession in this city. The association will render a needed and valuable service to itself and the people by looking after other alleged members of the legal profession whose ignorance of law and the ethics of the bar are

continually bringing the latter and also the administration of justice into disrepute. It is possibly, occasionally, that even a regularly admitted lawyer may resemble necessity in knowing no law, but that is not the rule. There should be a weeding out of these alleged lawyers.

To all of this we say "amen." But we would like to ask, if the question is not considered too impertinent, why people should not be protected against medical pretenders who are "turned loose to prey upon the people" just as much as against legal frauds? If the Chicago Bar Association is doing a good thing in weeding out "alleged members of the legal profession," why is it not a good thing when an organization of medical men attempts to rid the community of dishonorable advertising frauds, faith curers, Dowieites, magnetic healers and the various hordes of vampires, who, under the cloak of religion, pseudoscience, and other pretexts, prey on the people? If not, is it because life and health are of less importance to the individual than his money? Is it of more importance that the criminal should have an educated lawyer to defend or prosecute him than that an individual suffering from disease should have an educated physician to attend him? Will the *News* and the other Chicago newspapers, which are rightly endorsing the Chicago Bar Association in its action, in the same manner endorse the Chicago Medical Society should it attempt to rid the city of alleged "doctors" and charlatans who infect it? In other words, is it not just as important to have honorable and educated physicians as it is to have honorable and educated lawyers? And if so, do not physicians deserve the support of newspapers in their efforts to keep the standard of their profession high and honorable, as much as the lawyers in their efforts to keep up the dignity of the legal profession, even though in the case of physicians it might result in the loss to the newspapers of some advertising patronage?

Medical News.

DR. L. NAPOLEON BOSTON, Philadelphia, has gone to England and will be away for several weeks' rest.

THE RUSSIAN authorities have ordered the disinfection of all the mail arriving from places suspected of being infected by the plague.

SEVERAL cases of smallpox are reported from Windsor, Ont., and the three cases in the smallpox hospital in Toronto are now nearly well.

PROF. GRASSI has been granted, by the Board of Public Health in Italy, a sum to defray the expenses of further research on malaria.

THE LOUISIANA State Board of Health has sent Dr. J. J. Bland to Hampton, Va., to report on the yellow fever outbreak at that point.

THE SURGICAL clinic at Leipsic will have a centennial celebration in October, when a bust of Professor Thiersch will be installed on the city hospital grounds.

PROF. MAX VON FREY, the well-known physiologist, is to take the place of Professor Fiek, who has retired from active professional life, in the Würzburg Medical Faculty.

As we go to press we learn that Justice Everett has imposed a fine of \$100 on Mrs. Bratz, the disciple of the "Divine Healer," Dowie, referred to in last week's *JOURNAL*, page 423. The case is to be appealed.

At EASTON, Pa., recently, a man gained entrance to the Easton Hospital under the pretense that he came to make an inspection of the electric wires, and stole money from many of the patients.

THE ANTI-RABIES service at the Constantinople bacteriologic institute, according to *Presse Med.*, July 20, has been placed in charge of Dr. Marie, summoned from the Paris Institut Pasteur for the purpose.

THE SUPERINTENDENT of the Kings County Hospital, N. Y., has made the complaint that the new civil service rules have so crippled the working of the institution as to seriously interfere with its service.

A COMMITTEE has been appointed by the Delaware County Institute of Science, organized in 1833, to prepare a memorial of the life and works of the late Dr. Daniel G. Brinton, which is to be preserved in the archives of the institute.

A SEVERE fire broke out in a branch of the Royal Lunatic Asylum of Aberdeen, Scotland, July 31. The building was damaged nearly \$25,000. Over 200 patients were in the building at the time but all were removed in safety.

E. H. STARLING, F. R. S., has been appointed Jodrell Professor of Physiology in University College, London, to succeed Prof. Schäfer, whose removal to Edinburgh we recorded in these columns several weeks ago. Prof. Starling is lecturer on physiology in Guy's Hospital.

A COUPLE of internes at the Hospital Pelegrin, Bordeaux, recently fought a duel with pistols discharged simultaneously at twenty-five paces, resulting in the perforation of the femoral artery and bladder and the death of one of the combatants, the son of a physician.

FEW SCIENTISTS receive such assistance in their research as Dr. Vatchef of Bulgaria, in his study of the Slavic type. The authorities have ordered exact measurements and physical details to be recorded according to his instructions, of all the native soldiers in the army.

WE LEARN from the *Medical Record* that a boy was recently arrested in New York City for spitting on women's skirts, and was fined for disorderly conduct. He had several times been apprehended for the same cause, and seems to derive gratification from indulgence in this impulse.

DR. ANNA S. FULLERTON, who has been practicing medicine for many years in Philadelphia, has decided to go to India where she will engage in special work, under the supervision of an interdenominational board. Among her duties will be the preparation of young women for the practice of medicine.

THE JAPANESE are keeping up their efforts in trying to make their country an enlightened one. The government recently ordered that vaccination and revaccination would be compulsory. All children must be vaccinated before the tenth month, and revaccinated at 6 and again at 12 years of age.

ANTHRAX is prevalent among cattle near Listowel, Ont. The Ontario Provincial Board of Health has ascertained that the existence of the disease is due to the polluted water below the tannery and woolen mills of that town. To remedy the evil, the Town Council has undertaken to devise a scheme for sewage disposal.

DR. THOMAS LOTHROP, who has for twenty years been at the head of the editorial department of the *Buffalo Medical Journal*, has transferred his interest to Dr. William Warren Potter, who becomes owner and editor-in-chief. The *Journal* enters on the fifty-fifth year of its publication with the addition of Dr. Nelson W. Wilson

as assistant editor, and Dr. Maul J. Frye of Buffalo, as associate editor.

AN ASSOCIATION for the promotion of public hygiene has been organized in Germany, by V. Leyden, Rubner and other prominent members of the profession, and officials. Lectures, meetings, circulars, everything tending to educate the people in matters of hygiene is included in its scope. It is to have branches in every community.

NIEBUHR states that the first mention of the plague in history has been recently deciphered on a clay brick dating from 1380 B. C. It is a message from the king of Alashja to the Pharaoh Amcnophis, apologizing for the smallness of his tribute a certain year, as all his officials had died "by Nergal's hand." Nergal was the pestilence god.

DR. J. C. WEBSTER, who has been appointed successor to the late Prof. James H. Etheridge, Rush Medical College, Chicago, was married recently in New York to Miss Alice Lusk. The ceremony took place in All Souls' Church, being conducted by the Rev. Dr. B. Heber Newton. Dr. and Mrs. Webster have gone to Europe on their honeymoon.

ACCORDING to the *British Medical Journal*, the will of Mr. Lawson Tait, dated April 6, 1893, has been proved; the whole of the testator's estate has been valued at £9,571, 13s, 10d—\$17,850—and his personal estate at nil. He left all his property to his wife, absolutely. The amount given is certainly much below what he was supposed to be worth.

IN A report on the water sources of New York State, just completed by George W. Rafter of the United States Geological Survey, it is stated that the Croton watershed, contains thirty-one ponds and lakes, with a total storage amounting to 75,569,000 gallons. When completed it is estimated that the Croton water system will supply 280,000,000 gallons daily.

FAY CONNOR, 11 years old, died in Chicago last Sunday, while under treatment by the "Christian Scientists." Just before death took place a physician was called who immediately recognized the disease to be diphtheria. The girl had been allowed to go out among her playmates and neighbors until too weak to leave her bed, and even then no efforts were made to isolate or prevent the spread of the disease. A coroner's jury investigated the case, and simply returned a verdict to the effect that death was the result of diphtheria. No one was censured, or blamed in any way because the laws of Illinois recognize these faddists as practitioners.

DR. T. G. RODDICK, Montreal, has just returned from an extensive tour of all the provinces in the Dominion of Canada, where he has been addressing the different medical societies and at the same time feeling the professional pulse in regard to "Dominion Registration." In British Columbia, Manitoba and the Northwest Territories there has been displayed on the part of the profession a gratifying unanimity of opinion in favor of the scheme. British Columbia, however, was a little bit suspicious. There they appeared to be afraid that the scheme, if adopted, might open the door to practitioners of the cheap diploma stamp.

It is expected that within a few days anthrax in Pennsylvania, where it has prevailed to a limited extent, will be stamped out. Over 2000 cattle have been rendered immune by artificial serum, and so far none of these have been affected. The rule adopted by the Board of Health of Pennsylvania is to give three inocu-

lations as follows: First a mild dose of serum is given, to be followed within five days by a stronger dose, and two weeks later by a third dose of still greater antitoxic power. It is believed that by this treatment immunity is conferred, the duration of which lasts one year. No accidents have followed the inoculations.

SIX COLORED persons in Philadelphia, who have been exposed to smallpox, were recently taken to the Municipal Hospital where they have been restrained. The question as to whether they could be kept in quarantine, was agitated, and a writ of habeas corpus directed against Dr. William M. Welch, physician in charge of the Hospital. When the matter came up for hearing, Dr. Welch stated that: "The parties were detained for the usual period of incubation to pass, which may be a little more or less than two weeks." The judge therefore dismissed the writ applied for and decided that the health of the public necessitated their remaining in the Hospital.

FAKE "HEALERS" IN ENGLAND.—In England last month a man was sentenced to one month's, and his wife to six weeks' imprisonment, for having unlawfully and wilfully neglected their little girl of 5 years of age. The child died of pneumonia, no physician having been called to attend her. The defendants were members of the sect called Peculiar People. They were originally prosecuted for manslaughter, but as no physician would go on the witness-stand and swear that the patient could have been saved, this charge was dropped, and the lighter charge of cruelty substituted. The cruelty consisted in allowing the child to suffer the severe pain of the disease, when it might have been relieved. The *Lancet*, from which we obtain the above facts, thinks the sentence much too light, believing that while persons may torment themselves for conscience' sake, their unlucky offspring should not be compelled to suffer. In this country it would be considered that the age of reason had dawned if this much of a sentence could be inflicted. Another case recorded by the *Lancet* shows that the rights of a similar class of healers are also being sadly infringed on in England. One Rev. Stephen Shepard Maguth, who claimed to be a LL. D., but whom the *Lancet* inelegantly dubs "an ass," gave up preaching and started out as "a scientific medical botanist and hygienic and dietetic adviser in all ailments." And for this he got two months' imprisonment.

Therapeutics.

Iodipin.

Iodipin is an organic combination of iodine with sesame oil, in which the former has united with the fatty acids of the oil. Being in the form of a liquid it is absorbed by the body, and, like other fats, it is in part deposited in the liver, bone-marrow, and subcutaneous connective tissue, and in part disintegrated. The greater portion of the iodipin leaves the body in the form of potassium iodide, and a varying amount appears in organic combinations. Klingmüller (*Berlin Klin. Woch.*, June 19, 1899, p. 540) reports the results of some observations upon the use of iodipin by subcutaneous injection, made at the clinic of Neisser at Breslau. Such a mode of treatment is a special advantage for patients who will not or can not take iodine by the mouth, and especially the insane. It was first found by experiments upon animals that the drug thus employed was non-toxic. Thirty-six patients were treated and received two hundred and twenty injections of a 10 per cent. preparation. No unpleasant effects were observed even when 20 c.c., the equivalent of 30 grains of iodine, were injected daily. Five injections were made

on successive days in cases in the hospital, but with longer intervals in ambulant cases. Subsequently additional injections of a 25 per cent. preparation were made, with equally satisfactory result. Not only was the iodine deposited in the subcutaneous tissues, slowly absorbed and distributed, but all of it was necessarily taken up and rendered active. Iodine appeared in the urine in from three to five days after the treatment was begun, and its excretion continued for several weeks, while with other preparations the iodine appears earlier and the period of elimination is much shorter. To overcome objection to the lateness of appearance, the slowness of absorption and tardiness of elimination of the drug when given subcutaneously, when a speedy effect is desired, it may be given by mouth simultaneously. The subcutaneous method of injection of iodipin has the further advantage of being painless, convenient and cheap. The injection is best made strictly into the subcutaneous tissues between the skin and the muscle, and preferably into the gluteal or interscapular tissues. The specific activity of iodine was manifested after subcutaneous injection of iodipin in the same degree as when other iodine preparations, and especially iodipin, were administered by the mouth. The results in typical cases of gummatous destruction were most favorable.

Finally, the subcutaneous use of iodipin was unattended with symptoms of iodism. As a result of his experience Klingmüller warmly commends the use of iodipin, and for the following reasons: 1. It exerts the specific action of iodine upon tertiary syphilis. 2. The organism is kept for a longer time under the influence of the action of iodine than with the use of hitherto employed preparations of iodine. The subcutaneous administration has the following advantages: 3. None of the drug is lost. 4. The organism disintegrates the iodine introduced slowly and regularly. 5. Iodism, with its unpleasant secondary effects, does not occur. 6. Absolute dosage is rendered possible. 7. The treatment is rendered possible for patients who for any reason will not or can not take iodine—the insane; after operations—the unconscious. 8. The body may be kept under the influence of iodine for weeks, or even months, by repeated courses of a few injections.

Facial Paralysis Cured by Salicylate of Sodium.

Following are the symptoms of a patient, in a case mentioned by Catrin, of paralysis of the seventh cerebral nerve: Paralysis of the muscles of the face, diminution of the salivary secretion, disturbances of hearing and taste, and downward deviation of the eye when attempts were made to close it. Catrin, believing the trouble to be of a rheumatic origin, put his patient upon sodium salicylate, 30 grains per day, and gradually increased this dose until 60 grains per day were taken. This was continued for two weeks, and then was gradually diminished. Altogether, the patient took the drug three weeks. Sensation began to return on the sixth day of the treatment. The patient could completely close his eyes in two weeks, and all disturbances of sensation vanished. There was no longer any trace of the trouble in three weeks.—*La Presse Med.*

Hydrochloric Acid in Gastric Acidity.

Gastric acidity is said by Reid to be best treated by hydrochloric acid. He says (*Mercer's Arch.*): "Wegeler and Hemmeter, among recent authors, bear witness to the powers of HCl as a stomachic or stimulant to the peptic glands. Hemmeter also quotes Riegel and Reichmann and Mintz as having reported cases of gastric acidity in which the restoration of HCl was effected by a more or less prolonged dosage with the same acid. Hemmeter gives twenty drops of the diluted HCl, in appropriate cases, in two ounces of water every half hour, beginning fifteen minutes before meals and continuing it till half an hour after the meal. He has frequently seen excellent results from this method, and believes that the motor function

of the stomach, as well as the glands, is favorably influenced—a view which my own experience confirms. My practice has been to give much smaller doses. I direct the patient usually to begin with a dose of four or five drops of the dilute HCl, given after each meal in this way: The amount prescribed, which is gradually increased if necessary up to ten, or exceptionally, even to twenty drops, is added to half a goblet of water, which the patient is directed to take in small sips at frequent intervals during an hour or an hour and a half. In cases of complete or nearly complete anacidity the sipping of the diluted acid is begun immediately after the meal, but in other cases not till the meal has been over for half an hour. In this way the amylaceous portions of the food are given time for the action of the saliva. I was led to adopt this gradual method of administering the acid through having observed a number of cases with absence of free HCl, in which the patients complained of a marked burning in their stomachs after taking quite small doses of the remedy. This apparent intolerance of the drug was overcome entirely by having it taken gradually in small sips, and the results eventually were quite as gratifying as in other cases in which no such disagreement occurred."

Neuralgia.

- R. Tinct. aconiti
- Tinct. colchici seminis
- Tinct. cimicifugæ
- Tinct. belladonnæ ãã. ʒi
- M. Sig. Six drops every hour until relieved. —Metcalf.

INTRACTABLE NEURALGIA.

- R. Croton chloralis. ʒi
- Glycerini
- Syrupi aurantii ãã. ʒi
- M. Sig. One teaspoonful as required. —E. P. Hurd.

CHRONIC NEURALGIC HEADACHE.

As an alternative to diseased nerves, in chronic neuralgic headaches, etc.:

- R. Zinci phosphidi. gr. 1/40
- Ext. cannabis indicæ. gr. 1/8
- Ext. nucis vomicæ. gr. 1/8
- Sodii arsenatis. gr. 1/64
- Quinine sulphatis. gr. 1/2
- Ext. aconiti radici. gr. 1/10
- M. Ft. tab. No. i. Sig. One such at 10 a.m. and at 4 and 9 p.m. —Henry J. Kenyon.

NEURALGIC HEADACHE.

- R. Antipyrin. ʒiiss
- Acetanilid. ʒss
- Camphor monobromate. ʒi
- Caffein. ʒss
- Phenacetin. ʒi
- M. Div. in chart No. xx. Sig. Take one and repeat in one hour if unrelieved. —E. C. Wendt.

INTERCOSTAL NEURALGIA.

- R. Tinct. gelsemii. gtt. c
- Syrupi simplicis. ʒiiss
- Aquæ destil. ʒvi
- M. Sig. One or two teaspoonfuls two or three times daily. —Cheron.

Caution—If the heart is feeble this formula should not be employed.

Brown-Séguard's prescription for neuralgia is as follows:

- R. Ext. hyoseyami
- Ext. conii ãã. gr. xl
- Ext. ignatiæ
- Ext. opii ãã. gr. xxx
- Ext. aconiti. gr. xx
- Ext. cannabis indicæ. gr. xv
- Ext. stramonii. gr. xii
- Ext. belladonnæ. gr. x
- M. Sig. Divide into sixty pills.

- R. Chloralis
- Camphore pulv ãã. ʒi
- Morphinæ sulphatis. gr. ii
- Chloroformi. m. xl
- M. Sig. m. xx the dose. May be used locally. —Bartholow.

TRIGEMINAL NEURALGIA.

- R. Tinct. aconiti. ʒiiss
- Tinct. gelsemii ad. ʒi
- M. Sig. Ten drops every twenty minutes, as directed.
- Directions—Take every twenty minutes until pain is relieved; not, however, to exceed eight doses, and stop earlier if any tingling is felt in the tips of fingers. —H. B. Whitney.

Influence of Morphin on Evacuation of Urine.

Acute or chronic intoxication with morphin causes difficulty in the emission of urine, or complete retention in some cases. In recent experiments on guinea-pigs, *Monch Med. Woch.*, No. 26, the administration of morphin abolished the sphincter reflex until the urine accumulated in such amounts that rupture of the bladder walls was produced, preceded by the appearance of more or less blood in the urine from the extravasation of blood caused by the stretching of the walls.

False Croup.

For this, Dr. F. C. Rogers recommends apomorphin in doses of gr. 1/40 to 1/50 by the mouth in a little water, repeated every fifteen or twenty minutes until symptoms are relieved. This dose is for a child 5 years old. One or two doses are usually sufficient to check the attack without producing vomiting.

Constipation with Scanty and Defective Bile Secretion.

- R. Acidi arseniosi. gr. i
- Hydragryi chloridi corrosivi. gr. i
- Pulveris ipecacuanhæ. gr. ii
- Hydragryi chloridi mitis. gr. xvi
- M. Div in tab No. xv. Sig. One or two tablets daily. —W. H. Porter.

HABITUAL CONSTIPATION.

In the habitual constipation of delicate persons with feeble digestive organs:

- R. Ext. cascara sagradæ. gr. ii
- Ext. nucis vomicæ. gr. 1 4
- Ext. belladonnæ. gr. 1 3
- Pulveris capsici. gr. 1/2

M. One such tabloid after food once daily should be taken; increased, if necessary, until two tabloids are taken thrice daily. This dose should be maintained until the habit of regular action is established, when the number should be gradually reduced and at length discontinued. Remedy the lack of fluids in the body by giving an abundance of water, either hot or cold. —Cutter.

Deaths and Obituaries.

IRVING C. SCHUREMAN, M.D., Albany, N. Y., 1869, died at his home in Tom's River, N. J., of cardiac disease, August 6, aged 59 years. He was a Civil War veteran, and a member of several fraternal orders. A widow and four children survive him.

JOHN M. FLETCHER, M.D., Bowdoin, Brunswick, Me., 1869, died at his home in Belfast, Me., August 7, aged 73 years. He had been governor and afterwards treasurer of the state.

NATHANIEL WILSON LEIGHTON, M.D., Bowdoin, 1857, and New York Medical College, 1858 (now extinct), died at his home in Brooklyn, N. Y., August 12, in the 60th year of his age.

JAMES F. JUDD, M.D., Jefferson, 1897, died in Philadelphia, August 5, aged 38 years. He was born in England.

H. STANGEWALD, M.D., born in Dresden in 1829, and a graduate of the University of Vienna, died at his home in Nunana Valley on June 1, after a practice in Hawaii covering about forty years.

B. T. Crompton, M.D., Corydon, Ky., died August 10, aged 29 years. . . . N. S. Freeman, M.D., Charleston, Ill., August 7, aged 70 years. . . . John T. Ireland, M.D., Lower Marlboro, Md., August 4, aged 60 years. . . . James T. Johnson, M.D., Huntsville, Ala., August 9, aged 68 years. . . . Kline W. Lynn, Cortland, Ohio, August 7, aged 29 years. . . . G. L. McClain, M.D., Arlington, Ga., August 1. . . . W. H. Seaton, M.D., Indianapolis, Ind., August 6.

A Combined Stomach Tube and Douche.

BY J. W. BELL, M.D.

Professor of Clinical Medicine and Clinical Diagnosis, Univ. of Minn.
MINNEAPOLIS, MINN.

The pressing need of a more satisfactory method of securing thorough gastric lavage, as well as a more efficient means of treating atonic conditions of the gastric mucosa and muscularis is my only apology for calling attention to a new combined gastric-tube and douche. The instrument consists simply of an inflow tube equal in size to two-fifths of the lumen of the entire tube, ending in a perforated jacket. This perforated jacket, corresponding to the last four inches of the gastric end of the tube, contains some seventy-two very small openings through which the water issues in very fine streams or a coarse spray with a force corresponding to the pressure or height of the column of water in the inflow tube. The outflow tube, corresponding in size to three-fifths of the lumen of the entire tube, simply performs the functions of an ordinary stomach-tube, draining the stomach of its contents, thus enabling the



small streams issuing from the small openings in the jacket to come in contact with and thoroughly cleanse all parts of the gastric mucosa. The perforated jacket is the only portion of the instrument original or new. This jacket proved a very troublesome problem for our rubber workers to solve, and allow sufficient space for the outflow. After many failures, extending over a period of nearly two years, they finally succeeded in making a satisfactory instrument. The following points are claimed for it:

1. The instrument is simple in construction and durable.
2. It thoroughly and efficiently cleanses and disinfects the stomach.
3. By means of the douche we are able to stimulate and tone the gastric mucosa and muscularis.

Miscellany.

Important Symptom in Chloroform Narcosis.—Lehmann states that if the eyelids close as the effect of the anesthetic is felt, the probabilities are that the narcosis will proceed smoothly. But if the eyelids remain partially or entirely open, or reopen if closed, trouble may be anticipated.—*Memorabilien*, July 19.

Right to Ride on Sidewalks.—Whatever may be said as to general rules of law prohibiting vehicles, including bicycles, on sidewalks, the supreme court of Iowa declares, in *Wheeler vs. City of Boone*, that it has yet to learn of any general or local law prohibiting the use of carriages operated by hand on sidewalks for the convenience of those unable to walk; and no law, it holds, should be given such effect by construction.

Criminal Abortion with no Vagina.—W. A. Freund recently served as expert in a case in which the woman was condemned to prison for feticide. There was no vagina and the uterus opened into the urethra, which was much dilated. Conception and expulsion of the uterus occurred per urethram. The abortion followed an injection into the bladder with criminal intent.—*Wiener Klin. Woch.*, July 20.

The Speculum Outside of the Office.—Our exchanges are copying the suggestions of Dr. Groussin, that the inconveniences of examining with the vaginal speculum without a table or chair for the purpose, can be obviated with a couple of stout cords, each tied into a loop made of a napkin. The loops are fitted over

the knees, and the other end of the cord attached to the upper hinge of a door, or to a nail or screw driven in for the purpose, one on each side. The knees can thus be held flexed and in the correct position to facilitate examination.

Voluntary Overexertion.—The term "voluntary overexertion," in a policy of accident insurance, the supreme court of Nebraska holds, *Rustin vs. Standard Life and Accident Insurance Company*, means conscious or intentional overexertion, or a reckless disregard of consequences likely to ensue from great physical effort. For example, it can not be said as a matter of law, it maintains, in applying this doctrine, that the slight elevation of a 300-pound weight by a strong man accustomed to lifting is voluntary overexertion.

To Be Determined by Board.—Whether a diploma presented by one who desires a certificate authorizing him to practice medicine is from "a medical institution in good standing," the supreme court of Ohio holds, is to be determined, in the first instance, not by the court, but by the board of medical

registration and examination. An institution incorporated for the purpose of "the education of suitable persons in the art and science of curing diseases by the use of air, baths, electricity, heat, magnetism, massage and all other resources of nature," it further holds, in *State vs. Hygeia Medical College*, does not offend against the law of its creation by imparting instruction concerning the administration of drugs.

Serotherapy in Pseudomembranous Conjunctivitis.—Pes found antidipteria serum remarkably effective in 13 cases—9 with Loeffler's bacillus pure and 4 associated—and warmly advocates its use to prevent tardy complications (paralysis of the ocular muscles), and facilitate the expulsion of the pseudomembrane, both as a preventive and cure, even when bacteriologic investigation is not possible.—*Revue Gen. d'Oph.*, July 31.

Tendon Suture in Injury from Circular Saw.—The saw had cut into the soft parts of the arm to the bone, and the wound had healed with the hand and fingers contracted, and the slightest movement exquisitely painful. Seven months later Gedeon reopened the wound and united the severed tendon stumps with silk sutures. In a month the pains had entirely disappeared and the hand and fingers had recovered full working capacity.—*Memorabilien*.

Not Bound to Have Amputation.—As a result of a casual difficulty in a saloon one man shot another in the leg, just above the knee. Nine days thereafter the man so shot died. The man who fired the shot was convicted of manslaughter. In affirming the judgment, the court of criminal appeals of Texas holds, *Franklin vs. State*, that the refusal of the man shot to have his limb amputated could not be imputed to him as gross neglect or manifestly improper treatment. The physician's opinion that the man would have gotten well had he permitted the amputation, the court considers, was more or less speculative on his part. It did not understand the physician to say that in every case where the main artery of the leg is penetrated or cut, and the party does not immediately bleed to death, blood poisoning is bound to follow; and, unless such be the case, it declares, it could scarcely be said that the deceased was guilty of gross neglect or manifestly improper treatment by taking the chance of saving his limb, although he may have refused to take the advice of the physician in the matter.

Unlicensed Experts.—After a careful consideration of the subject, the court of appeals of New York says, in the case of *People vs. Rice*, that it has reached the conclusion that if a

man be in reality an expert on any given subject belonging to the domain of medicine, his opinion may be received by the court, although he has not a license to practice medicine. But such testimony, it goes on to state, should be received with great caution, and only after the trial court has become fully satisfied that on the subject as to which the witness is called for the purpose of giving an opinion he is fully competent to speak. Here, there was testimony adduced that the witness in question was a manufacturer of medicines, and the publisher of medical books, and the author of a medical book used throughout the United States by practicing physicians, and that he had pursued a study of medicine and of nervous diseases in connection with the course of study of medicine. Whether he had pursued this study one week or one year did not appear, or whether he has ever read an article on the subject of insanity. Let alone studied the subject, did not appear. Nor was the subject of his book given, and therefore the court thinks that presumably it was not relating to insanity, so long as it was the object to qualify him as an expert on that subject. Such being the case, the court not only holds that he was not *prima facie* competent to express an opinion as an expert on the subject of insanity, because he had not been licensed to practice medicine, but insists that it is clear that, under the circumstances, the trial court was right in refusing to permit him to give his opinion as an expert on the subject of insanity. If he was an expert, it adds, that fact was not shown.

Physician's First Duty.—The first duty of American physicians is to join the AMERICAN MEDICAL ASSOCIATION and attend its meetings. It is hardly necessary to repeat what we have so often urged, that the ASSOCIATION is the gravitational center about which gather the unitizing tendencies and powers of the profession. It is plain to every one that our professional disunity is at present our greatest curse, and that it is the fundamental cause of our powerlessness in the face of the evils besetting us. Quackery, medical humbug, sectarianism, the nostrum shame, a hundred pseudomedical journals up for sale, and innumerable spawnings of medical delusions and fanaticisms—all these exist by our leave, and almost solely because of our disorganization. Far more than this, our awful death rate is almost the direct product of this same lack of unity. We have the knowledge whereby the American death-rate could be reduced one-half, but we have not the power to reduce it. We have not the power because we have no professional voice, no corporate unity, by which we can turn our knowledge into active prophylaxis, through the law-makers and administrative officers of the national state, and civic governments. If our population numbers now 70,000,000 and there are 10 unnecessary deaths each year per thousand, it follows that there are 70,000 deaths each year due to that professional negligence which is in reality a crime. We can not understand the logic of those who have no interest in medical sociology and public hygiene (preventive medicine) and who labor year after year in the hope of discovering the pathology of some rare disease, or the treatment of special diseases. We have, of course, no intention of underrating the value of abstract scientific study, for we know that ultimately all professional progress and power come from such science. But it is certain that at present scientific knowledge has outrun practical application, and we question only the logic of the sad neglect of actually saving lives in our extreme interest in the knowledge of how to save them. To effect this actual saving, it need hardly be added, is, however, the serious and earnest desire of the great bulk of the profession; what, then, hinders, if we do really know how to do it? There are many subordinate hindrances, but outweighing all combined is the fact we have emphasized, our professional disorganization. We can not turn our knowledge into facts, because we have no representative organization through which the whole body can speak, and by which influence may be brought to bear upon the social and governmental forces

so negligent and even scornful of general life-saving.—*Phila. Med. Jour.*, August 12.

London.

(Special Correspondence.)

BRITISH MEDICAL ASSOCIATION.—The event of the week—and for that matter, the only midsummer event—in medical circles, was the meeting of the British Medical Association, which concluded its sessions at Portsmouth this afternoon—August 5. The transatlantic visitor could not but be impressed, however, with the fact that out of over seventeen thousand members, the register indicated an attendance of less than nine hundred and, further, that of those in attendance but relatively few seemed to find their way either to the general sessions or to the meetings of the sections. This could not be attributed to the committee on arrangements, for each member and visitor alike was given, not only a copy of the daily journal, but a guide-book and all necessary information relative to places and times of meetings. It may be said, indeed, that the work of the always hard-worked committee of arrangements could not well have been improved upon. If, therefore, the small registration had any particular significance it was that the meeting was held in the south end of England, to reach which required a journey of at least several hours—never of a whole day—but even this is a very formidable affair to the average English practitioner. On the other hand, if there seemed to be a lack of interest in the proceedings the fact was to be explained by the close proximity of Cowes and the Royal regatta, the attractions of which could not be resisted even by your correspondent. London representation was, as usual, conspicuous chiefly by its relative absence. The few distinguished gentlemen who came down from the metropolis—quite two hours away—tarried long enough to deliver themselves of their appointed tasks and scurried back to town in eager quest of guineas, or else to the Pyrenees, the Alps, or the fjords of Norway, in no less eager quest of pleasure. It may be added that so far as pleasure was concerned there was but little occasion to quit Portsmouth or South Sea—save to escape the disagreeable heat—for what as between warships and barracks and gunwharfs and military and naval hospitals, all so dear to British hearts—entertainments were launched with necessary impetus and éclat. A garden party given one afternoon by the Mayor of Portsmouth in the beautiful grounds of the borough asylum, was a delightful success, while those—a half dozen or so—given by distinguished citizens on their private grounds, to limited numbers, contributed equally to the pleasure of those who were fortunate enough to secure tickets. It was a conspicuous fact, work in all the sections was abandoned at 1 o'clock, and the afternoons given over entirely to social enjoyment. This impressed me as vastly more desirable than our own intensely work-a-day fashion of running our Sections morning, noon, and sometimes at night, as if the welfare of creation were resting on us and had to be settled, finally and definitely, before the President could announce a *sine die* adjournment of the AMERICAN MEDICAL ASSOCIATION.

America was as usual represented at the meeting. Among the more conspicuous guests from our own country was Dr. Daniel Lewis of New York, the editor of the *American Medical Review of Reviews*, whose interest in medicine is exceeded only by his enthusiasm for yachting. Dr. Ernest Laplace of Philadelphia was an interested participant in the proceedings of the surgical section. Dr. James Tyson, the distinguished professor of medicine at the University of Pennsylvania, was among the more notable of American visitors. Drs. Bill, Brainard, Cole, Cushing, Hirschfelder, de Schweinitz, Hubbell, Reed, Kipp, Hutchinson, Lewis, McCrae, Snow and Jackson were the other American names on the guests' register. I have not alluded to Dr. Osler in this connection, who, by virtue of his former Canadian residence is a member, and who took an active part in the proceedings, and who, *on dit*, entertains very definite

London ambitions—a fact which, if well founded, will bring but little comfort at John Hopkins, where he has rendered such conspicuous service.

One familiar with the work of the AMERICAN MEDICAL ASSOCIATION can not but be impressed with the important functions exercised by the Council of our sister organization of Great Britain. This body—the Council—consists of nearly a hundred members, and exercises, *ad interim*, practically all the functions of the Association—indeed, it exercises a sort of veto power over the general organization in view of the fact that elections to membership in the Association seem to be made at the time of the meeting subject to subsequent action by the Council. In this way, no doubt, much more careful discrimination can be exercised in the selection of members than by the delegate and loose credential system in vogue in America.

The report of the Council for the present year indicates a membership of 17,746. As the total revenues were £42,924, and as the membership fee is a pound, it would seem that the *Journal* has a comfortable income from other quarters of £25,178. The expenditures are, however, very heavy, as they leave a balance of less than £5000. As a trustee of our *JOURNAL*, and one much interested in its success, I feel that the financial statement submitted at the Columbus meeting was very satisfactory, as compared with the one just submitted at Portsmouth. Another important fact relating to the welfare of the *British Medical Journal* is also found in the report of the Council. This relates to the continued organization of branches in different parts of the Empire: One has been organized at Perth in West Australia, which with the other five Australian branches furnishes an aggregate membership of 1109. The branches of South Africa and other colonies are reported as being "everywhere large, active and useful." Thus it becomes apparent that by a wise system of organization, the profession of the Empire is essentially unified and put into position for the effective protection and advancement not only of its own interests but those of the public that come properly within the purview of medical men. Other topics discussed in the report of Council are: "the library," which now contains 37,000 volumes; "instruction in tropical diseases;" "tuberculosis;" a controversy with the "London Chamber of Commerce;" various parliamentary questions; and obituary notices. It would seem from this that the functions of Council are varied and important. I feel that I can best illustrate their importance by giving one or two instances in detail. The London Chamber of Commerce made a grave accusation against the probity and integrity of the profession to the effect that "secret commissions" were received by medical men. The Council at once took up the question, demanding the facts on which it could proceed to punish offenders, but the London Chamber of Commerce was unable to furnish them, and as a consequence the imputations have fallen flat.

There is no system of medical registration in India, a fact which has been taken up with the Indian and Colonial office by the Council, with the prospect that the evil may be remedied. A more striking example of the beneficial influence of the Council is indicated in the following paragraph, taken from the report: "A complaint having been received from the Jamaica Branch that the Legislature in that colony had passed a law which compelled medical practitioners to notify infectious diseases under a penalty of 40s., but had failed to provide any payment for the duty thus imposed, the President of Council wrote to the Colonial Office, and again received a reply from the Right Honorable J. Chamberlain, stating that the Governor of Jamaica had been instructed to introduce a law to provide for the payment of fees to medical practitioners for notifying infectious diseases and to protect them from any legal consequences of such notification."

There is to-day, in the United States, a striking need for a legislative committee so constituted that by virtue of its representative character it can speak for and in the name of the

great medical profession. Such a committee, to be effective, must be as small as may be consistent with its representative character. One might imagine such a committee made up of the president of the AMERICAN MEDICAL ASSOCIATION and the president of each state medical society, if each state medical society were only a branch—an integral part—an organic and constituent unit of the national organization—but such important changes must come slowly. The watchword with the AMERICAN MEDICAL ASSOCIATION, however, must be organization, organization, and still, organization!

It is manifestly out of the question to deal in detail with the proceedings of the Portsmouth meeting. Naturally keen interest centered in the annual address of the President, Dr. Ward Cousins, given in abstract in the *JOURNAL*, August 5, p. 355.

It was but natural that a discourse of such high ethical conceptions should not be appreciated by the lay press. The *Standard*, for instance, true to those instincts which permit it to become the avenue for the advertisement of nostrums whose effects are but little if any short of criminal, wrote an editorial review in which it sought to throw dust in the eyes of the public by carping against the medical profession, that it had not yet solved the millennium. Of course the medical, and for that matter the discriminating lay public, readily understood that the criticism was prompted by the counting-room. There was a sort of melancholy comfort, however, in observing this antagonism, for to an American it served to exemplify the companionship of misery. It must be admitted, however, that in the matter of prostituting their columns to the fabrications of nostrums, the reputable English papers are less serious offenders than are publications of corresponding position in the United States.

One of the most important contributions to the proceedings was by Prof. Alexander Ogston (see p. 474, ¶ 143), of the University of Aberdeen, who offered some severe strictures on the present status of the medical science in both the army and the navy. The revelations were in the nature of a surprise to one who had learned to look on all sorts of military and naval preparations in England as being in a state of perfection. To learn, therefore, that an under secretary for war had openly admitted that, in the event of a sudden precipitation of hostilities, making it necessary to organize two army corps, the government would not be in a position to furnish the requisite medical contingent, was certainly a communication from beyond the realm of the expected. Much fault was found with the rank and quarters furnished medical men, with the restrictions placed on them with regard to private work while on garrison duty, with the hospital accommodations, especially in the navy, with the pernicious habit of keeping surgeons for long periods at ports remote from the centers of medical progress, and with the policy. The address was received with profound attention and will doubtless result in a new task for the parliamentary committee.

My participation in the work of the sections was restricted to the section on gynecology, which was presided over by the distinguished Dr. George Granville Bantock of London—the Beau Brummel of the metropolitan profession. The late Mr. Lawson Tait was sorely missed, and his untimely demise was the occasion of many heartfelt regrets. On one day there was a discussion on the treatment of fever following delivery, with special referenceto serotherapy, opened by a carefully prepared paper by Dr. Herbert Spencer—manifestly a coming man. The discussion which ensued was participated in more especially by the distinguished successor of Leischman, Prof. Merloch Cameron of Glasgow, and by Prof. Mere Madden of Dublin, with the result, so far as I could determine, that the case as presented on the affirmative side by Dr. Spencer, was interesting as set forth, was important if true, but that it at present lacks confirmation. On another day Mr. Bland Sutton presented his well-known views on ovulation and menstruation in

their relation to the menopause. This he did in his graceful and masterly style by way of opening a discussion on the natural menopause as compared with: 1, that induced by the removal of both the uterine appendages and, 2, that induced by the removal of the uterus without the uterine appendages. There was but comparatively little discussion following the essay, but the lull seemed much like that which precedes the storm that one inevitably provokes when one has the temerity to entertain views at variance with those of general acceptance.

CHARLES A. L. REED, M.D.

Canada.

(From Our Regular Correspondent.)

August 12, 1899.

CANADIAN MEDICAL ASSOCIATION.—What promises to be the most successful meeting in the history of this Association is that which convenes in Toronto on August 30, as noted in the JOURNAL of August 12. An important discussion on "Dominion Registration," in which the Canadian practitioner in every part of the Dominion is vitally interested, will be introduced by Dr. T. G. Roddick of Montreal. Delegates will be present from every province in Canada, pledged to support this movement. The pathologic museum, in charge of a committee with Dr. A. Primrose of Toronto as chairman, will add much to the interest of the meeting. Already a great many specimens have arrived, and others are being rapidly contributed. The social part is being well looked after by a committee of arrangements with Dr. A. Jukes Johnson as chairman and Dr. Charles R. Dickson as secretary. This will include a garden party and musicale in the Normal School—where the meeting is to be held—and on its beautiful lawns, on the evening of the first day; a "tea" at the Royal Canadian Yacht Club (Island clubhouse); a smoking concert, tendered by the City Council, on one of the large vessels of the Niagara Navigation Company; and a visit to the Industrial Exhibition with reserved seats for members and their lady friends, in the grand stand, offered by the Industrial Exhibition Association. Besides, there will also be numerous private entertainments.

POST-MORTEM WITHOUT AUTHORITY.—A case which has excited considerable interest and discussion in Ontario, and which has just been decided in favor of the defendants, was that of Davidson vs. Drs. A. H. Garratt, H. B. Anderson and W. H. Harris, all well-known practitioners in good standing in Toronto. Having been called suddenly to see the wife of the plaintiff, Dr. Garratt had at once responded, only to find the woman dead on his arrival. He telephoned the coroner and was subsequently instructed by that officer, through the same medium, to perform a post-mortem examination. Taking with him Drs. Anderson and Harris, they proceeded to the residence and were admitted by the plaintiff's own son. The heart only had been examined when the husband entered and demanded their authority. The Ontario laws require this in writing, but custom was otherwise, so the doctors had no written authority. The coroner had previously withdrawn his warrant for an inquest, but had not notified Dr. Garratt of his action. Hence, suit was entered for damages to trespass on land, and in the assize court \$600 and costs assessed against the defendants. An appeal was immediately taken in the High Court (Divisional). Here the verdict in the lower court was reversed, the appeal granted with costs, and the action dismissed with costs. Counsel for plaintiff argued that because the law was consistently ignored in the matter of written authority from the county attorney to the coroner, and further from the coroner to the doctor performing the post-mortem, custom superseding it, it was no excuse for the physicians doing as they had done. This, Justice Rose of the High Court considered nonsensical and perfectly ridiculous, and thought that when a doctor was ordered by a coroner to perform a post-mortem he should do it, and not go scurrying around hunting up the law on the subject.

END OF MONTREAL CLINICAL SOCIETY.—The Montreal Clinical

Society *non est inventus*. For several years past the Society has been in a declining condition. This was no fault of the officers; they were full of enthusiasm, but the rank and file had lost interest, so it was decided to close up its affairs. The idea was subsequently carried out in a very happy manner. The last general meeting took the form of a supper in Elm Hall, Westmount, where forty-five members gathered, and, amid a glorious carnival of refreshment, sang their death song.

MEDICAL MEETINGS AND DOMINION REGISTRATION.—Down by the sea, in the maritime provinces—New Brunswick, Nova Scotia, Cape Breton and Prince Edward Island—all the annual meetings of the societies have been held. They proved successful in every respect. In his annual address before the Medical Society of Nova Scotia, held in the Normal School Building, Truro, the president, Dr. John McMillan of Pictou, advocated a very important issue—one which forces itself on the consideration of the profession in that section of the Dominion, viz., the need of a properly organized statistical bureau, and the establishment of a sanatorium for the treatment of tuberculosis. A more efficient regulation of vaccination than at present in vogue, was ably contended for by Dr. Jones of Halifax, and an animated discussion ensued on the subject. The Maritime Medical Association meeting was well patronized, and an excellent program presented. Nova Scotia especially sent a large delegation to this meeting, while P. E. I. was not far behind in the point of numerical representation. It was the ninth annual meeting, and opened on July 12 in the Legislative Assembly, (Charlottetown, P. E. I. Dr. Robert T. Morris of New York delivered an address on "Peritoneal Adhesions," while Dr. James Bell's (Montreal) contribution of "Several Unusual Cases in Abdominal Surgery with History and Treatment" added somewhat to that gentleman's reputation as one of Canada's foremost surgeons. The address of welcome was delivered by Lieutenant-Governor McIntyre, a medical man; and the occupant of the mayor's chair in Charlottetown, who contributed much to the social entertainment of the visitors, is also a member of the profession. The garden party at Government House; the pleasant excursion on the harbor; and the dinner at the Hotel Davies reflected much credit on the local committee of arrangements. Dr. Roddick was present at all the meetings, advocating "Dominion Registration." Dr. MacNeill, president of this Association, in referring to this subject, spoke of the good work that the eleven medical colleges in Canada were doing in medical education, and said that for years past the Canadian Medical Association had been endeavoring to educate the people as well as the profession, on the necessity of having one qualification for all Canada. He stated that at the last meeting of that Association, in Quebec, P.Q., the basis of uniformity of curriculum was agreed on, and Dr. Roddick was intrusted with the matter to perfect and complete. We look to him as the Cæsar to lead us across the provincial Rubicon, and have established in Canada—what? The University of Canada or the College of Physicians and Surgeons of Canada? Or the Dominion Medical Council? By the accomplishment of this scheme, students graduating and having obtained licenses to practice in one province will be spared the examinations and the expenses of further examinations and licensing in other provinces.

DEATHS FROM PUERPERAL FEVER.—Some little attention to statistics in regard to puerperal fever in the Province of Ontario may be interesting. During 1897, in an urban population of 436,996, there were 9,037 births, and 29 deaths from this disease, a mortality-rate of 0.32 per 1,000. In the cities of Brantford, Windsor, Chatham and St. Thomas there were no deaths from this disease, while in Guelph the rate was 0.77; Stratford, 0.74; Ottawa, 0.7; Belleville, 0.66, their respective birth-rates to 1,000 living persons being respectively 23.1, 13.2, 27.1, and 14.3. Hamilton makes a good showing with a percentage of 0.01; London, 0.18; Toronto, 0.26. In the whole province, out of 47,323 births, 185 deaths are reported from this dis-

case, one death from puerperal fever to 255 births. The greatest number of deaths from puerperal fever in 1897 occurred in parts of Ontario where the confinements took place without medical assistance. As for instance, in Algoma, four deaths occurred. Here something like 52 per cent. of the labors were unattended by physicians. In the county of Brant no deaths occurred, and only about 3.1 per cent. of the births were unattended by physicians. So also in the county of Bruce, 20.72 per cent. of the labors were unattended by physicians, and there were seven deaths recorded. Contrasting the rural with the urban population, the total deaths occurring in cities registers 15.67 per cent. The urban population is 19.13 per cent. of the total provincial population.

Queries and Minor Notes.

REJECTIONS FOR TOBACCO HEART.

OMAHA, NEB., August 9, 1899.

To the Editor:—Was there an official statement or authenticated report published stating the cause of rejection by our army recruiting officers, among applicants who desired to join the ranks of the Spanish-American War? I have scanned the index of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION in vain, yet I certainly read some place that about 90 per cent. of the rejections were based on tobacco heart. If published, where can I find it? If not published, how can I get the facts?

J. M. A.

ANSWER:—The above query we referred to an official in the office of the surgeon-general, who replies as follows: "No official statement or authenticated report has been published stating the cause of rejection by our army recruiting officers among applicants for enlistment during the Spanish-American War. It is doubtless whether a full tabulation of all the causes of rejection will ever be made. The papers relating to volunteers were filed in the adjutant-general's office, and that office has but little concern for the condition of men who were not accepted. Certain of the papers relating to regulars were filed in the office of the surgeon-general and as it has been customary for this officer to present in his annual reports tabulations of the causes of rejection among candidates for enlistment, he will probably have such a table in his forthcoming report. That 90 per cent. of the rejections were based upon tobacco heart may have been an exaggerated expression of the experience of some medical examiner who had but a few cases before him. The annual report of the surgeon-general for the year ended June 30, 1898, gives the recruiting statistics for the previous calendar year. From these we learn that of 3492 rejections, 363, or a little over 10 per cent., were occasioned by diseases of the circulatory system. To what extent tobacco heart may have figured in the causation of the 362 rejections is not known, as the tabulation does not go into specific details."

BRONCHIAL CALCULI.

CHICAGO, August 14, 1899.

To the Editor:—In re your remarks on bronchial calculi (JOURNAL, Aug. 12, 1899, p. 434), if your correspondent will consult Hoffmann, *Krankheiten der Bronchien*, in "Nothnagel's Spec. Path. u. Therap." Wien, 1896, pp. 38-64, he will find a fair résumé of our existing knowledge of this affection, together with reference to a few articles in the literature.

EDWARD F. WELLS, M.D.

The Public Service.

Movements of Navy Medical Officers.—Changes in the medical corps of the U. S. Navy for the week ending August 12, 1899:

Medical Inspector J. R. Waggener, promoted to medical inspector from April 3, 1899.

Medical Inspector T. H. Streets, promoted to medical inspector from April 16, 1899.

Surgeon T. A. Berryhill, promoted to surgeon from April 9, 1899.

Surgeon E. P. Stone, promoted to surgeon from April 16, 1899.

P. A. Surgeon J. M. Moore, ordered to the Vermont, August 10.

Asst.-Surgeon B. L. Wright, detached from the Vermont and ordered to duty with the 2d marine battalion for Manila, P. I., and on arrival at Manila to report to the commander-in-chief of the Asiatic Station for duty.

P. A. Surgeon W. F. Arnold, granted extension of sick leave for one month.

Surgeon G. Pickrelle, authorized to drop middle initial of name.

P. A. Surgeon G. Pickrelle, detached from the Baltimore and ordered to the Monterey and to the Cavita Naval Station.

Asst.-Surgeon H. H. Haas, detached from the Oregon and ordered to the naval hospital, Yokohama, Japan, for treatment.

Marine-Hospital Changes.—Official List of Changes of Station, and Duties of Commissioned and Non-Commissioned Officers of the U. S. Marine-Hospital Service, for the seven days ended August 3, 1899.

Surgeon Eugene Wasdin, to proceed to National Soldiers' Home, Va., for special temporary duty.

P. A. Surgeon G. M. Magruder, so much of Bureau order of July 31, 1899, directing P. A. Surgeon Magruder to proceed to Hampton, Va., revoked and directed to proceed to Richmond and Newport News, Va., for special temporary duty.

P. A. Surgeon C. P. Wertenbaker, to proceed to Hampton, Va., and report to Surgeon J. H. White for special temporary duty.

P. A. Surgeon A. C. Smith, leave of absence granted by Bureau letter of June 20, 1899, revoked and directed to rejoin station at Norfolk, Va.

P. A. Surgeon W. G. Stimpson, so much of Bureau order of July 31, 1899, directing P. A. Surgeon Stimpson to proceed to Fort Monroe, Va., revoked, and directed to proceed to Newport News, Va., and report by wire to Surgeon J. H. White Hampton, Va., for orders.

P. A. Surgeon Rupert Blute, to proceed to Columbus City, Washington, for special temporary duty.

P. A. Surgeon E. K. Sprague, leave of absence granted by Bureau letter of July 27, 1899, revoked.

P. A. Surgeon W. H. Wickes, leave of absence granted by Bureau letter of July 27, 1899, revoked.

Asst.-Surgeon R. H. von Ezdorf, to report to Surgeon J. H. White at Hampton, Va., for special temporary duty.

Asst.-Surgeon L. D. Fricks, relieved from duty at the South Atlantic Quarantine Station and directed to proceed to Hampton, Va., and report by wire for further orders.

Asst.-Surgeon F. J. Thornbury, relieved from duty at New York, N. Y., and directed to proceed to Baltimore, Md., and report to the commanding officer for duty and assignment to quarters.

Acting Asst.-Surgeon L. C. Dean, granted leave of absence for fourteen days from August 4, 1899.

Acting Asst.-Surgeon L. F. Gibson, granted leave of absence for ten days.

Acting Asst.-Surgeon R. H. McGinnis, granted leave of absence for three weeks from August 7, 1899.

Acting Asst.-Surgeon W. H. McE. Martin, granted leave of absence for thirty days on account of sickness.

Acting Asst.-Surgeon A. W. Smith, to proceed to Fortress Monroe, Va., and report to Surgeon W. J. Pettus, for special temporary duty.

Sanitary Inspector John C. Rodman, granted leave of absence for four days.

Hospital Steward W. W. Kolb, to proceed to Hampton, Va., and report to Surgeon J. H. White for special temporary duty.

Hospital Steward F. H. Peck, to proceed to Fortress Monroe, Va., and report to Surgeon W. J. Pettus, for special temporary duty.

Hospital Steward H. E. Davis, to proceed to Baltimore, Md., and report to commanding officer for temporary duty.

Temporary Hospital Steward E. T. Olsen, relieved from duty at Chicago, Ill., and directed to proceed to Wilmington, N. C., and report to commanding officer for duty and assignment to quarters.

RESIGNATION.

Acting Asst.-Surgeon S. C. de Krafft, resignation accepted to take effect July 15, 1899.

APPOINTMENTS.

B. W. Goldsborough of Maryland, appointed acting asst.-surgeon, U. S. Marine-Hospital Service, for duty at Cambridge, Md.

Temporary Junior Hospital Steward Egil T. Olsen appointed junior hospital steward from May 29, 1899.

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended August 12, 1899:

SMALLPOX—UNITED STATES.

Kentucky: Louisville, July 26 to August 2, 5 cases.

Louisiana: New Orleans, July 22 to 23, 3 cases.

Massachusetts: Boston, July 29 to August 5, 1 case.

Ohio: Columbus, July 29 to August 5, 1 case; Dayton, July 29 to August 5, 1 case.

Washington: Spokane, July 22 to 29, 2 cases.

SMALLPOX—FOREIGN.

Belgium: Antwerp, July 8 to 22, 45 cases, 2 deaths.

Brazil: Rio de Janeiro, June 15 to 30, 32 deaths.

Colombia: Panama, July 25 to August 1, 1 case, 1 death.

Egypt: Cairo, June 24 to July 15, 7 deaths.

England: London, July 5 to 15, 1 case.

Greece: Athens, July 15 to 22, 11 cases, 3 deaths.

India: Calcutta, June 24 to July 1, 1 death.

Netherlands: Rotterdam, July 15 to 22, 1 case.

Russia: Odessa, July 5 to 22, 9 cases, 4 deaths; St. Petersburg, July 8 to 22, 15 cases, 6 deaths.

Turkey: Erzeroum, July 8 to 15, 2 cases.

YELLOW FEVER.

Brazil: Rio de Janeiro, June 15 to 30, 15 cases.

Cuba: Matanzas, July 13 to 20, 1 case, 1 death; Matanzas, July 26 to August 2, 1 case, doubtful; Santiago, July 15 to 22, 12 cases, 2 deaths.

CHOLERA.

India: Calcutta, June 24 to July 1, 7 deaths.

PLAGUE.

Egypt: Alexandria, from outbreak to July 9, 65 cases, 32 deaths.

India: Calcutta, from June 24 to July 1, 6 deaths.

Straits Settlements: Penang, January 1 to June 30, 42 cases, 33 deaths.

CHANGE OF ADDRESS.

Burnard, H. W., from 9139 to 9215 Commercial Ave., Chicago.

Cuthbertson, W. M., from 189 41st St. to 453 53rd St., Chicago.

Fisher, Geo. C., from 3000 Indiana Ave to 6303 Monroe Ave., cor. 63d St., Chicago.

Holman, Carl Johnson, from Granite Falls, Minn., to the Norwegian Lutheran Hospital, cor. Thomas and Francisco Sts., Chicago.

Kirby, H. W., from Airbratt, to Paris Block, Cripple Creek, Colo.

Knowles, W. F., from Hotel Berkeley to 220 Clarendon St., cor. Newberry St., Boston, Mass.

Louis, Surg. Major D. T., from Philadelphia, Pa. to Division of Cuba, Havana, Cuba.

Lova, I. N., from 3507 Olive St. to 4661 Maryland Ave., St. Louis, Mo.

McCormack, J. R., from Philadelphia to Montgomery, Pa.

Malsburg, C. E., from 23 East 11th St. to 1631 Sycamore St., Cincinnati, Ohio.

Marshall, O. R., from Moody to Gidley, Texas.

Muller, F. P., from 428 Kearney to 1016 Sacramento St., San Francisco, Cal.

Newton, C. S., from Altamont to Winfield, Kan.

Shields, W. B., from 493 1/2 Maryland to 453 1/2 Olive St., St. Louis, Mo.

Spangler, C. F., from York to Kane, Pa.

White, S. C., from Sandwich, Ill. to Kansas City, Mo.

Whalen, C. J., from 225 Dearborn Ave. to Luzerne Hotel, Station A, Chicago.

The Journal of the American Medical Association

VOL. XXXIII

CHICAGO, ILLINOIS, AUGUST 26, 1899.

No. 9.

Original Articles.

HYDROTHERAPY.

A NEW BATH FACILITATING ITS USE IN PRIVATE PRACTICE.*

BY A. C. HAVEN, M.D.

LAKE FOREST, ILL.

RÉSUMÉ.

Brief history of the Use of Water in Medicine.
Prejudice against Water, and Reasons.
Physiologic Action of Water—Cold and Hot.
Therapy—All Hyperpyrexia, etc.
Contraindications.
Technic.
Exhibit of New Bath.

The remedy I wish to exalt to-day is no new substance, compounded in German laboratory by processes of synthesis, but an original product, direct from the hands of the Creator; utilized first by Adam, recognized and recommended by all the illustrious followers of Esculapinus to the present day; even used by the Great Physician, Jesus Christ, who commanded the leper to go bathe in the river Jordan and be made whole. Yet with all these unparalleled recommendations, water is largely neglected by the busy practitioner of to-day, for the easier prescription which the druggist may compound. One hundred years ago Cullen sang the praises of cold water, and Brand of Stettin, Von Ziemsen, and our own Baruch, and many others have fought nobly to win it a place in our pharmacopeia. But their success has only been partial. Why has it not been complete? Surely not because the remedy does not meet the expectations of those who give it a fair trial. But it is such a common, every-day remedy with such an ordinary name. Sometimes I think if it were given its chemical name of protoxid of hydrogen, it would rise in the estimation of the profession.

Then, for a long time it was utilized by quacks, who did not use it scientifically, and recommended it as a "cure-all," thereby prejudicing the honest physician against it. Another cause of failure is because of a monstrous error which has deeply saturated the minds of the laity; and many otherwise learned physicians, too, are afflicted with the same paralyzing fear of "catching cold" from the use of water. The very remedy most potent in preventing colds is accused of producing them. Nansen and his crew had no colds in the Arctic regions. Only when they reached civilization did colds appear. Zymotic influences undoubtedly figure in their etiology. How absurd then to allow this illogical reasoning to deprive us of a powerful and beneficent remedy.

Sometimes I think a great part of the race are victims of true hydrophobia. I had occasion to recommend a bath to a patient recently and was electrified with the

response: "I don't know as it would make any difference, Doctor, but there has not been a drop of water on my body for twenty years."

The more formidable objection is the *time* required for the proper use of this remedy. Many argue that water is all right for hospitals where time is abundant, and helps many; but the fact that water is almost universally used in hospitals, argues that this remedy will accomplish what other drugs fail to accomplish, else why should hospitals go to all this trouble and expense? And a remedy which works such marvelous results in hospitals is a good thing for physicians generally to understand and use, and the chief purpose of this paper is to prove that the remedy can be applied to private practice without the loss of too much time, and without great inconvenience. I shall try to show how the patient in the country farm-house and the crowded city tenement may receive the blessings of this unequalled remedy.

Still another reason why the bath is not more often used by the private practitioner is due to a lack of appreciation of the physiologic action of such baths. To be sure baths are useful for cleansing purposes, and they also reduce bodily temperature, but baths are more potent as therapeutic remedies than that. Briefly, a cold bath stimulates all the nerve-centers, liberating new nervous energy, and thereby stimulating all the functions of the body and greatly improving the patient's resisting power against disease. The heart is powerfully strengthened, not weakened, as many suppose. The kidneys act vigorously after a bath, and experiment has proven the urine far more toxic after than before a bath, showing elimination of the poisonous ptomaines. The lungs, too, do their part, as respiration is powerfully stimulated by the cold bath, increasing the supply of oxygen and the exhalation of poisons. The skin is another channel of elimination that is greatly augmented by the cold bath, and bed sores are far less liable to appear. In fine, the cold bath fortifies the patient in his struggle against disease, stimulating the vital functions and hastening the throwing off of the poisonous ptomaines and their products. No other remedy can approximate it in usefulness at times. Nor do the baths inhibit the use of other therapeutic measures; they simply co-operate with them.

Hot baths, too, have their own distinct physiologic action, quite different from the cold. The warm bath numbs the terminal nerve-fibers, rendering them less sensitive, and thereby producing a sedative action. Baths over 105 irritate the vasoconstrictors, resulting finally in paralyzing them, dilating the peripheral vessels and raising internal temperature.

As to therapy, all hyperpyrexia are far more readily controlled by cold baths than by any other known remedy. Phenacetin and other coal-tar derivatives weaken heart action, if long used, and the patient merely dies with a normal temperature. Whenever delirium, restlessness and insomnia appear, the cold bath is indi-

* Presented to the Section on Practice of Medicine at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus Ohio, June 6-9, 1899.

cated. Cyanosis and signs of collapse are urgent symptoms demanding the use of the warm bath with cold affusion over the head and shoulders, with gentle friction. This will often rescue the sufferer from the very jaws of death, in a manner unknown to any other therapeutic measure.

If, for any reason, I can not use cold baths in typhoid fever, I confess I feel my patient has had only half a chance of recovery. The mortality has been reduced from 25 per cent. to almost nothing, when the baths are properly administered. In the last two years I have treated some forty cases without a single fatality.

It is in typhoid fever that the cold bath is seen in all its perfection. Its results are almost magical. Until some true specific, some antitoxin, is discovered, which will abort the disease, I shall continue the use of the cold baths in typhoid fever, in the belief that I am thereby giving my patient the safest and best treatment. Many lives might annually be saved, were this treatment more universal. I cannot understand why it is not the rule, the orthodox treatment in private, as well as hospital practice, unless it be that the busy practitioner feels he can not spare the time and labor necessary. It is not as difficult as many suppose, and even if it were, the results warrant the extra effort.

The exanthemata have long been treated with the initial warm bath. Strange to relate, the cold bath, with friction, is far more effective in bringing out the rash, and, contrary to old ideas, will not suppress the eruption. When high temperature and marked nervous symptoms appear in the exanthemata, nothing approaches the cold bath in quickly benefiting the little patient.

You are all familiar with the sedative effect of the hot bath in uremia, in convulsions of all kinds, and in cerebrospinal meningitis, and of its benefit in rheumatism and many chronic complaints which time forbids me alluding to.

The modern treatment of pneumonia in children demands the use of the warm bath, which not only reduces fever, quiets nervous symptoms, insures sleep, but tones up the heart action, thus facilitating recovery greatly. Bronchitis, too, in children is greatly relieved by the timely use of the warm baths. The list might be extended, but my object is merely to show that baths are no mean power for good, and should not be neglected or rejected.

The contraindications to the use of the bath are far less than are usually supposed. When rest is imperative, as in pleurisy, peritonitis, perforation or hemorrhage in typhoid, baths are best discontinued. A certain chilly sensation or even cyanosis of the body does not contraindicate their use, but cyanosis of the face is an indication of danger. Syncope may cause their cessation. Atheromatous cases and angina pectoris contraindicate hot baths.

As to technic, ten or fifteen minutes usually suffices, but one point I would emphasize in the cold bath, viz.: *friction*, which is absolutely necessary, over the surface of the body, insuring reaction and preventing internal congestions. The neglect of this is fatal to the good effects of the cold bath.

I do not recommend the bath as a "cure-all." It is merely a powerful remedy in combating disease which I feel is not as generally used or appreciated as it should be. It is one of many remedies which should belong to every physician's armamentarium, be he hospital, city or country practitioner.

The bath I have devised is cheap, enabling many to

use it. It is portable, no larger than an ordinary hand-satchel when folded, and can be carried by the nurse or physician. It can be operated by one attendant, as no lifting of the patient is necessary. It is simple, with nothing to get out of order. It consists of a canvas strap, encircling the head-board of the bed, the ends of the canvas belt fastened by a simple catch, so that the belt may be drawn taut, another canvas belt of similar design for the foot-board, two rings, twenty-six inches apart in each canvas strap, a rubber sheet hemmed at both sides, in which slip ropes, on the ends of which are four snaps. The patient is rolled on the sheet, the four snaps are caught in the four rings, and the tub is ready for the water. It is emptied by lowering one corner, and finishing with a small piece of rubber hose used as a syphon. When not in use it folds up in a small cotton bag.

A still simpler modification can be made with a rope tied firmly around a head-board, another around a foot-board, and two parallel ropes connecting them, and three yards of common table oilcloth, fastened by a dozen clothes-pins to the rope. *

In my judgment, there is no excuse for the busy practitioner neglecting a remedy that will do for his patient what no other drug will do. My one wish in writing this paper is to forcibly call your attention to the fact that this common, every-day, despised, neglected, yet potent remedy, *water*, should be used, and can be used, by every physician who truly has the good of his patient at heart.

PNEUMONIA.

ITS COMPLICATIONS AND SEQUELAE*

BY R. B. PREBLE, M.D.

CHICAGO.

(Concluded from p. 446.)

ENDOCARDITIS.

Aufrecht states that the frequency of acute endocarditis as a complication of pneumonia seems to vary with time and place. He personally has seen but one case. Netter reports 9; Weichselbaum 6, and Sello 6. According to the tables given by Jurgensen, it occurs in 0.2 per cent. of the cases in Vienna and Stockholm; in 0.9 per cent. of the cases in Basel. Sello's 6 cases were in 750 cases of pneumonia, making 0.8 per cent. Banti found 2 cases in 27 autopsies; Netter 2 in 26 autopsies. Netter has had a personal experience with 55 cases of ulcerative endocarditis, of which 23 were due to pneumococcus, and of this 23, 16 were associated with pneumonia.

The endocarditis may be either verrucose or ulcerative, but is usually the latter. Any condition which debilitates the patient—alcoholism, pregnancy, and the age between 30 and 60—predisposes to the occurrence of the pneumonic endocarditis. The date of onset cannot be accurately determined in many cases, but usually it is a late rather than an early complication. It presents some interesting contrasts to other forms of acute endocarditis. One-seventh of the cases collected by Netter were on the right side. This is three times the proportion found in the more common forms of endocarditis. The basal valves, aortic and pulmonary, are more often affected than the auriculo-ventricular. Another point is that while the vegetations are often large, emboli are

*Presented to the Section on Practice of Medicine, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

infrequent. The endocarditis may begin during the course of the pneumonia, in which case the symptoms are easily overlooked, at least until the pneumonic symptoms disappear. More commonly, however, the pneumonic symptoms end in the usual way, and after a shorter or longer period of apyrexia, the fever reappears and the course runs similar to that of any other acute endocarditis. The clinical course does not present any marked differences from the pyogenic endocarditis, but in general the fever is more regular, the duration is longer, and the emboli are less frequent. The mortality is very high, and more than half these cases die within the first month. Recovery may occur, as is illustrated by Case 4, in whom it seemed reasonable to believe the endocarditis pneumonic. We must also mention the frequency with which endocarditis is associated with meningitis, seven-ninths of the cases of endocarditis showing meningitis, while only one-third of the cases of meningitis show endocarditis.

ARTHRITIS.

Arthritis is not a common complication of pneumonia. Vogelius, in 1896, could find but 11 cases, including 2 of his own, in which a complicated arthritis was demonstrated as due to the pneumococcus. Netter collected 18 cases. In 4156 cases of pneumonia reported from the various German clinics, there are only 6 cases of arthritis. The arthritis may occur at any time during, after, or even before, the development of the pneumonia. The process is usually monoarticular, and in the upper extremities, where it affects the larger joints oftener than the small. If it occurs before the pneumonia, or after the crisis, it causes manifest constitutional symptoms beginning with a chill. If during the course of the pneumonia, there are only the local joint changes, swelling, redness, pain, with serofibrinous or purulent fluid in aspiration of the joint. Such joint changes are extremely serious, for they are local manifestations of general infection, which almost always causes death.

Joint pains are more common than the arthritis, and, like it, are more often monoarticular, and usually in the upper extremities. Netter found 17 cases of polyarthralgia and 35 cases limited to one joint. There may be no demonstrable changes in the joint, and the pain may be but transient, or there may be redness and swelling, and fluid in the joint. Such cases may recover on simple fixation even after weeks.

Suppuration in the soft parts has been seen repeatedly, but presents no special symptoms. There may be one or many such foci in any case. In general, the infectious complications occur in combination rather than singly. I have been able to find no references to suppurative panophthalmitis as complication of pneumonia, although I have personally seen two instances of it.

The following cases may be cited as illustrations of this complication:

CASE 7.—Dennis G., aged 33, entered Feb. 6, 1899. Family and personal histories were without interest. During the early part of January he had had la grippe, and on January 23 had a chill; since then he has been worse. He had more or less diffuse pain, especially marked in the right side, and pain in the right side increased by breathing, also pain in the right shoulder and all the joints of the left arm. He had some cough, nausea, vomiting; anorexia, constipation, insomnia.

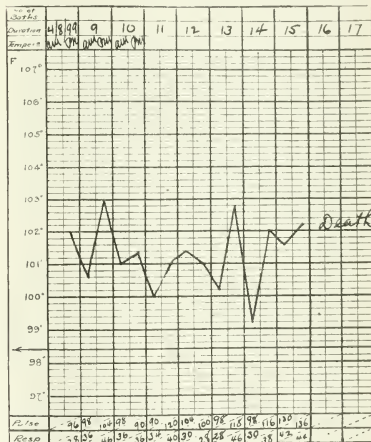
Examination showed an intelligent and well-nourished adult, breathing rapidly and noisily. He had marked icterus, erythema over the sacrum, left shoulder and elbow, with some superficial erosion. Right chest: Dulness below the eighth dorsal spine, extending forward to the axilla; over this area lessened breath and voice sounds; farther forward, pleural friction. Left chest: Below the third spine dulness, tubular breathing, bronchophony and crepitant râles. Heart, nervous system and abdomen were negative. The joints of the right foot, left knee, elbow, wrist and left second metacarpal

phalangeal joint were red, swollen, painful, and tender. Temperature was 100 in the axilla; pulse 96; respirations 28. Temperature ranged from 98 to 101; pulse from 96 to 130; respirations from 28 to 48 for forty hours, until death. Smears and cultures made from the left wrist and from the blood show pneumococci.

Diagnosis: Pneumonia of the left lower lobe, right sided pleurisy with effusion, and multiple arthritis due to pneumococci. No autopsy.

CASE 8.—D. R., a watchman, entered March 8, 1899. Two months before he was in Ward 4 with typhoid and pneumonia, and was transferred from there to the contagious ward with erysipelas. Finally he recovered and left the hospital ten days. Five days ago he had repeated chills and became delirious, and now complains of pain in the right knee and left shoulder.

Examination showed a well-developed, but emaciated adult, breathing rapidly, very deaf. The heart and left lung were negative. The right lung showed signs of consolidation over the right upper and part of the middle lobe, with friction in the lower part of the axillary region. The liver extended three finger-breadths below the costal arch and was tender. Urine, 1010; contained a large amount of albumin, granular and epithelial casts. Joints were tender, and there was swelling of the right knee and left shoulder. (For temperature, pulse and respiration see curves.)



Case 8.—Pneumococcus pyemia.

March 10, abscess on the back was opened, and pneumococci found in the pus.

March 13, abscess on the scrotum; pneumococci found in the pus.

Patient died one week after entrance.

Diagnosis: Pneumonia with multiple abscess in the soft parts, with multiple arthritis; nephritis.

CASE 9.—Child 14 months of age, seen with Dr. Prince. Eight days before the patient was seized with convulsions, and when seen by Dr. Prince had pneumonia of the left lower lobe. Three days later it had swelling of the left hand. When seen by me on the eighth day of the illness, there was a circumscribed pneumonia of the left lower lobe. There was a circumscribed red, tender, and painful swelling in connection with the left humerus just above the elbow-joint, and swelling and redness of several small joints of the left hand. I advised removal to the hospital, where the patient was placed in the care of Dr. Oelster, to whom I am indebted for the subsequent history.

The swelling of the left humerus was opened and proved to be a periostitis due to the pneumococci. Several other abscesses developed later in other parts, and were opened in the

course of the following weeks. The child had also, a few days after entrance into the hospital, a return of the pneumonia, and several weeks later had an otitis media. No examination of the blood was made. Eventually it made a complete recovery.

Diagnosis: Lobar pneumonia, with subsequent pyemia due to the pneumococcus.

OTITIS MEDIA.

Otitis media is a rather common complication, the infective agent reaching the middle ear by extension through the Eustachian tube. It may be unilateral or bilateral, and occurs more frequently in children than in adults. Ball illustrates by personal cases the fact that many of the general cerebral symptoms seen in meningitis may occur in otitis media following pneumonia. There was headache, vomiting, delirium, restlessness, fever, and coma, all disappearing promptly after the rupture of the tympanum. None of these cases presented any focal symptoms.

Turning now from the complications in which the infective agent travels along blood or lymph vessels or ducts, let us take up those where the extension is direct, such as pleurisy and pericarditis.

PLEURISY.

Pleurisy is by all odds the most common complication; so common, in fact, as scarcely to deserve the name of complication, for it occurs whenever the pneumonic process reaches the surface of the lung. The exudate is usually fibrinous, and limited to the pleura covering the pneumonic area. Such cases can be recognized only by the pain which they cause, and sometimes by friction also. Cases where the exudate is largely serous, causing the accumulation of fluid in the chest in sufficient amounts for recognition, are less common, their frequency being indicated by the following table:

	Pneumonia Cases.	Pleuritis.	Per Cent
Vienna	5738	298 exudativa	5.2
Stockholm	2616	104 do	4.0
Basel	230	35 do	15.3
Aufrecht	1501	89 serous and purulent	5.9
Sello	750	65	8.7
Grisolle			12.6
Dunst in Vienna (1857-61)			15.8

When we recall that at least 400 c.c. of fluid are necessary before fluid can be demonstrated in the adult chest, it is evident that many cases are overlooked. The percentage of cases in which there is a large effusion is small, about 1 per cent., according to Sello.

The pleuritis may precede or follow the pneumonia, the former being the decided exception. In 57 cases in which Sello demonstrated the presence of fluid by exploratory puncture, only 2 were at the beginning of the pneumonia, 31 during the pneumonia and 24 after the crisis. It usually appears about the fourth or fifth day of the pneumonia. Such a pleurisy has but little effect upon the clinical course of the pneumonia, and does not, according to Huss, materially increase the mortality, only 0.8 per cent., according to him. Jurgensen agrees with this, but quotes statistics from Basel, where the mortality of pneumonia with pleurisy was double the average mortality. When the pleurisy follows the pneumonia, there is no constancy about the clinical course; there may be no temperature, or there may be days of high and remittent fever when the fluid is serous.

The diagnosis of pleurisy with effusion complicating the pneumonia is dependent entirely upon physical signs, the distinctness of which is proportional to the amount of fluid. In some cases the signs of fluid are so marked as to entirely obscure the signs of the pneumonia. In making the diagnosis more attention should be paid to pressure symptoms, such as dislocation of the heart, de-

crease in size of Traube's space, than to intense dulness with loss of vocal fremitus and breath and voice sounds. The latter signs, as already stated, are absent in cases of massive pneumonia also.

The diagnosis of the nature of the fluid can be made by exploratory puncture only, and this should always be made, irrespective of the degree or type of the fever, if the signs of fluid persist for any length of time after the resolution of the pneumonia, in order to demonstrate or exclude the presence of an empyema.

EMPYEMA.

Empyema is by no means a rare outcome of the meta-pneumonia pleurisy, and like the other complications, varies in frequency from time to time and place to place. Aufrecht found 23 empyemas in 1501 cases of pneumonia; i. e., 1.5 per cent. Sello found 34 in 750 cases, which is 4.5 per cent. In general, empyema is more apt to follow severe and prolonged pneumonias, although there are exceptions to this rule. Cases ending by crisis are not often followed by empyema. Sello found this only once in 34 cases. Empyema is not common after 30 years of age. Of 286 cases collected by Netter, 215 were under 30; in Sello's table 15 were under 30 and 27 under 40. Two-thirds of the empyemas tabulated by Sello were on the left side, a rather striking observation when one recalls the greater frequency of right-sided pneumonia.

The development of an empyema brings no symptoms which are characteristic. The fever of the pneumonia falls gradually, and there may be a period of complete apyrexia, varying from a few days even to a few months in duration; but, as a rule, the fever of the pneumonia passes gradually over to that of the empyema. There is no constant type of this, for the fever may be continuous, intermittent, remittent or hectic. Occasionally there is no temperature at all. Chills are exceptional. Edema of the chest wall is sometimes seen, but less often than in other forms of empyema. The meta-pneumonic empyema is peculiar in the frequency with which it ruptures into the bronchus; something like 25 per cent. of the cases do so, according to Netter. Such rupture occurs most frequently in the third or fourth week, and while it may, it does not often cause a pneumothorax. The diagnosis can be made by exploratory puncture only.

The bacteria found in the pus are most often the pneumococcus alone; less often the pneumococcus with pus cocci; next the pus cocci singly or in combination, and sometimes the fluid is sterile.

PERICARDITIS.

Pericarditis is a far less frequent clinical complication than it is an accidental post-mortem finding. The following are the statistics:

	Pneumonia Cases.	Pericarditis.	Per Cent.
Vienna	5738	27	.5
Stockholm	2616	22	.9
Basel	230	9	3.9
Wurtzburg			.54
Sello	750	7	.9

Osler found 5 in 100 autopsies; Banti in 5.4 per cent. of the autopsies, and Netter in 8 per cent. of the autopsies.

Pericarditis may be due to direct extension, or to metastasis by the blood-channels; the former is the rule. We would, therefore, expect the pericarditis to be more common with left-sided pneumonia, especially of the upper lobe, and this is a fact. Jurgensen says that in all his personal observations there was pneumonia of the left upper lobe. Diehl states that resection has a marked influence upon the frequency of pericarditis and menin-

gits, basing his opinion upon the following figures: In 17 fatal cases treated by venesection he found meningitis 3 times and pericarditis 5 times, while in 22 fatal cases treated with tartar emetic these occurred but once, and in 14 fatal cases treated by dietetic measures they did not occur at all. In other words, after venesection he found pericarditis in 29 per cent. of the autopsies, to contrast with the 5 to 8 per cent. found by Osler, Banti and Netter.

The difficulties in the way of clinical recognition of the pericarditis are numerous and are mainly due to the presence of the neighboring pneumonia or pleurisy. The diagnosis of the pericarditis here, as elsewhere, depends entirely upon physical signs; therefore, while there may be subjective symptoms in the way of precordial distress and pain, with an increase or prolongation of the constitutional symptoms of the pneumonia, there is nothing characteristic about these which would suggest the development of the pericarditis. When there is a pneumonic area bordering upon the heart, or a large effusion in either pleural sac, the pericardial friction is the most reliable sign. If neither of these is present, the diagnosis is easily made by the physical signs common and usually marked in pericarditis.

The appearance of the pericarditis is always a very serious matter, for it has a marked effect upon the mortality, the patients dying either from the severity of the pneumonic process or from cardiac insufficiency. The amount and character of the exudate is not a matter of indifference, for most of the cases which recover are examples of dry pericarditis. If the patient survives the acute stage, we find exactly the same general condition seen in the pleurisy, the only difference being in the physical findings. If there is fluid in the pericardium, it may be either serous or purulent, and here, as with the pleurisy, if the signs of fluid persist for any length of time, no matter whether they are accompanied by constitutional symptoms or not, exploratory puncture of the pericardium should be made to determine the character of the fluid.

In the third, or toxic, group of complications we include those complications mainly nervous and renal which are apparently not due to direct infection by the pneumococcus, and for which the fever *per se* does not sufficiently account. Many of these were formerly referred to the increase in temperature, but the often marked disproportion between their intensity and that of the temperature has led to the theory that they and the fever are different results of a common factor.

Certain nervous symptoms are common in pneumonia, and it is only when present in an unusual degree that they need attract attention as complications. In children pneumonia, like other infectious diseases, frequently begins with general or local convulsions. Such an onset, especially when combined with vomiting and marked stiffness of the neck, is alarmingly suggestive of meningitis. Such symptoms of cerebral irritation are not common in adults, in whom it is shown by delirium. Delirium is a common manifestation of pneumonia, and varies in type from a low muttering delirium to one of wildest excitement. There are certain factors which predispose to the development of delirium. There can be no doubt of the fact that this and other cerebral symptoms are more marked when the pneumonia is in the upper lobe. Heinze, in 317 cases of pneumonia, had 98 with severe nervous symptoms, and of these 40.17 per cent. had pneumonia limited to the upper lobe, and 25.5 per cent. limited to the lower lobe. It is not plain why upper-lobe pneumonias should be more often delirious

than others, but it has been suggested that the infiltrated and swollen upper lobe presses upon the veins returning the blood from the brain. In this way the nutrition of the cells is lowered, and they are exposed to more intense action of the toxins in the circulating blood. Anemic or debilitated individuals are prone to delirium, because of the more easily disturbed equilibrium of the poorly-nourished brain-cells. This is the explanation of the greater frequency of delirium in cases treated by venesection. Alcohol, also, is an important factor in the development of delirium, which in these cases does not differ from the common delirium tremens. The frequency depends entirely upon the class of the patient. Huss puts it at 6.9 per cent. of the cases, while in 5738 cases from Vienna only .9 per cent. showed it. Aufrecht had 5.3 per cent. The 100 cases previously referred to as tabulated by me in 1893 make a still worse showing, with 9 per cent.

A far less frequent nervous manifestation is the occurrence of cerebral palsy, hemiplegia, monoplegia and aphasia. I do not here refer to such cases as are due to organic lesions, such as hemorrhage, softening or meningitis, but to those cases in which the transient course or the negative post-mortem findings prove the absence of an organic lesion in the ordinary sense of the term. Numerous instances of such paralyzes have been recorded by Huxham, Lépine, Macario, Stephan, Charcot, Chantemesse, Aufrecht and others. Most of these have been in patients past 60 years; in 20 of 28 cases collected by Bouloche, but still there are numerous instances in adults and even in young children. Such a paralysis may come on at any time during the course of pneumonia. It may, indeed, precede the lung changes, but, as a rule, comes on during the second or third day of the disease, which may be severe or mild. The paralysis may come on suddenly without premonitory signs, but is often preceded by headache, fullness, formication over the area later paralyzed, or there may be, as in the cases reported by Moizard, Jacksonian convulsions. The paralysis takes the form of a hemiplegia or monoplegia, or there may be aphasia with paralysis of the face and arms. Accompanying the paralysis there may be delirium or coma, and Cheyne-Stokes respiration, with weak and irregular pulse. The paralysis exactly resembles the common form, except in its course. The symptoms all disappear in the course of a few hours or days.

The explanation of these cases is not clear. Lépine, believing that these pneumonic paralyzes occurred only in the aged, referred them to atheromatous changes in the cerebral blood-vessels with resultant circulatory disturbances, merely precipitated by the pneumonia. Stephan, because of the examples of this form of paralysis in adults and children, whose vessels were not atheromatous, discarded Lépine's explanation, and referred them to the effects of the pneumotoxins upon the brain-cells or their circulation, comparing them to the monoplegias and hemiplegias sometimes seen in uremia, and not due to demonstrable anatomical lesions. Atheroma, high temperature, malnutrition and heart weakness are merely adjuvant causes.

All authors agree that this complication occurs most often with pneumonia of the upper lobes. Aufrecht believes that the pneumonia of the upper lobe, by lessening the influence of the negative respiratory pressure of the thorax, retards the return-flow of the blood from the brain, and leads to the development of cerebral edema, which may be partial and cause a hemiplegia or a monoplegia.

The following case is an interesting example of such a monoplegia:

CASE 10.—E. S., aged 2½ years, was seen with Dr. Urheim, May 22, 1899, after a few days of illness of indefinite character. He had a temperature ranging about 103, with swelling of the glands of the neck; no vomiting nor eruption. May 24, a small patch, half an inch in diameter, appeared on one tonsil. No culture was made. One thousand units of antitoxin was given. The throat cleared up, but the temperature continued, reaching 105 on the 26th. About this time retraction of the head and rigidity of the neck were noted. The child was conscious at this time, taking nourishment freely and retaining it. Pulse was strong, but rapid. On May 27, there suddenly developed a complete paralysis of the left arm; no paralysis elsewhere; no disturbance of the sensorium except stupor; no convulsions; pupils equal and reactive to light. When seen by me May 30, paralysis of the left arm had completely disappeared; the neck was less stiff, the head not retracted, there were no paralyses, sensorium was free, and there was consolidation of the right upper lobe. Temperature per rectum was 100.9. Examination was otherwise negative. The child made a complete recovery.

RENAL COMPLICATIONS.

Albuminuria is of frequent occurrence in the course of pneumonia. Jurgensen states that daily examination of the urine would probably show the presence of albuminuria in all cases. More definite statements are made by the following:

	Cases.	Per Cent.
Fraenkel and Reiche	356	albuminuria in 42.6
Rosenstein	130	albuminuria in 23.1
Crämer	66	albuminuria in 44.9
Startz	259	albuminuria in 42.5
Bleuler	121	albuminuria in 52.1

The frequency varies in different groups of cases. The age of the patient is of influence, as is shown by the table of Fraenkel and Reiche, who found albuminuria much less frequent in children than in adults. It is influenced, also, by the extent of the pneumonia, increasing in frequency with the extent. One lobe showed 38.8 per cent.; two lobes, 53.9 per cent.; three or more, 54.1 per cent. Of 175 fatal cases, 60.57 per cent. showed albuminuria; 36.5 per cent. of 535 cases ending by crisis, and 43.9 per cent. of 240 cases ending by lysis. The character of the epidemic also has a marked influence upon the frequency, and this, I believe, will account for the marked difference in the percentage given by different authorities. Hyaline and granular casts are very often found associated with the albuminuria, but definite figures as to their frequency could not be found. Authorities agree, however, in the opinion that these are not to be interpreted as due to an accompanying nephritis, but are the result of degenerative changes in the kidney.

The line between such cases of albuminuria of this class and a true nephritis can not be a sharp one, but the criterion of Aufrecht, while not exact, is practical. The urinary changes due to simple renal degeneration should disappear within three or four days after the crisis, and if they persist longer they may be regarded as due to a complicating nephritis. That nephritis is by no means a common complication is shown by the following table:

	Cases.	Nephritis.	Per Cent.
Vienna	5738	66	1.2
Stockholm	2616	52	2.0
Zürich	500	13	2.6
Fraenkel and Reiche	956	6	.53
Wagner	150	4	2.6
Rosenstein	130	3	1.7
Aufrecht	1501	16	1.0

Personally in 100 cases I found one acute nephritis and one acute exacerbation of the chronic. This makes 11,690 cases, with 160 cases of nephritis, i. e., 1.4 per cent.

The older explanation that the renal changes are due to temperature must be given up, because there is no relation between the fever and the albuminuria. The cur-

rent theories are that they are due either to the action of toxic bodies formed by the pneumococcus, or to direct action of the cocci excreted through the kidney. The changes found post-mortem in most cases exactly resemble those found after intoxication with certain inorganic bodies, and in other infectious diseases where they are believed to be toxic. However, numerous authors have demonstrated the pneumococci in the kidneys. Fraenkel and Reiche found them in 22 of 26 cases examined for this purpose. It seems probable that both theories are correct.

Nephritis may appear at any time during the course of the pneumonia, or may precede or follow it. It has no manifest effect upon the evolution of the disease, and does not, as a rule, cause any symptoms other than the urinary changes. Réndu reports a case of pneumonia complicated by nephritis in which the critical polyuria failed to appear when the pneumonia ended by crisis. Uremic symptoms are rare, but occasionally headache, insomnia and vomiting are seen. Edema, local or general, occurs, but it is exceptional. The nephritis is, then, feared not because of any symptoms which it causes, but because it is an expression of an intense infection or intoxication. Wagner notes the frequent splenic tumor, the early heart weakness and marked nervous symptoms as an expression of this same intoxication.

The prognosis is grave. Nauwerk lost 7 of 14 cases. Of Fraenkel and Reiche's 6 cases, 2 recovered, one disappeared, and 3 were discharged with nephritis, and one of these died ten months later of nephritis. The cases last for a few weeks to months, and end either in recovery or death, with an occasional exception in which the nephritis becomes chronic. Leyden, Fraenkel and Reiche, and Eisenlohr each report one instance of this.

The list of abnormal outcomes or sequelæ of pneumonia is not so long, and will include only the delayed resolution and induration, abscess and gangrene.

Sometimes after pneumonia has ended either by crisis or lysis and the constitutional symptoms have disappeared, examination shows that the lung has undergone no change; the patient may continue to improve and the lung remain unchanged for weeks and even months, and then gradually undergo resolution. There is no sharp line between these relatively favorable cases of delayed resolution and the much more serious cases of organization and induration. The cases of induration are characterized by three groups of symptoms: 1, continuation of the temperature; 2, the persistence of the signs of consolidation of the lung, and, 3, the gradually increasing deformity of the chest, due to the retraction of the forming fibrous tissue. The fever of the pneumonia passes gradually over into a prolonged and atypical even hectic fever, which persists for weeks or months, and is accompanied by all the constitutional and nutritional symptoms resulting from such a fever, irrespective of its cause. The cough continues, and the expectorate gradually loses its pneumatic character and becomes mucopurulent. Examination of the chest shows the persistence of the signs of infiltration of the lung, and gradually there are added to these the changes resulting from retraction. Usually one does not wait long for the latter. Personally, I have seen but three instances of such post-pneumonic induration, and in all the signs of retraction began to appear within the first month.

The changes resulting from retraction require only the briefest description, for they do not differ from those seen in cases of retraction from other causes. The affected side becomes smaller, with narrowing of the intercostal spaces and curvature of the spine. The res-

piratory movements are lessened; the mediastinum and its organs are dislocated, leading to a variety of symptoms, such as malposition of the apex-beat, visible pulsa-

work. Laennec referred to emaciation, and Aufrecht agrees that this has some influence. Marchand believes that a previous pneumonia which has not entirely disappeared or has left behind pleural adhesions with sub-pleural thickening is responsible for most cases, and it is a fact that most cases, but not all, show pleural adhesion. Such adhesions increase the flow of blood to the parts and, at the same time, by lessening respiratory movements favor the organization of the exudate. Kahl-den agrees with this, and notes that in cases of this sort the alveoli seem to contain a larger amount of fibrin than is ordinarily present.

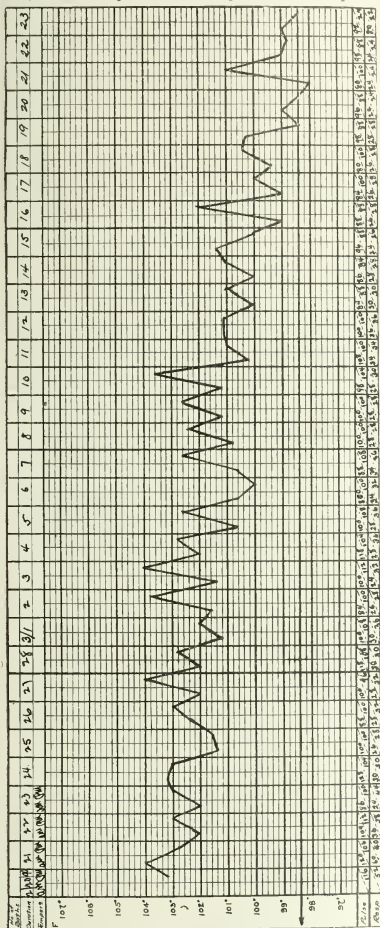
CASE 11.—J. J., colored, was seen Feb. 20, 1899. His family and personal history were good. He had had no previous pneumonia. About two weeks before he had had a severe chill, followed by fever, with cough and shortness of breath; nausea, vomiting and anorexia.

Examination showed a well-developed and intelligent negro, with left chest normal; heart negative. Right chest.—From the third dorsal spine to the fifth rib in the nipple line was an area of more intense dullness. There was no vocal fremitus over this area, but there was very distinct bronchial breathing. Pulse was 120; temperature 103; respiration 44. The dullness and resistance over the right chest were so marked that in spite of the distinct bronchial breathing and the voice sounds, the exploring needle was used, but without result. The course of the temperature, pulse and respiration are shown by the curve. The physical signs in the chest did not change, but after three weeks stinking sputum appeared, and after lasting a few days disappeared. About this time it became apparent that the right side of the chest was decreasing in size, and this became more and more marked until at the time of discharge there was a very manifest difference.

This case presents the ordinary clinical history of an induration, continuation of the fever, persistence of the signs of consolidation, and later, retraction of the affected side. The intense dullness and resistance in the early stages suggest that there were here the scars of an old pleurisy, and that this case supports the idea of Marchand and Kahl-den that such a pleurisy favors the organization of a pneumonic exudate.

Abscess of the lung is an infrequent happening. Aufrecht found 3 in 253 autopsies, i. e., 1.2 per cent. Sello found 11 in 750 cases, i. e., 1.5 per cent. The abscess may be single or multiple, and is usually small. They are more common in the upper than in the lower lobe, and more often left than right. All debilitating conditions, malnutrition, alcoholism and senility, are said to favor the formation of such abscesses. It seems probable that in all cases the abscess formation is due not to the pneumococcus, but to a coincident infection with the common pyogenic organisms.

The cases are characterized clinically by the continuation of the fever, which presents the characteristics of a pus temperature, or there may be a period of apyrexia lasting a week or two, and ending with chill, followed by fever. Resolution is delayed. These are often the only clinical manifestations, and since there is nothing here which more than suggests an abscess, the diagnosis is often impossible. The diagnosis can be made only on the appearance of the characteristic sputum. The sputum gradually changes from pneumonic to mucopurulent or to pure pus. In some instances the change takes place suddenly, with a sudden expectoration of considerable amount of pus. Sello, in his 11 cases found 2 in which the sputum remained pneumonic. Both of these died and the diagnosis was made in the dead-house. In 4 the fluid was mucopurulent, and in 5 pure pus. Only once did he find the green sputum described by Traube. The sputum from an abscess contains pus corpuscles, shreds of pulmonary tissue and elastic fibers, with crystals of cholesterolin and hematoidin and bacteria, and has the odor of pus. Diagnosis of the site of the abscess is



Case 11.—Pneumococcus ending with induration.

tion of the pulmonary artery, and closure of the pulmonary valve.

Induration is not a common outcome, and probably the figure of Sello, who places it at 2.1 per cent., is too high. The causes for its occurrence are not definitely known, but it has been referred to senility, alcoholism, general debility, and other indefinite causes. Fraenkel thinks that there may be some bacterial influence at

usually impossible, but if cavity signs appear in such a case, the diagnosis of the site can be made. Rupture into the pleural cavity occurs frequently, causing an empyema or a pyopneumothorax. If death does not result, the course of the abscess is prolonged; recovery may occur.

Gangrene occurs even less often than the abscess. Grisolle found no instance of it in 305 cases of pneumonia, and in 70 cases of pulmonary gangrene only 5 were referred to pneumonia. Sello found 3 examples in 750 cases, i. e., 0.4 per cent.; Aufrecht none in 1501. The course of the pneumonia is not modified in any characteristic way by the development of the gangrene, and here, as with the abscess, the diagnosis rests upon the change in the character of the sputum. The sputum becomes thinner and gradually changes through the browns to the color of prune juice, and at the same time takes on the terribly stinking odor of gangrenous parts. It contains shreds of tissue, elastic fibers, cells, crystals and bacteria.

Other sequelae, such as neuritis, tetany, chorea, and psychoses, occur, but so infrequently as to need nothing more than mere mention.

BIBLIOGRAPHY.

- Aufrecht: Nothnagel System, xiv, ii.
 Ball: Med. News, 1895, 61.
 Banti: Centh. f. Bak., 1896, xx, 849.
 Brunnner: Cor. Blatt f. Schweiz. Aerzt., 1892, xxii, 329.
 Carré: Gaz. hebdom., 1888.
 Cary: Amer. Med. and Surg. Bull., 1896, x, 507.
 Chausse: Bull. Soc. Anat. de Paris, 1895, 70, 239.
 Clément: Bull. et mem. de Soc. med. de hôp., 1893, 10, 873.
 Da Costa: Phil. Med. Jour., 1898, ii, 519.
 Duploect: Bull. et mem. soc. med. d. hôp., 1897, xiv.
 Eisenlohr: Deut. Med. Wechschr., 1892, 723.
 Fiesch: Berl. Klin. Wchn., 1892, No. 48.
 Fliessinger: Rev. gen. d. clin. et d. Therap., 1897, xi, 594.
 Fischer: N. Y. Med. Jour., 1897, 46, 255.
 Franckel, A.: Deut. Med. Wechschr., 1895, 153.
 E. Franckel, u. Reiche: Zeit. f. Klin. Med., 1894, 25.
 Gilbert and Grenet: Compt. rend. soc. d. biol., 1898, 10, 922.
 Gilbert and Grenet: Arch. gen. d. Med., 1899.
 Gubler: Arch. gen. d. Med., 5th series, xvi, xvii.
 Guinon: Gaz. d. hôp., 1896, 69, 280.
 Holtzheim: Deut. Med. Wechschr., 1896, 83.
 Japha: Deut. Arch. Klin. Med., 1898, 62, 177.
 Juergensen: vti. Zeilmann System.
 Kahlden: Zeigler's Beiträge, xi.
 Kahlden: Zeigler's Beiträge, 1893, xiii, 279.
 Kahlden: Obl. für allgem. Pathologie, 1897, 561.
 Katz: Deut. Med. Wechschr., 1897, 23, 436, 855.
 Leszynsky: N. Y. Med. Jour., 1896, 63.
 Maladies de l'enfance. Grancher, Comby et Marfan. Tome iv, 99.
 Moizard: Jour. d. Med. et chir. Prat., 1896, 67, 629.
 Mommson: Dent. Med. Wechschr., 1879, 467.
 Nauwerck: Zeigler's Beiträge, i.
 Netter: Compt. rend. d. Soc. d. biol., 1889 and 1890.
 Netter: Arch. d. physiologie, 1886, 8, 306.
 Netter: Arch. gen. d. Med., 1887, Mar.
 Nothnagel: Volkmann's Vorträge, 66.
 Ortmann: u. Samter Virch. Arch. 120, 5ft.
 Page: Med. News, 1895, 66, 377.
 Pearce: Bost. Med. and Surg. Jour., 137, 561.
 Petro: Gaz. hebdom., 1897, 853.
 Potain: Med. Week., 1897, 8, 471.
 Powell: Brit. M. J., Nov., 1895.
 Queyrat: Gaz. d. hôp., 1892, 657.
 Rasch: Hospital Tidende, 1893, Nos. 18 and 20.
 Rendu: Semain. Med., 1888, 165.
 Sello: Zeitschrift für Klin. Med., 1898, 93, 112.
 Vogelius: Arch. d. Med. Exper. et d' anat. path., 1896, viii, 186.
 Wagner: E. Deut. Med. Wechschr., 1893, 33, 441.
 Wagner: Deut. Archiv. Klin. Med., xvii.
 Weichselbaum: C. bl. für Bak., 1897, 2, 213.

DISCUSSION ON PNEUMONIA.*

DR. J. H. MUSSER of Philadelphia—I do not feel qualified to open this important and serious subject, which has been thoroughly discussed by the readers of the various papers, without more reflection, but in the absence of those to whom it has been assigned I can not shirk the duty. Pneumonia has been taken out of the category of lung diseases and is now considered an infection. I suppose we shall have to continue the use of the term pneumonia, but as we near the time of im-

proved pathology it would be better to associate pneumonia with the term "pneumococcus infection." For certainly it is an infection; long before bacteriology came to our assistance we were satisfied that pneumonia was not a local but a systemic disease, from the clinical course. The chill, fever, possibly vomiting, rapid pulse, alteration in the respiration rate, and the leucocytosis—the occurrence of all these symptoms, before physical signs can be made out, indicate that an intense general process is present. Because of the few physical signs it was called pneumonia. Although we often could not make out the physical signs during life, at autopsy we may find small portions of the lung the seat of the consolidation. Pneumococcus infection it should be called.

It is not necessary for me to refer again either to the course of the disease, its clinical history or to the manifestations of this infection. I shall refer to one or two points: 1. To the form of pneumococcus infection beginning with abdominal symptoms; there are many cases of this character. Chill, fever, vomiting and abdominal pain are present, the pain localized, probably, over the upper half of the abdomen, and often again localized in the portion of the abdomen where the appendix lies. Indeed, in one instance the patient was supposed to be suffering from appendicitis. In a large majority of cases, however, the tenderness and great pain in the upper half of the abdomen are very misleading. One must not be misled by the severity of this infectious process.

Again, too much stress can not be laid on the occurrence of pericarditis during the course of the pneumonia; it is often overlooked because of the insidious development of the complication. Without pain, but with only an increase in the pulse-rate, we are feebly warned of the development of this associated process. As has well been stated, the physical signs alone enable us to distinguish pericardial infection. I wish, however, to lay stress on the importance of watching the pericardium, noting the physical signs there, for in the large majority of instances, it is too late when we first learn of this complication by symptoms of great effusion when operative measures must be resorted to.

There are a few other complications that have not been referred to. Meningitis has been considered, and also the intoxication symptoms. One word further in regard to pleural effusion or empyema. Dr. Preble called attention to the localized areas in the pleura; such areas may be confusing, and we can not determine whether small empyemas may be present. I rely on the locality of the physical signs which indicate fluid in the pleural cavity. If I have physical signs, even if small, along the margins of the lobes, absent fremitus and breathing signs, and with these a continuation of the fever, I look out for the occurrence of infection. This may be between the lobes of the lungs, pointing toward the surface.

In regard to the treatment of pneumonia I shall say but little. I approach no subject with any greater embarrassment than this one of the treatment of pneumonia. I can not tell you how to treat it. Dr. Hare[†] has pointed out that we can not have any "cut and dried rules" regarding it. I feel that all of us should formulate to ourselves what to do in cases of pneumococcus infection. Notwithstanding the fact that this disease should be taken out of the category of lung diseases and included among the infections, still I am convinced that cupping is of great value; cup freely and continuously. I cup in the morning, in the evening, and again during the next day. I repeat the cupping around the areas I believe to be the seat of the consolidation. Following this I am satisfied of the value of cold compresses applied during the course of the disease as insisted on by Baruch. I need not tell you why. These compresses are wrung out of ice-water and applied during the course of the fever. This is especially of value where the temperature is above 102 degrees, and where there is general infection and marked evidence of toxemia; otherwise the compresses are not indicated. Bear in mind, I do not apply these compresses because of their effect on the lung alone, but because of their effect on the heart, the general circulation and nervous system. I am satisfied that the toxic symptoms are controlled by the local applications of cold and it is better to apply these in bed rather than by means of the cold bath out of bed. Cold sponging may be used in addition. In regard to the remedial remedies I know of no specific. I have never given aconite or veratrum viride, nor have I found it necessary to use cardiac sedatives. I look toward establishing proper eliminations as well as possible by the use of marked laxatives and mild diuretics and diaphoretics. I use large quantities of water internally. I do not fear systemic intoxication in typhoid fever or any infectious disease if I keep the kidneys freely acting; as long as the kidneys are acting and there is passed 50, 60 or 80

* The other papers of the Symposium on Pneumonia appeared in the JOURNAL August 19.

[†] Dr. Hare's paper having been published elsewhere, an abstract appeared in the JOURNAL, July 29, p. 274, '28.

ounces a day, I then feel satisfied that the heart is acting all right, the tongue will not become dry, and the so-called typhoid state will not develop. The action of the kidneys is encouraged by simple measures. Of the drugs, we use strychnin and nitroglycerin during the course of the pneumonia, especially during the later stages. With digitalis I have had but little experience. I am doubtful as to its efficaciousness.

Dr. CHARLES G. STOCKTON, Buffalo.—I have had a case that confirms the position taken by Dr. Stengel, that leucocytosis does not mean that the case will result fatally in pneumonia. In my case there were not more than 6000 leucocytes to the cubic millimeter, and the case recovered; this seemed to be quite extraordinary in view of the fact that this was a case of relapsing pneumonia, the only one I have ever seen. It was lobar pneumonia and the child had three relapses. The late Dr. Flint said that this disease had no relapses; it is very extraordinary.

There is another point about the general question that is very interesting: I have stated to my classes that the patient may die of lobar pneumonia without having inflammation of the lungs. I have never seen such a case, but I have seen two cases approaching death where no pneumonia could be discovered. One case died of lobar pneumonia and showed no evidences of any pneumonia until the sixth day, and he died on the seventh day. That was a case of toxemia; that man was like one bitten by a serpent. There was vasomotor paresis and evidence of the most serious processes in operation, but death occurred in the beginning of the inflammation. I think that toxemia is the question that concerns us in the treatment of pneumonia, and wish again to emphasize the fact that lobar pneumonia is a toxic disease, and the treatment should oppose the toxic condition. Why is Dr. Hare careful in the use of stimulants at certain times? He warns us against whipping up the heart too early in the disease. This brings us to a state of timidity when the stimulants are needed. If we have to deal with a patient whose blood is loaded with poisons we would try to eliminate these poisons; a proper amount would be withdrawn and a saline solution introduced. Why not give calomel? I believe that calomel in large doses is of more importance at certain junctures than any one remedy. It should be used to stimulate the liver and to rid the organism of pathogenic bacteria, as Fütterer has taught us, as well as their toxalbumins.

Cardiac failure and edema of the lungs, which mean toxemia, constitute the real danger in this disease. Therefore, we should use strychnin. Strychnin should be used in 1/15-1/20, if needed, in 1/10 grain doses hypodermically, and it should be given until there is no longer vasomotor paresis. There is no doubt that patients will be rescued when any other means would have been futile. If the patient show much excitement from the large doses of strychnin, the use of small amounts of opium will control the irritability.

Dr. GEORGE DOCK, Ann Arbor, Mich.—So many valuable papers have been read, and so much has already been brought out in the discussion, that I can hardly do more than reiterate or criticize some of the statements already made. In no other disease is a knowledge of the natural course of the untreated disease more instructive, and I agree with the advice of Dr. Hare in regard to the duty of the physician as a watchman in dealing with pneumonia. I wish to add my voice to the value of strychnin in the later stages of pneumonia, given judiciously, and also to the value of calomel. I often find the latter useful toward the end of the acute stage. I wish especially to speak of the use of ice-bags in the treatment of frank, croupous pneumonia. I see many such cases in country people of good habits and constitution, and in previously healthy students. Formerly I treated these cases with the cold bath, but this is more difficult to carry out in pneumonia than it is in typhoid fever, and so I was especially glad to find the results with the ice-bag quite as good. A few patients were seen early, and in many the temperature ran high, with breathing rapid, with a good deal of pain, etc. For the latter I formerly used hypodermic injections of morphin. Now the application of the ice-bags quickly relieves the pain, the respiration soon becomes slower and the patient feels greatly improved. The ice-bag is usually applied over the consolidations, and the ice may be mixed with bran if the patient be a weak child or woman. In many parts of the country patients are still treated by hot plinches or the cotton jacket. The heat does not relieve the patient so quickly as cold in most cases. In speaking of the treatment of pneumonia, there is another point that is not borne in mind as it should be, viz., watching the condition of the pleura. In all cases of pneumonia careful examination of the chest should be made for areas of dullness and absent fremitus; and, in doubt, the aspirating needle should be used freely but with proper care. Dr. Preble pointed out the importance of this matter, and I wish to reiterate what he has said. A fairly

good-sized needle should be used. It is also important to make a bacteriologic examination of the fluid for the purpose of finding out the character of the germs present, whether diplococcus, streptococcus, etc., since this assists us in prognosis and in deciding whether a radical operation is necessary or not.

Dr. A. M. HOLMES of Denver, Colo.—I might say a word or two in reference to altitude. For several years I have had the good fortune to live in Denver. At an altitude of about one mile above us and 100 miles from us we have the celebrated Cripple Creek district. At this point there is a great increase in population, it being a new settlement, and there is a great deal of exposure and pneumonia. The mortality rate at this point is exceedingly high. It is customary to send patients to a lower altitude as soon as the diagnosis of pneumonia can be made.

Dr. J. M. ANDERS, Philadelphia.—The subject which now engages the attention of this Section is one of paramount importance, and every aspect seems to have been touched on. It has been shown recently, by Drs. Wells and Folsom, that while the death-rate from typhoid fever, diphtheria, tuberculosis, and other infectious diseases has been decreasing, that of pneumonia has been rather rapidly increasing in recent years. In a disease that prevails so extensively as does lobar pneumonia, this fact corroborates the view expressed by Dr. Wells as to the extreme importance of the subject.

It is now the generally accepted view that lobar pneumonia is due to various cocci, but that the pneumococcus is found in about 90 per cent. of the cases, and it is the only organism present in about 75 per cent. of the cases. Now the special etiology is known to decidedly influence the course of the disease, and to have a bearing on the prognosis. For these reasons it is of the utmost importance that more accurate methods of diagnosis than are now in vogue should be applied to this affection. In short, a bacteriologic diagnosis should be made whenever practicable, for prognostic and therapeutic reasons. Thus the course is apt to be more prolonged, and the prognosis more unfavorable in a streptococcal lobar pneumonia than in a diplococcal pneumonia. The streptococcal variety is more commonly met with in persons previously debilitated by chronic disease than the diplococcal variety, according to my experience.

Again, if it is ever hoped to employ the antipneumococcal serum in a rational way in the treatment of lobar pneumonia, a bacteriologic diagnosis is imperatively demanded. Antipneumococcal serum can not be expected to give good results in a streptococcal pneumonia, nor yet in cases of mixed infection. For the obvious reasons that I have adduced, a plea for the general adoption of an accurate bacteriologic examination for all cases of pneumonia is both timely and important.

The aspect of the question considered by Dr. Stengel is an interesting one. According to my observation and experience, moderate leucocytosis is the rule; only rarely does the count rise to 50,000 white cells to the cubic millimeter. I have always found it to persist during the pseudo-crisis that is so apt to occur on the fifth day, but it also rarely persists for hours, or even a whole day, after the true crisis. This is especially apt to occur in cases in which the resolution is delayed, and those due to the streptococcus alone, or a mixed infection with the streptococcus.

The cases of relapsing pneumonia, a subject to which Dr. Stockton referred, are of lively interest, although rare. During the past winter I attended a male, aged 23, suffering from double lobar pneumonia complicating influenza; he had nearly recovered when he developed a relapse, which, however, affected only one side. Full recovery ensued after a prolonged illness. In this case Prof. Martin examined the sputum, and failed to find the pneumococcus or any other recognized pathogenic organism. It is probable that the relapsing cases are due to some other, as yet unknown, organism than the pneumococcus.

Since lobar pneumonia has been regarded as an acute infectious disease, its real nature and dangers have come to be better appreciated. The true element of danger is the toxemia and septicemia. But the fact should not be lost sight of that there is, in pneumonia, oftentimes a mechanical hindrance to respiration and circulation. This is particularly true of the function of respiration and circulation. This is particularly true of the function of respiration after the heart begins to fail, and after collateral edema and congestion appear in the lungs.

The treatment of pneumonia has been ably discussed. There is no treatment for pneumonia, but there is for the individual case. I heartily approve of the division of the cases into sthenic and asthenic groups, since the treatment of the former should be different from that of the latter. Sthenic cases are commonly met with in the country, while, according to my ex-

perience, they are comparatively rare in cities, particularly in our large general hospitals. In dynamic, or sthenic cases, it is sound practice to resort to blood-letting in the stage of engorgement. This lowers arterial tension, allays the nervous excitement, greatly relieves the pain, and, finally, directly removes a portion of the burden from the heart, without robbing it of much of its power. Cardiac sedatives, as veratrum viride, fulfil the same indications as blood-letting, but they do so at the expense of cardiac power, and the same is not true, to the same extent, at least, of venesection. In the asthenic type of pneumonia, during the stage of congestion, morphin is to be used; this guards the heart, relieves the pain, and at the same time gives comfort and rest to the patient. Leeching, or local blood-letting, withdrawing from six to eight ounces of blood from the side, are measures that may be combined with the use of morphin. It is hard to explain, on physiologic premises, the effect of the local abstraction of blood, but it does diminish arterial tension and nervous excitement, and gives relief from pain. Asthenic cases do well under blood-letting and the application of cold compresses to the chest.

During the second stage of pneumonia the treatment should be sustentative and supportive. In cases of dynamic pneumonia, alcohol must be given sooner or later; the condition of the pulmonary second sound of the heart, the blood-pressure, and the pulse should be our guide in the administration of alcohol. Strychnin should be always employed when alcohol fails, and where there is threatened collapse; it should be administered hypodermically, and not be withdrawn, but continued in smaller dosage until convalescence is reached. Turpentin should be tried in cases of delayed resolution. I can not tell you how it acts in these cases, but it sometimes exerts a good effect.

Dr. H. B. FAVILL, Chicago—My experience in the past affords me abundant proof that Dr. Billings, the chairman, has never an intention to be unkind to me. My position on this program, however, and the fact that I consented to be put on the program, suggests to me the experience of the country boy with the yoke of steers. Those of you who have encountered the mysteries of a log chain and a yoke of steers, know what is meant by a "toggle." The boy, whose chain had impudently broken, slipped one link through another, and used his finger for a "toggle." The lack of correspondence between his judgment and his zeal is eloquently set forth in his comment. "I seen my mistake the minute the steers straightened." When I saw from one glance at the program, that my enthusiasm had caused me to be made to follow such a list of masters in medicine, I felt for that boy. The gentlemen who have preceded me have all admitted that everything has been said, and that nothing more is to be said, with which I agree, and, like them, I shall probably take my full allotment of time.

The fact that impresses me more strongly the longer I think about it, is the correctness of the conception of our predecessors of pneumonia as "lung fever." For several years now we have abandoned the latter idea of "inflammation of the lungs," and have regarded the process, the symptoms, the dangers as those of toxemia, and have held the local considerations as subordinate thereto. A still broader grasp of the facts as we reach them, involves the conception of pneumonia as a septicaemia of pneumococcus origin. To what extent it is always so general is, for the present, doubtful. That very often it is distinctly so, admits of no question. The place to study pneumococcus infection is in the child. There it manifests its variety and versatility in great intensity, often with the minimum of local developments.

I call your attention to the protean aspects of an infection in which the developments in throat, ear, lung and brain present a shifting picture of confused and inseparable symptoms, which must utterly dismiss the anatomic diagnosis. The tardiness of development of local evidence, the rapidity of evolution, the marked tendency to shift, the masking of crisis by "lapped" developments, but, characterizing all its phases, the tendency to *crisis*, mark a most significant septic process, whose local accidents have many names. Unfortunately, these names are to the practitioner a stumbling-block and a hindrance. When shall we escape? What happens in the adult is less picturesque and less frequent, but frequent enough to greatly enlarge our ideas as to the septic possibilities of pneumonia.

When one considers the confusion resulting from the coincidence of streptococcus infection, and the impossibility of diagnosing with our present knowledge the relative value in a septic case, one must long for the day of rational classification.

I am very much of the opinion expressed by Dr. Stockton as to the value of strychnia in treatment. To regard its use as an extreme measure of stimulation is, I am sure, to overlook its well-demonstrated supportive and steadying power. To use it to the extent of putting the nervous system on a "wire

edge," is to use it injudiciously in the early stages. Its management is much broader than that.

Time will furnish the experience necessary to determine the best use of cold water baths in pneumonia. On this point I am not clear, but I am quite convinced that they have a great value and present no contraindication from the mere element of cold or wet. Just how best to utilize the sedative, tonic, and eliminative qualities may not be established, but the future will give hydrotherapy a prominent place in treatment.

Dr. EDWARD F. WELLS, Chicago—In the twenty minutes allowed me in the reading of my paper, I endeavored to present as clearly and concisely as possible those features of pneumonia, which, in my opinion, are of the greatest present interest and importance. Necessarily, in such a brief period only a little of the results of history, observation, analysis and speculation, as they concern the subject of pneumonia, has been told, and the discussion has brought out the fact, and it is one of the first importance, that I failed to sufficiently emphasize the point that primarily pneumonia is a local affection—the facts at hand lead irresistibly to this conclusion. Pneumonia is not a general disease with a local manifestation. At the expense of partial repetition, allow me to restate, a little more fully, this proposition: Pneumonia is an acute infectious disease of bacterial origin; the essential cause of the malady is the pneumococcus; this micro-organism incites the pulmonary inflammation; and the general symptoms depend, for the most part, on a toxemia due to the introduction into the general circulation of pneumococcal toxins. Primarily the affection is a local one, but many of its principal features and dangers depend on the general toxemia.

I had hoped that the subject of prophylaxis would receive elaborate treatment in the discussion, but apparently we are not quite ready to formulate opinions on this question. It is clearly the most important problem which confronts us today.

Dr. H. A. HARE, Philadelphia—One of the pleasant things about a discussion of this character is that it enables us to use the complimentary terms just applied by Dr. Stockton to what I have said. I was not, however, sufficiently heard to make him understand what I meant, viz., that I believe strychnin was much abused, that it often caused, when given continuously, a rapid, thready pulse, but that in an emergency to overcome a crisis it was one of the best, if not the best, drugs to be employed, and that it ought to be given freely and hourly, but not for days at a time as a stimulant. It does not act as a supportant, but as a "whip."

AFTER-TREATMENT OF ABDOMINAL SECTIONS.*

BY C. L. BONFIELD, M.D.
CINCINNATI, OHIO.

The fate of the vast majority of patients subjected to abdominal section is sealed when the incision is closed. Many will recover without any especial skill being required in their subsequent treatment, others are doomed to die in spite of the most judicious care that can be given them; but in some cases the result is determined by the after-treatment. The days and nights immediately following operation are, for the patient, ones of extreme discomfort. It is not unusual to hear her say: "Had I known what I must suffer, I should never have had it done." A subject that concerns the lives of some and the comfort of many of our patients seems to me to be worthy of more consideration at the hands of operators than it has received in recent years.

The indications for treatment after abdominal section are to secure reaction from shock; to arrest secondary hemorrhage should it occur; to combat sepsis, if need be; to administer proper nourishment, and to make the patient as comfortable as possible without interfering with her recovery. Ordinarily reaction from shock occurs without much assistance, wrapping the patient in warm blankets and surrounding her with hot water bags is all that is required. There can, however,

* Presented to the Section on Obstetrics and Diseases of Women, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

be no objection to giving 1/30 gr. of strychnin hypodermically. If the shock be more severe, normal salt solution is the best weapon with which to combat it, given per rectum, subcutaneously, or intravenously, as the urgency of the case may demand. Sulphate of spartein is of decided value as an immediate stimulant to the heart, while digitalin may be used for a more lasting effect. The physiologic action of alcohol is so nearly identical with that of ether and chloroform, that its utility is to be doubted when the system is saturated with one of these agents.

There are few surgeons of large experience, who have not one or more times found, after the patient has been put to bed, that their hemostasis is incomplete, and that it is necessary to reopen the abdomen and secure the bleeding vessel. Some one competent to do this should be within call for at least twelve hours after operation. No other treatment is to be thought of.

It is now generally recognized that the best means we have of averting or combating sepsis is free purgation. To produce this, probably most operators are in the habit of employing magnesium sulphate, or some other saline, doubtless because they have the property of abstracting water from the blood, thus causing absorption of free fluid from the peritoneal cavity—"draining the peritoneal cavity through the bowels," as it is often described. This effect is not so essential, in these days of painstaking work, when raw surfaces are covered and great care is taken to stop all bleeding, as it was formerly. But if it is desirable, it is better to first secure a movement of the bowels with some other agent, and administer salines afterward. The objections to the use of salines are that they act almost entirely by increasing secretion, stimulating peristalsis but slightly; that if they are not effective in a few hours, they will not act at all; that they can not act when the system is very deficient in fluids; that they produce dilatation of the intestines, and that their unpleasant taste frequently produces nausea from vomiting. The indication is for a purgative that acts chiefly by increasing peristalsis, thus urging flatus onward and preventing dilatation. I have experimented with numerous purgatives and combinations of purgatives, and have concluded that calomel is the most generally satisfactory. I usually give 5 grains, by itself, or with sugar of milk, dropped dry on the tongue about twenty hours after the operation. Four hours later, if there is no indication of peristalsis having been excited, the dose is repeated. This is a better way than to give it in divided doses, which, while they are not so apt to nauseate, are not so effective as a purgative, and are more apt to produce salivation. Two hours after the second dose of calomel, the administration of the solution of citrate of magnesium is begun, 2 or 3 ounces being given every hour until the bowels move or the stomach rejects it.

If there has not been much nausea, instead of the second dose of calomel a capsule of 5 grains of compound extract of colocynth is frequently given. This very efficient preparation was one of the purgatives with which I experimented most persistently. When it was retained its action was ideal, but unfortunately I found that the stomach rejected it in about 50 per cent. of the cases. Where the colocynth is given instead of the calomel, the magnesium is seldom required. The colocynth may be repeated as often as is necessary. An enema of soap-suds is usually given when the patient feels that her bowels are about to move.

If there is vomiting and distension of the abdomen, calomel is the only purgative given. If a dose of it is

vomited, it is immediately followed by another. The stomach is kept absolutely empty of everything else. Persistent efforts are made to move the bowels with rectal injections every four to six hours. I have always found the Davidson more satisfactory for this purpose than the fountain syringe. I have seldom been able to pass the rectal tube above the sigmoid flexure, and when my assistants have thought they have done so, I have usually been able, with my finger in the vagina, to demonstrate that it is coiled on itself in the lower bowel.

Little benefit is to be derived from leaving a tube in the rectum for the escape of gas. It is not the splanter that retains the gas; on the contrary, it is so high up that the tube seldom reaches it. Where relief from it is apparent, it is because peristalsis has already been started, and the relief would come a little later when the bowels move, without its assistance. Were this not true the escape of gas would be only from one loop of intestine, as it is when the bowel is punctured for the escape of gas in operating for obstruction. The tube renders the rectum intolerant, and prevents the retention of the large injections, which are the last means we have of securing a movement. When the purgatives have failed to act in forty-eight hours, and the rectum has become intolerant, the patient's condition is truly alarming. Under these circumstances every operator must have wished for a purgative that would act when injected subcutaneously, with the same certainty that apomorphin acts as an emetic when used in this way. But the pharmacologists have not yet supplied us with such an agent. The physiologic action of physostigmin, causing contraction of involuntary muscular fibers, especially contracting the intestines and causing increased secretion of various glands, would suggest its use for this purpose. And the fact that it is employed with so much success by the veterinarian in horse colic, where overdistension of the bowels is the alarming symptom, would lead us to hope for results from it. I have employed it in a few cases, but not in a sufficient number to arrive at any conclusions as to its usefulness or the proper dosage. One to two grains is the ordinary dose given a horse, so it would probably require 1/20 to 1/10 gr. for a human being, though text-books place it variously from 1/12 to 1/200 gr., some stating that the maximum dose is 1/60 gr. In experimenting with it I have been very cautious, and I believe I have not used a sufficiently large dose.

If the bowels have not moved within forty-eight hours after the commencement of the administration of purgatives, it is best to desist from all efforts to secure this result, and to devote one's energies to sustaining the patient. Oftentimes we will find that stimulants will accomplish what purgatives have failed to do. This would seem to indicate that the overdistension and paralysis of the bowels is caused by some toxic agent occurring in sepsis acting on the nervous centers in the spinal cord.

Keith and others recommended quinin by the rectum as a stimulant to the nervous system under these conditions, but in my experience full doses of strychnin hypodermically are much more efficient. The rectum should be reserved for nutrient enemata. Champagne may be tried by the mouth. If it is retained for even a very short time, enough is absorbed to produce some stimulation. When the evidences of peritonitis are unmistakable, the advisability of reopening the abdomen and flushing the peritoneal cavity with salt water is always to be considered. But usually when one can be sure that he has peritonitis to deal with, it is too late

for even this to save the patient's life, enough poison having already been absorbed to prove fatal. The immediate, though usually short-lived improvement, following its use, is, nevertheless, sufficient to justify one in resorting to it in all desperate cases. It should be done without an anesthetic, or if one is used the stomach should first be washed out. By neglecting this precaution I one time had a patient drowned in the fluid her stomach contained.

Unless the patient is unusually weak, and in need of it, all nourishment should be withheld until the bowels have moved. If any is given it should be as hot as can be swallowed. It is more stimulating, more readily absorbed, less apt to produce gaseous distension. It should be left to the patient as to whether it shall be milk and lime-water or some meat broth. Food that is distasteful is much more apt to be rejected by an irritable stomach. For a day or two after the first movement of the bowels only liquid food in small quantities can be allowed, but the quantity and variety may be rapidly increased, and at the end of the first week her diet may usually be quite generous.

The pain suffered by patients after celiotomy varies from slight discomfort to that which is excruciating and unbearable. It is most severe in those cases of salpingo-oophorectomy where, on account of interstitial salpingitis, the stumps ligated are thick and hard to strangulate. Hysterectomies and ovariectomies for large cysts are followed by much less pain. It was formerly the custom to relieve this pain with morphin, but when the necessity for early and free purgation was recognized it was seen that the use of this drug was contraindicated. Morphin not only constipates the bowels and checks elimination in every way, but also nearly always produces more or less nausea, rendering the administration of purgatives more difficult.

I formerly adopted the usual practice of ordering that all morphin be withheld, gave my patient the not very comforting assurance that after twenty-four hours her suffering would be much less, and made my visits as few and short as possible, that I might not yield to her entreaties for relief. When at the end of twenty-four hours I observed how haggard and worn those patients were who had suffered severely, I always felt sure that had I been able to relieve their pain without producing nausea and checking elimination, they would have been in far better condition to battle against sepsis. To meet this indication I adopted the use of codein phosphate and chloral hydrate by the rectum. At both hospitals at which I work it has been a standing order for three years that if the patient suffers she shall be given such an enema; 3 grains of the codein and 30 of the chloral is a full dose for a robust woman. It may be repeated every four or six hours, if necessary. A second dose is not infrequently given, but rarely a third. The rectum absorbs fluid so readily after celiotomy that relief is surprisingly prompt. Lauder Brunton has pointed out the fact that ovarian pain may cause constipation, which is relieved by small doses of opium, and it seems probable that relieving the pain by these drugs, which are not markedly constipating in their action, may facilitate rather than retard peristalsis. At any rate my experience proves that the constipating effect, if there be any, is so slight that it may be practically disregarded.

If it is especially desirable for any reason to prevent vomiting, the enema may be given before the patient entirely recovers from the anesthetic; otherwise I have thought it advisable to wait an hour or two to give the

stomach a chance to empty itself of the secretions which have been pouring into it during anesthesia.

Next to pain, the symptom that patients complain most of is thirst. If there be any fluid in the peritoneal cavity, to be absorbed, it is advised not to relieve it. It is a question whether the good to be obtained by this treatment is not counterbalanced by the general depression caused by lack of circulating fluid, and the consequent inactivity of the kidneys. I am satisfied that the withholding of fluids may be overdone. It seems rational to believe that the benefits derived from the postural drainage of Clark are more from the stimulating effect of the salt water used, than from the carrying of the infectious material to a new and healthy part of the peritoneal cavity for absorption, for Nature, in her efforts to fight infection, pursues exactly the opposite course, limiting it to as small an area as possible, by every means at her command. The best way to supply the system with the required fluid is by rectal injection of normal salt solution, a half pint being given every two to six hours. A half ounce of very hot water by the mouth may be allowed every hour after the first four. It has a tendency to settle the stomach, and it pleases the patient to get something. The nurse should frequently wipe out the mouth with a moist cloth, but the patient can not be trusted to rinse it out for herself.

In conclusion, any surgeon who does a capital operation owes it to his patient, his profession, and himself, to see that everything possible is done to secure recovery. For this reason, only when it is absolutely unavoidable, should an abdominal section be done in the country and the after-treatment left to a practitioner inexperienced in this work.

THE STUDY AND TEACHING OF OBSTETRICS.*

BY ELIZA H. ROOT, M.D.

Professor of Obstetrics, Northwestern University, Woman's Medical School; Senior Obstetrician to Wesley Hospital.
CHICAGO.

Child-bearing, though a physiologic function, is not without danger to both mother and child. Danger arises from two distinct sources. The first is external to the mother, and depends on her environment, in which her safety is menaced by infections that may occur during gestation, during labor, and during the period of lying-in. The second source of danger is internal in nature. It belongs within the woman herself, growing out of conditions that make the passage of the passenger unsafe or impossible. It finds expression in faulty physical development for which our modern methods of living are largely responsible; in faulty development of the parts concerned in parturition, and in accidents of mechanism.

The treatment of the first source of danger must be prophylactic and remedial, while that of the second must be mechanical, and includes a wide range of surgery. If a perfect prophylaxis is observed, remedial measures will fall into disuse, while a thorough knowledge of, and training in, methods for the second will contribute greatly to the safety of child-bearing. To make obstetrics a stepping-stone to some other branch of surgery is fatal to skillful obstetrics.

In the last ten or fifteen years obstetrics, in our country, has had a marked uplifting. Our best schools of medicine are giving the subject more attention than ever

*Presented to the Section on Obstetrics and Diseases of Women, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1896.

before. Students are asking for more thorough work and increased facilities for practical training. In schools requiring a four years' course the subject may be profitably graded, to consist of a junior and a senior course in obstetrics. For the junior course only normal obstetrics should be taught. This insures a reasonable amount of time for drill in the fundamental principles of the subject, and lays the foundation for careful conscientious practice.

Before entering further on methods, a few words regarding qualifications essential in the teacher may not be out of place. First, the teacher must be thoroughly in love with his chosen subject and with the work of teaching. He must be a student himself, coming in close and sympathetic touch with his pupils; he must always be the interested, enthusiastic student-teacher, carrying his students with him as willing followers. In his practice of obstetrics, each case, though he may have seen hundreds of similar ones, must be studied with as undivided and careful attention as his cases in early practice. Each phase and feature, carefully observed, keeps freshly filled the store-house of experience from which he is to draw daily supplies for his pupils, and from which he must draw with a generous, unselfish mind and heart. Time is saved to teacher and student by the use of a good text-book. To instill life and interest into the recitations, the teacher amplifies the lesson out of his own experience and by demonstrations on material from the working museum.

In the first semester the student should become familiar with the obstetric pelvis, static and dynamic. Its axes and diameters, together with the diameters of the fetal head, and its conformations should be as familiar to him as the alphabet, for this knowledge forms the foundation on which he must build all future knowledge of obstetrics. The diameters of the pelvis, and its inclinations are best taught by comparisons made by means of the pelvimeter. The student should make the measurements, first on the dry pelvis, and then on the pelvis of the living subject. He learns to use the pelvimeter, of its advantages and its disadvantages, and obtains a comprehensive idea of differences in the pelvis compatible and also incompatible with safe and normal labor. He should systematically learn the steps taken in abdominal palpation, and should be firmly impressed with the importance of this means of reaching a diagnosis, making the vaginal route a secondary step, not in importance but in order. Before entering on the study of obstetrics, work in embryology prepares the student to readily distinguish the clinical features, diagnostic of the age of gestation at which the embryo and fetus was expelled or perished *in utero*, and he reaches this end by means of his text-book and demonstrations made on preserved and fresh specimens. The subject of diagnosis should enter into the course as early as possible, and be made a marked feature throughout the entire two years of instruction.

At the end of the first semester he is, or should be, ready to begin the work of the second, which includes the normal mechanism, the management and physiologic phenomena of normal labor, together with the management of the lying-in period, and the care of the newborn. He also learns the prophylactic treatment of dangers arising external to the patient, which includes, as a chief feature, the technic of surgical asepsis and antiseptics in its every detail. At this time, drill on the manikin prepares the student to take charge of normal cases, always under the personal supervision of an able and painstaking clinical demonstrator. At the bedside

he now learns to apply and verify what he has learned from his text-book, and his teacher in the classroom and the clinic.

The drill on the manikin with the normal fetus, or with the dummy, is of supreme importance to the student. He sees and understands for himself the wonder-inspiring process of accommodation of the fetal diameters to the pelvic dimensions. He begins to accept as demonstrable truth what before seemed only half truth, and he is willing to again and again repeat his assigned task, for he is beginning to love the work, and to desire its mastery.

After the student has thoroughly mastered the normal mechanism of first position vertex, he may begin to study departures from this first and normal standard: the second position in head with its anterior and posterior positions, to be followed by other varieties of head presentations in which delivery can be spontaneous. Breech presentations are then studied in detail. During these different exercises on the manikin he should be taught the judicious use of the hands in aiding spontaneous delivery; such as aiding flexion when extension prevents progress; watching and aiding rotation forward in the second posterior position; aiding the delivery of the shoulders, and the different manual methods of delivering the after-coming head. While manual interference properly belongs to abnormal obstetrics, it impresses the details of mechanism on the student mind, and teaches the use of his hands. The student must not be passed too rapidly over the exercises on the manikin, or he becomes confused, and fails to divine important steps one from another. Mastering each step as he advances, he becomes more and more interested in the work, and studies his subject for itself, and not for the forthcoming examination, which he should pass with credit at the end of the year.

The second or senior year should be devoted to pathologic obstetrics. In order to place the student on an independent footing, for which he has been prepared in the junior year, it seems best to drop the use of any particular text-book, and to assign his work by topics. Having his topic, he is free to consult any text-book or books available. He not only by this means gains a comprehensive idea of his subject, but he learns how to use his text-books. I have found it a profitable exercise to assign a particular topic for the whole class, both in the junior and senior courses, for investigation, requiring each student to write an essay on the subject assigned, giving the literature consulted. It is surprising the amount of research an enthusiastic, intelligent student will accomplish by adopting this method.

The surgery of the puerperium, the pathology of pregnancy and of the puerperium must receive due attention. While operative obstetrics is made a prominent feature of this year's work, especial attention should be given to the obstetric forceps. No student should be allowed to leave his school without a safe knowledge of this instrument, which he will gain only by the study of it as a mechanical appliance, and by thorough drill in its use on the manikin. The teacher should carefully guard the student against forming bad and careless habits in the execution of a forceps operation. How and when to make traction should be strongly emphasized and proper movements insisted on. Whenever an error is committed, the student should be required to correct it then and there, and be made to see his error, and to understand its correction. Beginning with the low operation he learns coolness, deliberation and the methods of making proper traction. From the low, he is advanced to the

medium, then to the high operation, learning in each case the meaning of "axis traction." It is unfortunate for the student's comprehension that the "axis traction" is so universally used to mean high operations or inlet operations. All traction made by forceps must be axis traction, whether their application be made at the pelvic brim, the pelvic cavity or at the pelvic outlet. Hasty, jerky and impulsive movements made by the student when using the forceps should bring from his teacher words of correction. A lack of knowledge of, and experience in, the important matter of applying the forceps, characterizes the work of the young, and sometimes the older practitioner as clumsy and dangerous.

Practical work in obstetrics should be required of each student before graduation, and to enable him to apply what he has learned from his text-book and his teacher he should be required to keep a systematic record of each case attended. In this way he can learn what can not be taught so well in the classroom; the characteristics of true and effective labor pains and of anomalous and inefficient pains; the indications for the application of forceps and the contraindications for their application. The record sheet should make a part of the year's course, and of the final examination, as an evidence of his fitness to practice obstetrics. The requirement of record keeping impresses the student with the importance of supervising each case that may come to him for care. It helps him to form systematic habits of thinking and of making observations that must contribute to a successful practice, and to the science of obstetrics. In the pathologic laboratory, room should be made for the study of disease and unhealthy conditions so frequently met with in pregnant and lying-in woman. In order to make his work useful and with a given purpose, clinical reports of cases, including pathologic studies made in the laboratory, may be required of the student.

Thus equipped at graduation, he is in a condition to make a post-graduate course in some good maternity, of value to him for further preparation for the practice of obstetrics.

EARLY OVARIOTOMY: ITS PRACTICAL NECESSITY.*

BY MARCUS ROSENWASSER, M.D.
CLEVELAND, OHIO.

The time has long gone by when the growth of ovarian tumors was watched until they attained enormous proportions and were finally tapped to prolong the life of the doomed victim. Such tumors are almost extinct. We very rarely see them. The time has also passed, when ovariotomy was delayed until every other means, including repeated tapplings, had exhausted the patient's strength and the operation was then performed as a last resort. The comparative safety of the operation, the inevitable growth of the tumor if left alone, and the possible later complications are facts so well known to physician and layman, that consent is readily obtained for early removal.

As is but too frequently the case with uterine carcinoma and with unruptured tubal pregnancy, the early stage of ovarian cystoma may likewise pass without subjective symptoms; the physician is not consulted until the patient herself notices some enlargement, or until it is discovered by accident. The rapidity of growth of such tumors can only be estimated. We are obliged to date them from the time of observation. At this time, un-

less malignant, they are considered harmless; the advice is accordingly given to put off their removal until they interfere with health and comfort. The family physician who gives such counsel hardly realizes what mischief his advice may ultimately cause. This lack of up-to-date information is not surprising when we recall the proportionately small number of cases that pass through the hands of any one individual. My motive in writing this paper is to bring more prominently before the profession the many accidents and complications that happen with small, as well as with recent growths of this kind. Note that neither the size, nor the age of a tumor is a criterion of the possible immediate or remote dangers from its presence.

A few typical cases have been selected to exemplify the various complications that may arise even in the early stage of ovarian cystoma, or that may result from delay. A number of these cases have heretofore been published in detail, and many others have from time to time been reported and the specimens exhibited to the local society. Only a brief synopsis will therefore be presented at this time to emphasize the special points to which attention is called.

It would prolong this paper beyond its scope to dwell on the subject of malignant cystoma, because if recognized early, we are all agreed that they should be removed at once.

Papillomatous tumors are classified as semi-malignant. Whether malignant or benign, removal before rupture, or before penetration of the cyst wall is likely to be curative. On the other hand, recurrence is the rule when the contents have escaped and have become disseminated. Both visceral and parietal peritoneum become secondarily infected and patients survive but a limited period. Absorption of the papillary excrescences and consequent complete recovery are the exceptions. A differential diagnosis between benign cysts and unruptured papillomatous cysts can not be made. The latter are liable to burst at any time and thus to contaminate the abdominal cavity. The only safe course lies in the removal of the tumor.

CASE 1.—Referred by Dr. A. F. Meyer. Mrs. S., aged 28, mother of three children, first noticed enlargement two weeks after birth of the last child, nine months ago, when she was larger than at term. She has been tapped three times since, is anemic and much emaciated. The diagnosis was ovarian cystoma, probably malignant. At the operation, Dec. 12, 1890, the broad ligament and peritoneum were fused by inflammatory adhesions. Papillary outcrop had penetrated the cyst wall and proliferated freely on the surface of the peritoneum; tumor removed; warty tufts not removable. Recovery followed with gain of twenty-five pounds in weight, but death from recurrence two years later.

CASE 2.—Referred by Dr. J. R. Smith. Mrs. S., aged 31, mother of two children, noticed a rapid increase in size of the abdomen the past four months, and was tapped three weeks ago. She is anemic and emaciated. The abdomen was filled with free fluid, in which a large nodular tumor was felt floating. The diagnosis was papillomatous cystoma. Operation, June 30, 1891, revealed a large quantity of ascitic fluid; multilocular tumor with extensive omental and sigmoid adhesions; peritoneum and pelvic floor studded with papillomatous growths. The tumors were removed; growths remained. Recovery followed, but death from recurrence ten months after operation.

CASE 3.—Referred by Dr. M. Abl. Mrs. C., aged 31,

* Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

¹ Cleveland Med. Gaz., September, 1890.

mother of one child 12 years old, has been sick with pain in the left inguinal region during the past three months. A tumor was found by the attendant three weeks ago. One week ago she was taken with severe pain in the lower abdomen; in bed since; temperature ranging from 100 to 101 degrees; "flowing" past two weeks; mass in left pelvis, size of orange; rectovaginal pouch bulged downward; cervix compressed against symphysis. A diagnosis of suspected ruptured tubal pregnancy was made and operation, Aug. 26, 1895, showed general intestinal adhesions; peritoneum deeply injected; large quantity of serum in the pelvis. In the midst of the adherent intestinal coils was an irregular, nodular, resilient tumor from the upper part of which cropped out papillary growths which spread over the surface of the intestines. Evidently the cyst had recently ruptured and caused the acute peritonitis. The cyst was removed; weight eight ounces. Recovery followed and the patient is still living, but with recurrence; abdomen enlarged, filled with nodular masses.

CASE 4.—Referred by Dr. A. F. Spurney, Mrs. T., aged 32, mother of three children, has had gradual growth of the abdomen the past year, with rapid increase the past three months. It is now the size of pregnancy at term. A diagnosis of ovarian cystoma was made. Operation was done Oct. 5, 1897, and the tumor found fixed above by dense, spiderweb adhesions, below was an immovable intraligamentous, papillomatous cyst; both appendages diseased; cyst dips deep down into base of the broad ligament, where there are papillomatous patches; impossible to form pedicle. Removal of both tumors and uterus by suprapubic hysterectomy was followed by recovery, but recurrence within six months, the patient still living.

CASE 5.—Referred by Dr. N. S. Everhard, Wadsworth, Ohio. Mrs. W., aged 52, passing through menopause, has had three children. She first noticed a movable bunch in the left side fifteen months ago, with rapid increase the past two or three months. Temperature ranges from 99.5 to 100 degrees; abdomen tender. The diagnosis was ovarian cystoma, and at operation, Oct. 23, 1897, the peritoneum and tumor walls were deeply injected; free, dirty fluid in the abdomen; numerous, recent intestinal adhesions; their separation causing copious oozing, the control of which required clamping of both ovarians. The contents of the tumor was the same as the fluid in the cavity; cyst papillomatous. One clamp was left on the broad ligament to ensure safety from hemorrhage. Recovery followed with recurrence within nine months. She is still living, but failing.

In the following two cases the cysts were intact when operation took place; there has been no recurrence to the present time.

CASE 6.—Referred by Dr. A. Steiner. Mrs. M., aged 57 years, was never pregnant. Her menopause was seventeen years ago. She first noticed enlargement six months ago; no pain, only discomfort. She was tapped three months ago for ascites, a second tapping three weeks ago, when a movable solid tumor, the size of a fetal head, was discovered in the right side above the pelvic brim. She was much emaciated. The diagnosis was malignant ovarian tumor. At the operation, Dec. 13, 1894, ascitic fluid was evacuated. The tumor consisted of papillary growth so soft in texture that it broke in a number of places, allowing the contents to ooze back into the pelvis. Below the pedicle in the broad ligament were five or six indurated nodules which were not re-

moved. The patient has remained well the past four years, doing her own work.

CASE 7.—Mrs. H., aged 34, has had two abortions. She was curetted Oct. 20, 1896, for metrorrhagia; right ovary prolapsed, hard, not tender, size of walnut. Hemorrhage recurred in January, 1897, and after unsuccessful medical treatment she returned to be again curetted April 6, 1897; right ovary slightly increased in size. Early in July metrorrhagia recurred with rapid growth of the right ovary. By the middle of July the tumor reached midway between the pubes and umbilicus; distinct fluctuation. Diagnosis of ovarian cystoma was made, and operation, July 19, 1897, showed some free fluid in the abdomen; cyst the size of a child's head; contents bloody, flesh water-like fluid and papillomatous growth; thin two-inch pedicle. One year after the operation she had her first living child, now five months old.

These cases suffice to demonstrate the lesson I wish to draw. The tumors begin slowly, but after a time take on rapid growth and are liable to rupture, or the papillomata penetrate the cyst wall, and in either event the cyst contents infect the peritoneum. Not only does this lead to the formation of inflammatory adhesion, but it lays the foundation for an early recurrence. It is often impossible to differentiate between the character of cysts before operation. It is equally impossible to estimate the resisting power of the cyst wall. A cyst no larger than the fist is just as liable to burst as is one that fills the abdomen.

Even cysts that are not papillomatous may rupture before attaining a very large size, and lead to peritonitis unless the fluid contained within is sterile serum. In the latter event, whether the cyst ruptured or be tapped, patients may exceptionally recover and be cured without operation.

CASE 8.—I have no notes on this case. The facts in brief are these: I was asked by my friend, Dr. Cotton, to see Mrs. B., an elderly woman, who was known to have an abdominal tumor reaching a little above the umbilicus. At the time of the consultation she had been suffering from peritonitis for about a week. She was feverish, had marked abdominal tenderness; there was free fluid in the abdomen; the tumor itself could not be distinctly outlined. I advised awaiting the subsidence of the inflammation, and subsequent removal of the cyst. I did not see the patient again, but was informed by the Doctor that with the abatement of the acute symptoms the enlargement diminished until the tumor entirely disappeared.

CASE 9.—Mrs. V., aged 20, mother of one child, five months old, after confinement noticed she was much larger than other women under similar circumstances. She continued to grow until she was nearly as large as at term. The tumor was movable and gave distinct fluctuation. On Aug. 17, 1875, I tapped the tumor midway between the pubes and umbilicus, and removed about one gallon of thin, reddish fluid. The abdomen never refilled. The patient had a number of children afterward, and remained in good health. I would not dare treat a like tumor in like manner today.

CASE 10.—Referred by Dr. J. Goldfinger. Miss K., aged 20, after suffering "cramps" in the lower abdomen for two days, called at the doctor's office for relief, but refused examination. She was ordered to go to bed, but knew better, and was up and down for two weeks, when she finally allowed herself to be persuaded to enter the hospital. During the prevalence of peritonitis, together with a tender mass in the right iliac fossa, she was treated for appendicitis. After subsidence of the acute

symptoms, the diagnosis of ruptured ovarian cyst was made. The cyst reached to the umbilicus. Operation, Sept. 29, 1898, revealed right ovarian cyst; more or less recent adhesions in the right iliac fossa, fused with an ugly exudate on the cyst wall resembling a phagedenic ulcer of the size of a silver dollar. This proved to be the remnant of a small secondary cyst which had ruptured and was the original cause of the peritonitis; cyst contents, three pints of clear, viscid fluid. Recovery followed. Had the patient been aware of the existence of a growth, its removal before rupture would have been a very simple thing.

Even without rupture or trauma, cysts may become adherent or infected by intercurrent disease, especially of the tubes or of the appendix.

CASE 11.—Referred by Dr. E. M. Davidson. Mrs. A., aged 25, was never pregnant; six months ago Dr. D. found a tumor in the pelvis. The tumor caused no trouble until recently. The diagnosis was parovarian cyst. Operation, March 16, 1893, revealed right unilocular cyst with clear fluid contents; a knuckle of intestine so firmly adherent that the gut was opened while liberating the adhesion; immediate closure of intestinal laceration; left pus-tube burst during enucleation; intestinal adhesions to tube. Despite difficulties and complications, the patient made good recovery.

CASE 12.—Referred by Dr. T. A. Weed. Mrs. W., aged 20, mother of one child, had symptoms resembling tubal pregnancy. Under anesthesia, before curetting, a mass the size of an orange was found in the right pelvis; no improvement after curetting. Laparotomy one week later, July 13, 1894, proved the mass to be a small ovarian cyst attached to the right pus tube; omental adhesions; left tube also contains pus. Recovery followed.

Cysts that have formed adhesions to contiguous viscera not only offer greater difficulties in their removal, but are more readily infected—on account of the diminished resistance of the partition wall to the passage of disease germs. This may lead to infection of the cyst contents, and suppuration. The removal of suppurating cysts is likely to be a difficult procedure, very often followed by serious complications, or resulting in death.

CASE 13.—Referred by Dr. F. S. Pomeroy of Chardon, Ohio. Miss E., aged 23, had been sick about four months, in bed six weeks, having chills and fever, with temperature varying from 100 to 103 degrees. Three weeks ago Dr. P. outlined a fluctuating tumor on the left, reaching to the umbilicus and dipping down into the pelvis. When seen, Aug. 31, 1894, she was a very sick woman: Pulse rapid and weak; temperature 102 degrees; no distinct tumor wall, but fluctuation could be felt over the entire abdomen. Diagnosis of sepsis from suppurating cyst, or ruptured cyst, was made. Operation September 1, revealed the cyst wall acutely inflamed; contents offensive and grumous; intestinal adhesions; patient in shock. She died fifteen hours after operation, from post-operative hemorrhage.

CASE 14.—Miss J., aged 20, five years ago had abdominal enlargement, with much pain. The enlargement gradually disappeared. After this she always had pain in the left hypogastrium, on exertion, or sudden jar. July 11, 1895, she was taken with severe pain in the left side, with pulse 116, and temperature 103 degrees. Rectal examination showed a globular, resilient tumor filling the left pelvis. Peritonitis lasted two weeks; August 3, sudden pain and collapse; reaction with chills, fever and sweats. A diagnosis of probable suppurating cyst was made. Explorative operation, August 17, re-

vealed universal adhesion of the omentum and intestines. Careful separation opened into the pus cavity. Continuation of exploration was not warranted; drain. Discharge of pus continued for three weeks, temperature ranging from 99 to 103 degrees; streptococci in pus. Operation was made for removal of tumor, September 6, the incision from the fistula; small intestine injured during separation of interminable adhesions. On enucleation the tumor proved to be an ovarian cyst the size of a small cocoon, leaking pus. She recovered from the second operation, but succumbed in a later attempt to close the fistula resulting from lacerated intestine.

In several of the above cases the tumors were undoubtedly present during pregnancy, though not discovered until after delivery. The danger of this complication is so well appreciated that removal of the tumor during pregnancy at any period is the established rule. Tapping may temporarily accomplish the same result, though it is very unsafe practice.

CASE 15.²—Referred by Dr. A. Peskind. Mrs. K., aged 21, had one child. When she was four months pregnant, Dr. P. found a tumor occupying the right side of the pelvis. Later she had spells of localized peritonitis. At eight months her attendant tapped to relieve distension, evacuating a gallon of turbid fluid. Two days later premature labor occurred, the child living but a few hours. The tumor refilled. Diagnosis of intraligamentary cyst was made and operation Jan. 5, 1890, six weeks after labor, showed monocyst of right broad ligament, containing puriform fluid. Recovery followed.

CASE 16.—Mrs. C., aged 28, pregnant two months, had felt a small hard movable body above the pubes seven months before, and has felt it occasionally since. Six days ago she was taken suddenly with violent vomiting, which still continues. A hard, irregular, nodular, movable tumor present in the anterior portion of the left pelvis; enlarged uterus to the right. Diagnosis: torsion of pedicle of solid ovarian tumor, with probable pregnancy. Operation, Jan. 12, 1898; fibroid tumor, size of large apple twisted two and one-half times about its thin, flat pedicle, growing from broad ligament just above the enlarged cystic ovary. The tumor removed, recovery followed and pregnancy continued to term, the mother and child doing well.

Torsion of the pedicle may convert an innocent growth into one of very serious import, even though pregnancy does not exist.

CASE 17.³—Referred by Dr. N. Weidental. Mrs. S., aged 39, mother of four children, was known to have a smooth, pear-shaped, freely movable tumor in the hypogastrium, reaching to the umbilicus. Three months ago she was seized with a sharp, lancing as well as labor-like pain from the left lumbar region to the groin. This pain has never ceased; it has returned at intervals of three to eight days. On September 26 she was seen in consultation and had been in bed for two days; pains more constant and severe; tumor outlined and movable. On September 28 she went into collapse; intense pain, vomiting, abdomen distended, tender; tumor indistinct; bowels obstructed. Diagnosis: Peritonitis due to ruptured cyst, or a twisted pedicle. At operation, Sept. 29, 1892, an intensely congested, black tumor presented. It was twisted three times about its short, thin pedicle; hematoma of tube and cyst wall. Circulation had been completely cut off; peritoneum deeply injected, but as yet no serum or lymph formed; tumor removed. Recovery followed.

² Ibid. ³ Ibid. November, 1892.

Dermoid cysts are especially prone to infection, owing to the heterogeneous character of their contents. The adhesions formed between these cysts and the hollow viscera, as the bladder or intestines, may not only cause suppurative of the cyst, but a perforation of the adhesion may lead to chronic septicemia. An interchange of contents takes place; feces, urine and products of decomposition enter the cyst, and bones, teeth, hair and other tissues belonging to the dermoid, pass into the viscera by process of ulceration, frequently leading to exhaustion and death. The dermoids I have met have fortunately been removed before infection, hence have caused no trouble.

It seems to me unwise to further multiply instances lest my time and your patience be exhausted. Sufficient facts have been cited from my own limited experience to call attention to the frequent accidents, misfortunes and complications occurring during the development of ovarian growths. The experience of others, much larger and more varied, only serves to corroborate the conclusions to be drawn.

1. Uncomplicated ovariectomy, in proper hands, is a simple operation with scarcely any risk.

2. Malignancy, trauma, torsion of pedicle, infection, suppuration, adhesions to viscera, and pregnancy materially increase the difficulties and risks of the operation.

3. To avoid complications liable to occur at any time, the removal of ovarian growth should follow the diagnosis without unnecessary delay.

Let the terse axiom, formulated by Dr. Howard Kelly, henceforth be the recognized rule of procedure: "*From a practical standpoint all ovarian tumors must be considered as malignant until removed and proved otherwise.*"

THE NEUROTIC'S DIET.*

BY HENRY C. EYMAN, M.D.
CLEVELAND, OHIO.

Before entering the special domain of the neurotic and discussing his proper diet, it will be necessary to devote a few minutes to the general subject of diet and the value of foods. The value of foods may be considered as three-fold: 1, the production of energy; 2, the repair of tissue; 3, the increase of adipose tissue to serve as a protection and covering in the body.

There are at least thirteen chemical elements which enter into the composition of the body, but only four which are found so abundantly as to indicate that they are indispensable to life, viz., carbon, oxygen, nitrogen and hydrogen. Now, foods which contain these elements are necessary for the three-fold use above mentioned. We are taught that nutrition of the body involves several distinct processes:

1, the secretion of digestive fluids and their action upon food in the alimentary canal; 2, the absorption of the ingredients of the food, when digested, into the blood and lymphatic vessels; 3, the assimilation of the absorbed nutritious products by the tissues; 4, the elimination of waste material.

There may be an abundance of nutritious food, and yet with any of these processes in deranged working order, malnutrition will at best be all that can be accomplished.

Baron von Leibig was the first to suggest a scientific division of foods. He grouped all foods into two classes—nitrogenous and non-nitrogenous. The former he

claimed to be "tissue-builders" and the latter "force-producers." Under the former he classed fish, flesh, fowl, milk and eggs; under the latter, vegetables, fruits, cereals, starches, sugars, gums, fats and oils. This division had many vulnerable points, but it served its purpose and is still used in speaking of foods in a general way.

Some vegetables contain nitrogen, and animal food is not strictly nitrogenous, as it contains fat and glycogen, therefore it is not practical to confine ourselves to either an absolutely nitrogenous diet or to a non-nitrogenous one, but for general purposes this classification answers very well. There are other divisions and classifications, notably that of Prout, who groups foods as aqueous, saccharine, oleaginous and albuminous. But much can be found to criticize in this division, because it fails to provide for salines, starches and gelatinous substances. Thompson, in his work on practical dietetics, classifies foods as follows: 1, water; 2, salts; 3, proteins—chiefly albumin and allied gelatin; 4, starches; 5, sugars; 6, fats and oils. And, indeed, to be exact one should not stop here, because we have oxygen, hydrogen and other elements which can be used as foods entirely independent of either of the groups above mentioned.

It will sufficiently answer the purpose of this paper to accept the most simple classification, as we desire to discuss foods from the standpoint of value. First, then, are the energy-producers. Here is a call for foods which will store up energy in a latent form and subsequently allow liberation in the form of heat and motion. "Force is the manifestation of energy," therefore that which stores up energy must be subsequently manifested as force. The foods which produce this in the greatest degree are sugar and starch. There are numerous tables given, showing the comparative values of the different articles of food, and the relative amount of the nitrogenous and non-nitrogenous matters. These can be found in almost any text-book. Sugars may be defined as crystallizable carbohydrates in which oxygen and hydrogen exist in proportions to form water. There are many varieties of which those commonly contained in food or used as an adjunct to diet are cane sugar, saccharose, grape sugar or glucose and sugar of milk or lactose. Then we have beet sugar, maple sugar and sugar from other vegetable growths. In addition to these all starches must be converted into sugar before they can be assimilated.

By some it is claimed that sugars are merely force-producers, and by others that they are fattening as well. It is probable that their action in the production of adipose is merely because they spare the consumption of albumin and fat, as stated by Bauer, which are then converted into tissue fat. It is, therefore, pretty well established that the production of energy depends entirely upon the sugars and the starches, yet if the repair of the tissues be not looked after, this energy would soon consume the body. It is not our purpose to go into a study of the various kinds of energy-producers, nor whence they are obtained, as that would be manifestly impossible in a short paper. The second of these three-fold values—the repair of the tissues—will be found in the nitrogenous foods, chief among which are the various kinds of meats, milk and eggs. Meats have been used as foods for neuropathic individuals for many hundreds of years, and are still regarded as the *sine qua non* in certain forms of nervous diseases, and in persons suffering from neurasthenia. It is obvious, if a patient is exhausted and his tissues improperly functioning from

*Presented to the Section on Physiology and Dietetics, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

a lack of proper nourishment, that the tissue-repairers are indicated. In these cases a meat diet often works wonders. And I wish to emphasize the fact that this exhaustion and subnormal vitality is not always accompanied by any great reduction in adipose tissue. In fact, the patients often look to be in good bodily health, but as a matter of fact the muscles are atonic and the whole system is incapable of prolonged resistance. On the other hand there are cases of mental alienation in which the meat diet aggravates the psychosis.

Clouston claims that a large proportion of cases of adolescent insanity are found to have been flesh-eaters. They have a craving for such foods, and have eaten but little else. He says it is such boys who form the habit of masturbation, which when acquired, produces such a fascination and a craving that it may ruin the bodily and mental powers. Such patients should be given a diet of milk, fish and farinaceous foods. The greatest reliance is to be placed in milk. Alcohol should be prohibited in such cases. All patients who can assimilate it should have cod-liver oil. Hypophosphites and pepsin are excellent remedies, and in connection with the oil, serve as foods. Many patients take on fat rapidly under this treatment, and oftentimes lose in weight promptly should the diet be discontinued. A patient suffering from adolescent insanity should gain in weight if steady improvement is desired. Dr. Rutter, superintendent of the Hospital for Epileptics at Gallipolis, says that he can throw half his patients into fits in twenty-four hours by improperly administering a meat diet.

In speaking of the diet for young persons suffering from mania, Dr. Clouston says: "It should consist largely of milk and farinaceous diet for the young." "I lately saw a very excitable boy of 6 years, very thin, restless, not sleeping much, and of course very bright and quick for his age. I found he was getting animal food three times a day, and his guardians deplored the fact that he could not take milk. My advice was to starve him into taking it, to make him walk much, and keep him out, and give him when he came in, only bread and milk. Of course, it was disagreeable at first, but the boy soon acquired an appetite for such food, his bodily conformation largely changed, and he got fatter, less active, less nervous and slept far more." Children with this disposition are nearly always flesh-eaters, and I have sometimes found them fed on beefsteaks and port wine with strong beef-tea between meals.

There are some forms of neuroses in which an almost exclusive meat diet is absolutely essential. When the skin is dry and parched, and the nerves are desiccated, burned out, producing an irritability and motor restlessness not found in any other condition, then we should regard the meat diet and hot water as peculiarly indicated. I say hot water because cold water would surely derange the digestion and the system is so evidently in need of fluids. Therefore it is as necessary for the physician to diet his patients as individuals and not classes as it is to individualize in the administration of any drug.

Probably the most important manifestation of mental trouble is melancholia, because, as has been aptly said, "melancholia is the sanest kind of insanity," and because it is the most frequent manifestation and the one with which the general practitioner most often comes in contact; therefore we will consider the proper diet for melancholic patients. All those who have had the opportunity of observing the melancholic are cognizant of the fact that the patient is suffering from dyspepsia. He

refuses food; the breath is foul, the tongue is coated, and the bowels are constipated. It is probable, however, that all these symptoms of dyspepsia are the result and not the cause of the depressed nervous condition. Because of the disease of the nerve-centers, the tongue is coated with old dead epithelium, which for the same reason, is not thrown off; this causes the fetid breath and the dislike for food, and consequent starved condition of mind and body; and because of the general lowered tone the bowels become constipated. We should not attempt to relieve these conditions by treating symptoms only, but should direct our energies toward the relief of the general neurosis. We might be able to relieve the dyspepsia temporarily by the administration of drugs, but the relief would not be lasting; the condition which contributed to the primary dyspepsia would undoubtedly be a potent factor in its recurrence, therefore we must reach the seat of the disorder. A proper diet is our most powerful agent, and for these cases the following should be prescribed: Before getting out of bed a cup of hot water with a dash of brandy; breakfast, meat and eggs; lunch at eleven and two, consisting of beef-tea or cocoa, crackers, milk and fowl dinner at six, consisting of broiled fish, roast beef, green peas, asparagus and toast; at bed hour a light repast with a small quantity of malt liquor. I have known many patients to improve rapidly upon this, or a similar diet, and their dyspeptic symptoms disappeared with the improvement in the general tone. Your melancholy patient is always illy nourished, and nothing so retards improvement as lack of proper diet. How dependent these melancholic patients are upon food has often been proved. Some who have convalesced steadily and who are apparently almost recovered if they for some reason miss a meal, or even have it considerably postponed, have felt at once a return of the depression and delusions, which vanished again after the reception of foods.

Those connected with our large hospitals for the insane will bear witness that nearly all suicides occur about twilight in the morning.

As nearly all melancholics suffer from brain anemia the natural conclusion would be that the brain would be clearer at this hour than any other, and consequently there would be less inclination to suicide, therefore there must be some other reason for this almost universal exacerbation of depression. Because of the general malnutrition we have thought this great depression might be due to lack of food, and if a light lunch be served after midnight to these sleepless melancholics the period of exacerbation might be bridged. Acting upon this thought it has been our custom to administer milk or eggnog to the restless after midnight, and so far with gratifying results. The patient becomes quiet, restful and nearly always falls into a refreshing slumber, awakening in the morning in a more nearly normal state of mind. We have not given the thought sufficient experimentation however, to advocate it unreservedly, though we do believe there is a field of useful research in this direction. When a patient habitually awakens after three or four hours and can not go to sleep again, we always try a glass of milk and a few crackers, and nearly always secure for the patient from two to four hours of undisturbed rest. Clouston says: "If I were as sure of everything else in therapeutics as this, that fresh air and fattening diet are good for melancholic people, I should have saved myself many medical questionings."

Melancholic patients can not have too much fresh air, though they may have too much exercise. Pure oxygen

is as necessary to them as pure food, though the mistake should not be made of exhausting your patient by too much walking or other exercise. Should the weather be fine, the patient should be in the open air nearly all the time. Nothing else is so conducive to sleep as fresh air, or equals it as a hunger producer. Every possible care of the patient may count for naught if pure air can not be supplied. It is not considered possible to fatten a patient too soon or too rapidly, though great care will have to be taken not to overload the stomach and thus produce gastric and intestinal troubles.

Fatty foods, milk, ham and cod-liver oil, maltine, eggs, farinaeous foods, easily digested animal food, such as beefsteak fish and fowl, can all be used to advantage in feeding melancholics. I suppose milk is more universally recommended than any other one article of diet, and by some authors regarded as a sheet anchor. Clouston speaks of having given as high as sixteen tumbler a day with surprising benefit. We should, however, constantly keep in view the fact that neurotic people are usually lean people, and that fat and nervousness are antagonists, particularly when the nervousness is manifested by melancholia. Therefore, whenever one has succeeded in increasing the adipose in a patient an amelioration of the melancholic symptoms can almost always be expected. "Laugh and grow fat" is an old saw, but from a medical standpoint it might be better said by "grow fat and laugh." Mrs. Carlyle, after an attack of "nervousness," wrote: "Oh! thank God for the precious layer of impassivity which that stone weight of flesh has put on my nerves."

As I have previously said, there are times when stimulants are useful. Ale and porter work wonders on lean, anorexic melancholics, by their fattening and appetizing qualities. A favorite prescription is a half glass of Burgundy and the whites of two eggs every three hours. The stronger stimulants are seldom used, except in cases of extreme exhaustion. The writer has had excellent results, however, with whisky and hot water, in cases of insomnia, though some authors claim to have equally as good results from the hot water alone taken at bedtime. As soon as the patient has notably gained in body weight all stimulants should be discontinued.

To take up seriatim the different forms of insanity is manifestly impossible in our time limit. We must therefore content ourselves with a few general statements. Some medical men of acknowledged ability advocate a purely vegetarian diet, and others of equal ability advocate a meat diet, to the exclusion of all vegetables and fruits. It is probable that there is a golden mean to be found along the lines indicated in this paper. Take the two extreme schools and add them together and you get a plentiful dietary; subtract the one from the other, they reduce themselves to a simple and unsatisfied emptiness. Exclusive systems of diet result from the application of observation on disease to the regulation of the body in health. It is only necessary to change the disease to get an entirely new set of requirements. There is no doubt of the efficacy of raw meat, dry bread and hot water, exclusively in the very common acid dyspeptic states, while plethoric individuals with irritated kidneys and the neuralgic twinges of the uric acid condition, will just as surely obtain relief by the use of farinaeous food and nuts.

In addition to the above-mentioned schools, we have the Ralston club, whose advocates claim to have solved the mystery of arteriosclerosis. Their logic is simple. The arteries calcify; the lime salts cause calcification. All food except fruits, and all natural waters, contain

lime salts, *ergo*, eat nothing but fruit, drink nothing but distilled water and avoid this most common disorder of the aged. Students in natural history tell us that monkeys eat nothing but fruit and live to a great age. Their intellect, however, is not remarkable. On the other hand the raven eats nothing but carrion and lives to a greater age than the monkey, therefore we are forced to the conclusion that the study of our remote ancestors or their contemporaries will not aid us materially in solving this vital question which resolves itself into one of temperance and moderation. Burton says: "Food improperly taken not only produces original disease, but affords those that are already engendered both matter and sustenance; so that, let the father of disease be what it may, intemperance is certainly its mother." And now in conclusion let me say to you in the words of Quarles: "If thou wouldst preserve a sound body use fasting and walking; if a healthful soul, fasting and praying, walking exercises the body, praying exercises the soul, fasting cleanses both."

INHIBITORY ACTION OF THE CEREBRUM.*

BY J. F. PEAVY, M.D.

ASHVILLE, N. C.

Irritability and contractility are primary properties of protoplasm. In their earliest forms they express the simple play of elementary chemical and physical forces. In undifferentiated protoplasm, they exist as general diffused properties of reacting to incident forces indifferently in all directions. The progressive differentiation of form and function expressive of organic progress implies the development of specific irritability or susceptibility to specific excitants, along with the capacity to react in definite ways to these excitants. It implies further the development of a nervous mechanism by which this special irritability is manifested, and through which the reactionary impulses are transmitted to be developed into organic activities. The special senses are special developments of this irritability, and the varied motor activities of animals are derivatives of this primary contractility manifested by protoplasm.

All organic reactions involve a reflex element or factor in that they are in a sense responses to stimuli received through sensation. A strong tendency is manifested by the modern physiologic psychology to treat all nervous action as reflex, even to our highest acts of cerebration. This view I cannot accept unless we regard the reactions when they occur as due to a summation of sensory stimulations. In an act properly reflex the sensory incitement should be the equivalent of the reactionary discharge. As manifestations of energy there is, in fact, no correlation between the two processes, even in acts that are usually considered typically reflex. What the sensory stimulation really does is to discharge an accumulated tension. The properties or qualities of an organism may be defined as its store of accumulated potentials, built up by the operation of experience upon inherited capacities, and existing with reference to ends in the environment. Sensation discloses relations between organism and environment. When reactions follow sensory excitement the real impulse arises within the nerve-centers of the organism, the sensation serving to unlock a stored potential. Reactions occurring without conscious cerebration intervening between sensation and act may properly be described as automatic rather than reflex. Even here, as well as in the

*Presented to the Section on Physiology and Dietetics, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

case of voluntary action, measured in dynamic terms, the motor efflux may vastly exceed the sensory influx, the merest suggestion serving sometimes to put the nerve-centers in energetic action.

Sensory stimulations may not, however, be immediately discharged in motor impulses, but may be themselves stored as part of the accumulated tensions. Herein lies a power the antagonist of reflex action. It is this capacity to stay action, to dominate reflex impulses, inseparably associated with organic progress and especially with the higher phases of human action and development, that I wish to emphasize in this paper.

In every action there is a primary impulsion taking its rise in some way from the needs, desires, inclinations or aspirations of the organism. This primary initiative contributes in part only to the shaping of our voluntary acts. In the sphere of automatic activity, it is entirely the determining factor. Inhibition has doubtless played an important part in shaping even our automatic activities, directing action and development along definite lines. Doubtless there are automatic inhibitions operating subconsciously as part of our self-acting physiologic mechanism. The action of arrest exerted by the pneumogastric on the heart is a familiar illustration of automatic inhibition. The action of the vasodilator nerves and the physiologic dilation of the sphincters are other examples of this mode of action. Doubtless the normal rhythm of glandular actions is dependent largely upon inhibitory nerve influences. Abolition of secretory action, arrest of peristalsis, and cardiac and vasomotor disturbances frequently illustrate pathologic inhibition.

Inhibition as a cerebral function, as a factor in voluntary conduct, is of more especial interest to us in this paper. Even the organic inhibitions which we have instanced, at least those which are physiologic, if not cerebral functions, are closely related to cerebral states. The vasomotor disturbances, flushing and paling of the face, as well as the disturbances of cardiac rate and rhythm produced by strong mental excitement or emotion are due to disturbances of the normal influence of the cerebrum over cardiac and vasomotor control. The normal dilatation of the sphincters of the bladder and rectum which precede the evacuation of those organs are inhibitory acts which lie just within the limits of voluntary control, and involve, of course, the participation of the cerebrum. Like all actions which lie near the boundaries between voluntary and automatic action, they are easily lost control of, and sometimes take place automatically under strong cerebral excitement. In infancy, where all action is, in the main, reflex or automatic, and voluntary control only incipient, these functions are performed without the intervention of conscious volition. Instances are on record of persons able to exert a voluntary inhibition of the heart's action, slowing it at will, and even causing it to stop beating for a time. Such are instances of function ordinarily automatic placed in these cases within the reach of voluntary influence. This action would imply an organic deviation involving a closer connection of the consciously acting cerebral centers with the origin of the cardiac fibers of the pneumogastric.

The cerebrospinal axis, with its connections, sensory and motor, with all parts of the body, constitutes the nervous mechanism for directing the motor activities of animal life. Its progressive development has been a condition of the progressive specialization of actions in the higher orders of animal life. The later stages of this development in the higher animals and in man has been chiefly cerebral, going on *pari passu* with the de-

velopment of intelligent direction and control of actions. This cerebral development has marked man's progress as an intelligent and moral being.

The spinal nerve-centers preside over actions which are reflexly excited and automatically performed, and which relate in general to the avoidance of pain or injury, the protection and preservation of the body. These centers, however, are not entirely independent, but subject to more or less control from the consciously acting cerebral centers. This control is effected by the exercise of inhibitory or depressomotor influence over them.

The highly evolved and complex conditions under which the civilized man lives, make it necessary at times to postpone the present to the future, to endure present discomfort or suffering for the sake of future good. Reflex action prompts to avoid the present pain or grasp the present pleasure, regardless of future consequences. Advanced mental organization, which means high cerebral development, is the antagonist of reflex or impulsive action.

The advance of the race in intellectual and social development and organization has produced new relations, and imposed new obligations. The cerebrum is the special organ for apprehending these new relations and obligations which grow out of the social state. The reasoned purposes upon which the enlightened and moral man acts mean a higher and broader adjustment to the conditions of life. Man reaches and maintains himself upon this rational and moral plane by inhibiting the lower impulses of his nature. These lower instincts, by continued control, lose something of their fierce power, the energy being diverted into higher channels, and developing into higher forms of activity. Inhibition is as much a factor in mental as in moral activity. The power of attention, of application, of mental concentration, is secondary to a power to inhibit impulses to distracting excitations.

The cerebrum is a sort of storehouse for excitomotor impressions. These impressions, instead of being reflected directly in acts, tend to build up mental attitudes or tensions. They may serve to discharge accumulated tensions. Any mental position is incipiently motor. It is this capacity of the cerebrum to store impressions, to stay action, to accumulate energy of position, which distinguishes it radically from the lower centers in its mode of action. This is thinking, as opposed to reflex action. Conscious thinking takes place in the interval between sensation and adjusted action.

The field of conscious action has expanded proportionately with the growing complexity of the conditions of civilized life and the difficulty of automatic adjustment. With each step in development the cerebrum has more and more assumed control of the activities of the organism. The lower centers, however, have not been abolished, but retained in subordinate places in the hierarchy of nervous organization.

The demonstration, by Cajal, of direct fibers connecting the nerve-roots in the posterior sensory horns of the spinal cord with the anterior motor cells, shows that the mechanism of reflex action in the spinal cord has been retained, as the possession of the function itself would necessarily imply. The existence, however, of nerve-routes from these sensory roots to the consciously acting cerebral centers is doubtless an important part of the mechanism for regulating spinal reflex action. Many so-called inhibitions are, perhaps, passive, and consist simply of the sensory stimulation flowing on through an open channel into a higher center without awakening the reflex center at all.

FRACTURES OF THE FEMORAL NECK.

THEIR ANATOMIC TREATMENT.

BY C. E. RUTH, M.D.

Professor of Descriptive and Surgical Anatomy in the Keokuk Medical College; and Clinical Surgery at St. Joseph's Hospital.

KEOKUK, IOWA.

Can the notoriously bad results following fractures of the femoral neck be improved? We feel like answering unhesitatingly that they certainly can, and therefore should be. Explanations are numerous and plausible for the frequent occurrence of this accident in the old, especially women. The causes given for non-union are much less satisfactory. We may instance the following defects supposed to exist: Nature's provisions for repair by limited vascularity, inefficient immobilization, insufficient extension force.

It is not my purpose to review extensively the literature of this subject, but to indicate more especially some of the reasons I consider most important factors in obtaining the unsatisfactory results thus far. In 1890 my attention was first called to what I have come to consider the correct anatomical treatment of these lesions, by Prof. T. J. Maxwell. The method was, I believe, original with him. He has used it for twenty-five years.

The first indication in the treatment of all fractures is correct adjustment of position; the second, immobilization, the third, overcoming muscular action which would tend to disturb the relations by extension, splints, etc. It is very easy and natural to blame nature with defects in our own work, but we should first look carefully to our own responsibilities and see that our own errors are eliminated.

In these cases there is no muscular effort or influence operating on the upper fragment, and the results as to the position of the lower portion will depend on the position of the patient, the kind of retaining force, and his own muscularity, for muscular action is of more importance in determining results of fracture here than anywhere else in the body.

This is due to the great number of powerful muscles passing over the fracture line to be inserted somewhere beyond, and which must exert a powerful displacing force.

The position at least for a time that must be taken by these cases is upon the back, and the displacement is known to be upward, backward and outward rotation, with all the internal displacement of the lower fragment which the muscular tissue will permit.

The pronounced tendency to eversion and external rotation is increased greatly by the external rotary power of the psoas and iliacus, which was neutral or else an internal rotator now must be a pronounced external rotator, because the insertion into the back and internal portion of the upper end of the femoral shaft and lesser trochanter throws the line of action internal to the point of resistance, whereas it was formerly external.

The result is that we have the following muscles acting to produce the following results:

Those pulling nearly directly upward and tending to shorten the limb by over-riding the fragments: Rectus, sartorius, gracilis, semi-tendinosus, semi-membranosus, long head of the biceps, vertical portion of the abductor magnus.

Those pulling very strongly inward as well as upward: Adductor magnus, except vertical portion; adductor longus, adductor brevis, pectineus, gluteus maximus, gluteus medius, and gluteus minimus.

Those which pull almost directly inward and rotate outward: Piriformis, obturator internus, gemellus superior and inferior, obturator externus, quadratus femoris, lower half of gluteus maximus.

Those which pull inward, upward, and rotate inward: Tensor vaginæ femoris, and the anterior portions of the gluteus medius and minimus.

Those formerly internal rotators exerting a strong upward pull are now external rotators, often drawn



directly between the fragments and absolutely preventing approximation of the bony parts: psoas and iliacus.

It will thus be seen that the external rotary force greatly predominates over the internal because of the conversion of internal rotary force of the psoas and the iliacus to external, besides the power of the limb's weight to accomplish the same ends. Lastly, we have the important displacing force, weight, tending to carry the upper end of the lower fragment behind the line

it should occupy because its old attachment support is gone. Posterior displacement and external rotation are only limited by the Y ligament.

Adjustment of the fragments is best accomplished by flexing the thigh upon the abdomen to relax the psoas and the iliacus, bringing them above the fracture line, thereby preventing them from being permanently caught between the fragments.

This position also relaxes nearly all the external rotators; then make vertical traction on the shaft of the femur, which now stands at right angles to the trunk, while moderate eversion is being maintained; next abduct to normal line and make extension in the long axis of the trunk while an assistant makes traction one-half to two-thirds as strong outward, slightly upward and forward from the upper end of the femoral shaft. These manipulations should be made by firm, steady traction, not by jerks, which is to be made continuous by Buck's



1 Psoas and iliacus above line of fracture, when thigh is flexed at right angles to the trunk before making extension.

extension with a weight of from ten to twenty pounds, according to the muscularity of the patient, with elevation of the foot of the bed enough to counteract the tendency of the patient to slide down to the foot. This means an elevation of from six to fifteen inches. A binder's board, or other splint material, should now be moulded to the upper inner aspect of the thigh, over which a band of muslin four to six inches wide should pass outward, slightly upward and sufficiently forward that the weight over the pulley shall overcome the internal pull of all of the rotators and adductors and at the same time raise the lower fragment to its normal level.

The weight on this lateral pulley will be from five to fifteen pounds, according to requirements. The side of the bed corresponding to the injured side of the patient must be raised enough to prevent the individual from being drawn out of position toward the lateral pulley. Patients so treated will have absolutely no pain whatever after spasmodic muscular action is entirely overcome. As to results I herewith report a few cases treated as above.

CASE 1.—Mrs. G., aged 52 years, had intracapsular fracture of the femur Jan. 14, 1871. She lived twenty-five years there-

after, being able to perform the duties devolving upon the average farmer's wife without any disability in any manner traceable to the injury. No shortening. Physician, T. J. Maxwell.

CASE 2.—Mr. R. P., aged 72 years, sustained an intracapsular fracture of the femur Jan. 29, 1881. Result, union without shortening. Physician, T. J. Maxwell.

CASE 3.—Mrs. Courtney, aged 64 years, sustained fracture of the femoral neck in January, 1883. There was union with no shortening, discoverable on examination and careful measurements four years later, by Drs. Kinnaman and Maxwell. Physician, T. J. Maxwell.

CASE 4.—Mr. P. F., aged 25 years, in 1883 fell thirty feet sustaining an intracapsular fracture of the femur. The result was a union with one-half inch shortening. Physician, George F. Jenkins.

CASE 5.—Mr. —, aged 50 years, who was a bridge carpenter, and heavy and large, fell twenty feet, sustaining fracture of the neck of the femur, one through the upper third of the femoral shaft. Result was a union with one-half to three-fourths inch shortening. Physician, T. J. Maxwell.



Showing through the artificial muscles the tendency of the psoas and iliacus to fall between the fragments.

CASE 6.—Mr. C., aged 86 years, fractured femoral neck by fall on the ice. Result was a union in four weeks, but death resulted in seven weeks from exhaustion resulting from his enfeebled condition, bedsores, etc. Physician, T. J. Maxwell.

CASE 7.—Mrs. T., aged 71 years, fractured the neck of the femur in June, 1891. Result, union with three-fourths inch shortening. She uses the limb without apparent inconvenience. She was very poor, had indifferent care, and the weights were not always on. Physician, C. E. Ruth.

CASE 8.—Mrs. W., aged 70 years, in July, 1891, fractured the femoral neck. Result, union with one inch shortening, and use of the limb seems but slightly impaired. Physician, C. E. Ruth.

CASE 9.—Mrs. P., aged 86 years, sustained fracture of the femoral neck in August, 1891. This patient was so completely demented that she would not tolerate any restraint; would not allow dressing to remain on more than a few hours. Treatment was abandoned after the third day. The result was a flail-like limb and no union. Physician, C. E. Ruth.

CASE 10.—Mr. Myers, aged 70 years, fractured femoral neck in 1892. Union with one-half inch shortening. Physician, R. H. Fegers.

CASE 11.—Mrs. Fox, aged 82 years, sustained fracture of the femoral neck in December, 1894. Result, union with one-half inch shortening. Physician, H. A. Kinnaman.

CASE 12.—Daniel F., aged 35 years, sustained fracture of neck of femur by team of horses running away. Patient was a subject of well-advanced pulmonary tuberculosis. A good union was secured, although somewhat slow on account of the

pulmonary condition. The limb was about an inch shorter than normal. Physician, J. H. Coulter.

CASE 13.—John McK., aged 80 years, fractured femoral neck by falling backward on a stone sidewalk. The case was under treatment of another physician a week before it came into the hands of Dr. Coulter, and the joint was found to be very much swollen and painful. The dressings were put on at 4 p.m., but on return next morning found them removed, and the patient absolutely refused to have them replaced. The case was then abandoned. The patient has since been seen frequently, but the limb dangles like a flail. Physician, J. H. Coulter.

CASE 14.—Mrs. D., aged 78 years, fractured the femoral neck by falling in a furrow on the frozen ground. Treatment of the case was uneventful, except that the union was somewhat tardy, perhaps on account of the advanced age of the patient. A good union was secured with only one-half inch shortening. Physician, J. H. Coulter.

CASE 15.—Mrs. Clara K., aged 40 years, sustained fracture of the femoral neck by jumping from second-story window on a brick pile. She was at first under the care of Dr. Coulter of Summitville, Iowa. Dr. Coulter frequently found the weights hung up and patient quite unruly. She would not keep quiet, and was removed at the end of one week to St. Joseph's Hospital, a distance of six miles, and operated upon at my clinic for hemorrhoids and perineal laceration three weeks later. She was quite tractable in the hospital. Result was a union with no shortening whatever. Physician, C. E. Ruth.

CASE 16.—Mrs. Dr. Nellie M.U., aged 30 years, sustained fracture of the neck of the femur in a runaway in June, 1896. A good union was the result, with no shortening discoverable after repeated measurements. Physician, C. E. Ruth.



CASE 17.—Mrs. M. J. B., aged 60 years, very feeble, fractured femoral neck Sept. 7, 1898. Union in six weeks with no shortening. The condition of this patient was very precarious for several weeks, so much so that but little hope was entertained of saving her life. Physician, C. E. Ruth.

We do not come to you with a single case in the hands of a man of slight experience, but with seventeen cases of unquestioned fracture of the femoral neck in the hands of men of large experience. In fifteen of these cases union was obtained with useful limbs in persons ranging in age from 25 years to almost the extreme limits of old age, and yet the shortening was no more than one inch in any, and after the most careful measurements no shortening whatever was discoverable in five of the cases.

In one of the cases reported with one-half inch shortening the physician in charge informed me that he could find no shortening, and that the patient walked without a particle of halt or limp, but one-half inch shortening was claimed in the prosecution of a suit brought against

his employers for damages. This man fell thirty feet when the fracture was produced. In some of my own cases I am certain that I did not use heavy enough weights, and in others the treatment was interrupted occasionally by having the weight removed to satisfy some meddlesome attendant, nurse or patient.

The only failures to secure union were in two cases that absolutely refused to have the treatment carried out. I might cite you many cases of flail-like limbs from this cause, as can be done by most physicians of any considerable practice. I have had no opportunity to examine the condition of the bones post-mortem. I have no doubt whatever that in these fifteen cases bony union was obtained. Where little or no shortening took place, and the limb was functionally perfect, there can be no doubt that the union was bony.

Whatever may be the opinions in regard to repair in this bone, results that are almost perfect, and make the patient comfortable while repair is taking place, are certainly worthy of our attention, endorsement, and most earnest efforts to establish. The usefulness of this plan of treatment is not alone limited to fractures of the femoral neck, but is equally applicable to the treatment of hip-joint disease with or without operation.

In some of these cases treatment was not begun until several days after the injury, and in some the treatment was interrupted occasionally for a short time. In no case was pain complained of after the first day if weights were enough to prevent muscular spasmodic disturbance of the fragments.

By this plan of treatment the patient can be raised, if needs be, to the sitting or semi-sitting posture for the purpose of cleansing. Some of these cases had bed-sores, and were lying in their own excrement and suffering severely when the treatment was begun. These were raised daily to the sitting posture, cleansed, and the sores healed during the use of the extension treatment. The patient can be easily handled in the use of the bed-pan. The method is easy of application, and only fulfills the indications we require for all other solutions in continuity of bone, viz., securing coaptation of fragments without the possible intervention of the soft parts overcomes all displacing tendencies of powerful muscular action instead of ignoring the action of more than one-half the muscles and displacing power of the limb's weight.

The results prove that it is not necessary to allow most of the fractures of the femoral neck in the aged to produce cripples for the rest of their lives, or that they should suffer, except from the confinement, and that could be scarcely less by the plan of treatment proposed than to give the patient every possible liberty during the time required for procuring union. It also proves that the influence of the *synovia* is *nil* as a preventive of union. I do not wish to be considered as claiming that perfect results can be confidently expected in all of these, or in fact any, fractures, and thereby invite prosecution for malpractice in every case of failure. What I do want, however, is to see the day when we will be able to lay aside prejudice and custom if need be, and use the method that will give the best results.

THE STUDY of the mosquito in its relation to malaria is being prosecuted with great vigor at Johns Hopkins Hospital. The crow is found a good subject for receiving the infection from the insect.

accurately tested at this date. Note change in cutaneous sensibility four days later, as shown by charts appended.

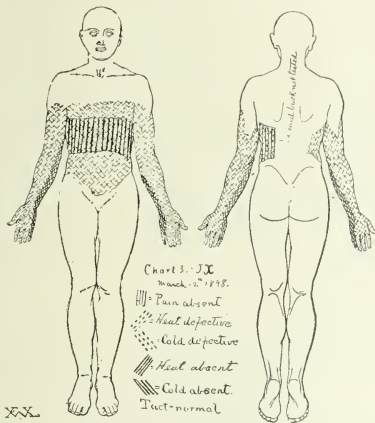
Reflexes.—Organic. No defects of deglutition, defecation or micturition. Tendon: Elbow-jerks present and equal; wrist-jerks present, active and equal. Knee-jerks present, exaggerated and equal; rectus and ankle-clonus present and equal on both sides. Cutaneous: Not observed. Vasomotor system: Patient sweating freely. Trophic: No muscular atrophy observable to ordinary examination. No trophic ulcerations.

Urine.—Reaction acid, barely; sp. g. 1030; phosphates in excess; albumin and sugar absent.

Blood-count shows a moderate leucocytosis (16,500.) This was probably due to the intercurrent tonsillitis.

July 10.—A tuberculin test, with m. xv of a 1-250 solution was followed in two hours by headache, and chill and sweating in twenty-six hours. Two days after admission the acute tonsillar inflammation subsided, the temperature dropped to normal, and for the next four weeks fluctuated between 98 (a. m.) and 100 (p. m.), only once during this time rising 2 degrees above the 100 mark. After the two weeks following this period, the temperature varied between 98.4 (morning) and 99.4 (evening). (See chart appended.)

Re-examination four and five days after admission. (See chart No. 1.)



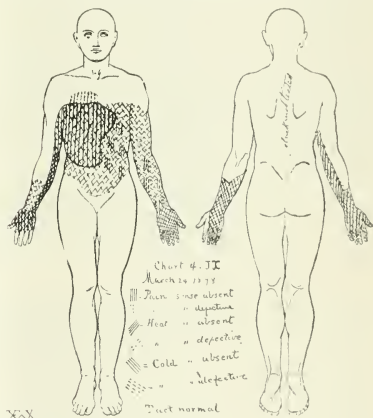
2.) Tests were made in the ordinary manner with test-tubes of decided warm and cold water for temperature, cotton and pin for tact and pain. A week later (see Chart 3) these sensory defects were increased by addition of an area of *analgesia* over the thorax anteriorly. At this date power in legs has apparently increased, so that he can move both feet and legs with considerable freedom as he lies in bed.

Reflexes.—Pupils are moderately dilated when at rest, respond well to accommodation and contract to light, but do not dilate farther when light is excluded. Organic: Has to be catheterized for a day or two. Vasomotor: Well marked "tache" over thorax and abdomen. Trophic: No "bedsores" or other ulceration.

March 17.—Electrical tests now and later showed partial R. D. in muscles of hypothenar group of right hand, as evidenced by very sluggish contraction to galvanism and nearly equal responses to both poles, though K. C. is slightly greater than A. C.

Muscles elsewhere react normally to galvanic and faradic currents. There is slight improvement in power of legs and arms.

Twelve days later the motor symptoms were practically unchanged, the defects of heat and cold sense were somewhat diminished in area, but persisted on thorax and a longitudinal strip along the inner surface of the



Motion.—Quadruplegia, of waxy, rigid type is still present. The pectorals, deltoids, supinators, small thenar muscles, and short extensors of toes seem absolutely powerless on both sides. Elsewhere the muscular power is barely sufficient to flex and extend joints, extension seeming rather stronger than flexion at the elbows.

The tongue protrudes in the median line, is longitudinally fissured, and a general fibrillary tremor of the entire organ is present.

Sensory defects of a "dissociation type" have appeared as per Chart No. 2. These consist practically of diminution and loss of appreciation of heat and—to a less degree—of cold, with preservation of tact and pain over thorax, abdomen and upper arm anteriorly, and on forearm and hands anteriorly and posteriorly. (See Chart

right arm, forearm and hand; also over left forearm and hand posteriorly. (See Chart 4.)

March 29.—About this time I asked my colleague, Dr. Freiberg, orthopedic surgeon to the hospital, to see the patient, and it was decided by his advice to make extension on the entire vertebral column in the hope of relieving the pressure which was presumed to exist on the upper cervical cord. The effect of the extension and counterextension on the sensory symptoms was startling. Twenty-four hours after application of the apparatus, it was difficult to detect any sensory loss over thorax or abdomen, and when found it was in such irregularly scattered patches as to make its accurate charting impracticable. By April 10—twelve days after application of extension—the only remaining defects were a loss of temperature—heat and cold—sense over right

hand, palmar and dorsal surfaces; and over the left hand, dorsal surface only. The case was now transferred to the care of Dr. Freiberg, who furnishes the following:

SURGICAL HISTORY.

On March 28 I examined the patient whose condition has been accurately described by Dr. Langdon. I found present, exclusive of the nerve symptoms already described, a considerable, firm, diffuse swelling immediately below the occiput and extending downward to the fourth cervical spine. Without any distinct boss it was sufficient to render indistinct to the touch the vertebral spine. There was considerable tenderness on pressure complained of in the whole swollen area.

There was no torticollis whatever, but the patient was unable to rotate the head with freedom. Likewise it was impossible for him to bend the cervical spine backward to the normal extent. There was some interference with

of by Dr. Langdon as startling; this is by no means an exaggeration. The improvement was, however, steadily progressive from this time forward.

June 4.—The appetite is good; no fever; no pain; less rigidity. He can move his neck with considerable freedom; also all joints of extremities. Grasp: dynamometer R. 50, L. 46; knee-jerks exaggerated; R. and L. ankle-clonus present R. and L.

The patient was kept in bed with the same weight attached until Aug. 4, 1898. At this time an examination showed an apparently complete return to the normal in every regard save one—the power to rotate the head laterally. The extension was therefore removed and a Sayre jury mast applied. On August 22 the patient expressed a desire to leave the hospital and was permitted to do so, wearing no apparatus, and he walked out of the hospital without assistance. About six weeks ago I had an opportunity of examining the patient, and his con-

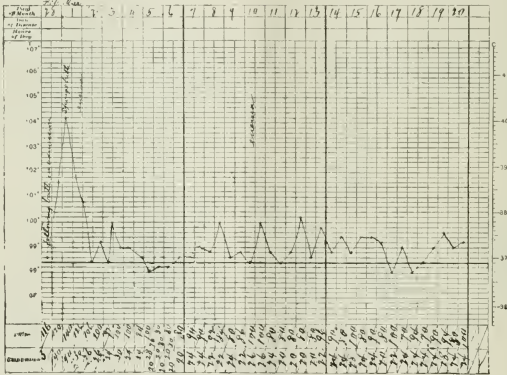


Chart 5, J.X. Pachymeningitis Spinalis Externa.

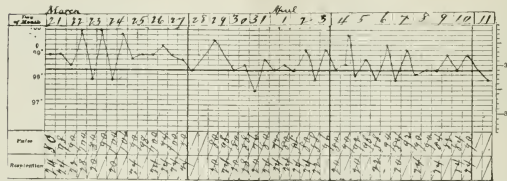


Chart 6, J.X. Pachymeningitis Spinalis Externa.

the power of approximating the head toward either shoulder. The nodding motion was not interfered with. Examination of the pharynx failed to show anything abnormal.

The diagnosis of tubercular disease of the upper cervical spine was made with some reserve, especially with regard to its exact localization. The treatment consisted in the application of weight and pulley extension to the head, the weight of the body serving as counter-extension. The weights were increased gradually from three to twelve pounds.

The change in the patient's condition has been spoken

condition remains the same. A very slight interference with rotation of the head and the induration about the upper spinous process, which has never disappeared entirely, are all that remained of the conditions found upon the first physical examination of the neck. The patient asserted that his muscular power had returned in full degree.

ADDITIONAL COMMENT AND SUMMARY.

Since leaving the hospital the patient has been under our separate and joint observation at intervals of a few weeks. His health remains good and he attends regularly to his duties as salesman and clerk in a store.

Neurologic examination May 19, 1899, by Dr. Langdon: Height, 5 ft. 8 inches; weight, 138 pounds; general nutrition good.

Temperature, 99.3, after dinner and active exercise; pulse 72, regular. A slight fullness is apparent about the fourth or fifth cervical spines. Head movements are free as regards rotation and extension; somewhat limited as to flexion forward—can not touch manubrium sterni with chin. There is no muscular atrophy; no defect of gait or station. Power is good in all extremities. Grasp: dynamometer R. 105, L. 98—normal average about 80. The same dynamometer was used as in former tests.

Sensation.—No subjective sensory symptoms; no defect of tact, pain, temperature or muscle sense.

Reflexes.—Organic: No bladder or rectal defect, no dysphagia. Myotatic: Elbow and wrist-jerks present; right rather more active than left; knee-jerks somewhat hyperactive and equal. Rectus-clonus and ankle-clonus absent. Cutaneous: Palmar absent; epigastric, hypochondriac, abdominal and cremasteric present; normal. Plantar present, giving marked "flexor" responses in both feet.

Diagnosis: Having in view the quadruplegic type of paralysis, the possibilities to be considered were: 1, cerebral diplegia; 2, poliomyelitis anterior; 3, multiple neuritis; 4, cervical myelitis; 5, spinal tumor; 6, hematomyelia; 7, hematorrhachis, external or internal; 8, leptomeningitis spinalis; 9, pachymeningitis spinalis interna; 10, pachymeningitis spinalis externa.—primary, *a*, rheumatic; *b*, gonorrhoeal; secondary *c*, tubercular (vertebral caries.)

Cerebral diplegia was readily ruled out by the history, the gradual onset, and absence of mental, aphasic, or cranial nerve symptoms. Poliomyelitis is excluded by the rigid type of paralysis and the presence of marked sensory defects. Multiple neuritis was not indicated by the history, and was further eliminated by the absence of pain, tenderness and muscular atrophy. Cervical transverse myelitis would have presented sphincter defects and trophic lesions, which were absent. Spinal tumor is conspicuous for the presence of root pains, which were absent. Gumma was excluded by lack of evidence of syphilis; and as already stated, syphilis is absolutely excluded in the case by recent developments of a most convincing nature.

Hematomyelia and hematorrhachis have a sudden onset with rapid improvement if the patient lives. Leptomeningitis was contraindicated by slow onset, the absence of pain or hyperesthesia on movement of the spine, the evident localized character of the lesion, with little tendency to spread. Pachymeningitis interna was excluded by absence of adequate causes, as syphilis, alcoholism and trauma; also by absence of marked pain, and irritative root symptoms, as well as absence of the later muscular atrophy. Thus, by a process of exclusion a tentative diagnosis of pachymeningitis externa was reached, but whether this was primary, i. e., rheumatic or gonorrhoeal, as the history might suggest, or secondary to vertebral caries, as the heredity and part of the symptomatology would indicate, is perhaps an open question.

As Dr. Freiberg has stated, the diagnosis of tubercular disease of the vertebra was made with some reserve by both of us. Gowers⁴ states on this point: "When clear indications of caries precede the paralysis the nature of the case can hardly be mistaken. . . . When the two develop together mistakes are often made, but are

usually due to the want of repeated examination of the spinal column. . . . It is when the root or cord symptoms precede distinct evidence of bone disease and when the latter is so slight as to be equivocal that the chief real difficulty in diagnosis occurs." It will be seen that the case here recorded comes under the third condition described above.

To sum up: The symptoms indicated an increasing pressure of exudate with its incidence at the first and second cervical segments of the cord anteriorly, thus compressing the ascending anterolateral tract of Gowers—temperature sense symptoms—and the pyramidal tracts before their complete passage into the lateral columns. In no other situation is it possible to conceive an external lesion causing the motor symptoms here presented, viz.: quadruplegia with waxy rigidity and without muscular atrophy of the arms. The slight electric changes noticed in the hypothetic group of right hand were doubtless due to a nerve-root involvement lower down; as was the absence of pupillary dilatation on removal of light.

Against the presence of primary vertebral disease are the supposed "rheumatic" constitution, the preceding gonorrhoeal infection, the absence of trauma. In favor of primary vertebral disease of tubercular origin are the hereditary factor, the tenderness on pressure, with thickening over cervical spine; the reaction to the tuberculin test, which, however, was much delayed; and finally the doctrine of probabilities, as well as the favorable outcome.

Treatment.—In addition to the surgical treatment proper, of extension and counterextension, potassium iodid was given in twenty-grain doses for about one month following his admission to the hospital. Cod-liver oil and hypophosphites were also administered, and the patient was kept in the open air whenever practicable.

MEDICINE.

ITS PROGRESS, PROBLEMS, AND PROSPECTS.*

BY J. BRUYERE, M.S., M.D.
SURGEON TO MERCER HOSPITAL,
TRENTON, N.J.

(Continued from p. 446).

Many of the forty odd specific infectious diseases are now known to be due to micro-organisms. For a long period germs had not been isolated, and no cultures or inoculations had been made; hence, the only proof of their action in disease was the constancy of their presence in infectious diseases. This led many to believe that organisms might be the result, rather than the cause of disease. Some thought that organisms were present in healthy tissues, and could not be the cause of disease. Koch, in 1881, and subsequently, by his careful scientific methods, did much to establish the foundation of bacteriology. He demonstrated the distinct varieties of infection, the possibility of isolating their germs, of making cultures, and inoculating animals by the same. He first used for bacteriologic purposes, the Abbe system of substage condensing apparatus, the aniline dyes, the cultivation of bacteria on solid media, etc., and furnished many original and important suggestions. Such in brief, is the history of bacteriology, which has such a marked influence in revolutionizing etiology, pathology, and the principles and practice of medicine. The modern germ theory of disease now fully explains spontaneous generation, fermentation, putrefaction, infection, etc.

* Read before the Mercer County (N. J.) Medical Society, at its Fiftieth Anniversary, May 23, 1898, and subsequently revised.

³ See Collier, "Brain," 1899.

⁴ Manual of Diseases of Nervous System, vol. i, p. 251.

Their discovery of minute organisms and the study of their life history, their culture and growth, their likes and dislikes, their secretions and chemical character, is teaching us the origin of the infective maladies and the laws of their development.

The study of microscopy and bacteriology has established a new era in the practice of medicine by giving to etiology and pathology a new impulse and many scientific truths. Twenty-five or thirty years ago the uses of the microscope were limited. There was no section cutting, no staining process, no oil immersion or apochromatic lens. But little was known of etiology or pathology. An ocular description of morbid changes was given, with but little knowledge of how or why these changes took place. This constituted morbid anatomy, which was afterward changed to the science of pathology by the advance in bacteriology and microscopy. The "cell theory," and the "germ theory" established modern pathology. In pathology system followed system, but these have all perished and been replaced by cellular pathology, which is the accepted theory of to-day. Hooke discovered plant-cells and later animal cells were discovered by Schwann and cell-nuclei by Robert Brown. Hooke, in 1667, introduced the term "cell," and Malpighi and Grew did much to establish the "cell doctrine." Merbel, in 1806, and Johannes Müller, in 1835, more elaborately described cells, but it remained for Schwann, in 1839, to establish the "cell theory." Schleiden, Baumgärtner and Schwann, proved the cellular origin of the various vegetable and animal tissues, and their investigations became the foundation of all modern histology and led to Virchow's "cellular pathology," and the development of microscopic botany, etc. In 1858 Virchow formulated his doctrine of "modern vitalism," which is the cell-theory of the present day. He showed that every organism is composed of an aggregation of cells, and that every cell has an individual existence, a unity and purpose of its own. He expressed a strong belief in the continuity of living matter. This belief he recently reaffirmed in a most impressive manner. At the twelfth International Medical Congress, lately held at Moscow, he reiterated with great earnestness his view of cellular life. "Life," he said, "has no other origin than from life itself. Life is in the cell. He who speaks of serum as a vital force apart from cells is wrong. The grand truth of cellular succession may be assailed in the future, as it has been in the past, but it will never be thrown to earth." In 1856 Virchow introduced microscopic anatomy, and in 1866 published his great work on "Tumors." He demonstrated the fact that the blood is not the prime cause of dyscrasia, as Andrel supposed, but only the medium through which dyscrasia is produced. He also showed that pyemia accompanies thrombic processes and is not due to the absorption of pus. Accepting the "cell" and the "germ theories," and by the use of the microscope and scientific methods, he, more than any other, established the modern science of pathology.

The first pathology written in the English language was by Gross, in 1839, but still in 1848 pathology was almost an unknown science. The first pathologic society was founded in Dublin in 1839. The New York Pathological Society was founded in 1844, the London in 1846, and the Philadelphia in 1857. The rapid advance in bacteriology and pathology has taught us much about the processes and causation of disease, and has greatly modified the principles and practice of medicine. Not only did bacteriology revolutionize pathology and etiology, but it gave rise to hygiene, preventive medicine,

sanitation, boards of health, the knowledge of infection, serumtherapy, immunization, antiseptics, aseptics, etc. We can only briefly allude to these. When Jenner discovered the principles of vaccination, little did he think that his virus would become the forerunner of the antitoxins, and be suggestive of serotherapy, immunity, or preventive medicine. Scientific investigation into the nature and cause of disease has led to natural methods of cure—to organotherapy, serumtherapy, antiseptics, etc. Organotherapy aims to supply to an organism the chemical or vital elements which it requires. These elements are the animal extracts, which are secured from the glands and tissues of the body—such as thyroid, thymus, and lymphatic gland; the brain, heart, stomach, kidneys, spleen, pancreas, testes, ovary, uterus, blood, bone-marrow, suprarenal capsule, etc. When there is loss of function of these glands or tissues the extract from a corresponding healthy organ or tissue is given to supply the deficiency, and must be continued regularly, just as food to relieve hunger. Whatever the function of the thyroid—whether to change or destroy injurious substances in the blood or to secrete substances to aid in the development of bones, muscles and nerves—its secretion passes directly into the blood, where it has a physiologic action. When the thyroid gland is removed, or its functions impaired by disease, as in myxedema, cretinism, and exophthalmic goiter, it has been ascertained that the pathologic conditions engendered are removed or greatly improved by the administration of thyroid juice, extract or powder. Thyroid secretion or extract has been used to great advantage in anemic obesity, struma, uterine fibroids, uterine hemorrhage, at menopause, epileptic psychosis, acromegaly, rachitis, Basedow's disease, mild cases of diabetes, psoriasis, lupus, ichthyosis, eczema, pityriasis rubra, alopecia and various kinds of insanity. Iodothyren—the active principle from the thyroid gland—seems to be less objectionable and just as useful. The pituitary body may be of use in acromegaly, and bone-marrow in anemia. If the suprarenal capsules are removed, emaciation, feebleness and death follow, but if injections of the fresh extracts of the organ are given death is at least retarded, if not averted. Suprarenal extract is used in eye diseases, etc. It is a powerful astringent, and is sometimes injected into the eye, and upper air-passages, with good results in congestive conditions. It is also a heart tonic, and may increase the red corpuscles, and act as a vasoconstrictor, etc. Brown-Séquard's testicular juice is no longer regarded as an elixir of life, although it accomplished considerable through auto-suggestion. Babes and Paul have made the glycerin extract from the brain, which may remedy some of the defects of nature, by increasing cerebral activity. Other glandular extracts are given with varying results, and the time may not be far distant when organotherapy has a well-defined field of usefulness. Nevertheless, animal therapeutics remain yet to be developed, for physiologic chemistry, experimental physiology, and clinical observation have yet to determine the definite uses of the animal extracts.

Serumtherapy, though still in its infancy, promises brilliant results. Richet, in 1889, claims to have given the first serotherapeutic injection, and Bouchard, in 1890, published the first contribution on serotherapeutics. Behring and Kitasato, in 1890, showed the nature and effects of antitoxic serum on the fixed tissue-cells, and in 1892 Behring showed the splendid results of serumtherapy on diphtheria. Diphtheria antitoxin not only has immunizing qualities, but is also a veritable remedy—having reduced the mortality from 47 to 8 per

cent. The serum treatment for bubonic plague has been demonstrated to be of great value. The serum treatment of pneumonia is also said to be very successful in Italy. De Renzi, Ughetti, Cantieri, Messolongo, and others declare that "it is more efficacious than any other agent." Wasserman lately reports excellent results. Haffkine's vaccinations for cholera are said to afford considerable protection against this disease, vaccinated persons being twenty times safer from attack, and eighteen times securer from death than the unvaccinated. Out of over two hundred coolies inoculated by Dr. Hare under Haffkine's direction, only 2.55 per cent. died, while among the inoculated 19 per cent. died. Sanarelli has prepared a serum that has reduced the mortality in yellow fever from 50 to 27 per cent. Bird serum, according to Behring, is superior to horse serum and other animal serum, in tuberculosis, still antituberculous serum is not very favorable in its results. The antistreptococci, antisymphilitic, antityphoid, antitetanic, antisnakebite, and many other serums have been used with varying results, but space will not permit their further enumeration. Lately the mixed toxins have been used with good results in the treatment of disease. It is claimed that the mixed toxins of the streptococcus of erysipelas, and the bacillus prodigiosus, have been used in the treatment of sarcoma, with marked results.

The knowledge of the infectious diseases that bacteriology gave us led us, as we have previously stated, to a better knowledge of vaccination, and developed the idea of serumtherapy for its curative and immunizing properties. It also developed and gave a new meaning and impulse to hygiene, sanitation, boards of health, or preventive medicine, and finally led to Listerism, antiseptics, and asepsis. The origin of the infectious diseases being known, their prevention became apparent. Dirt no longer possessed the odor of sanctity, but became the symbol of death. That "cleanliness is next to godliness" is also the teaching of bacteriology. The Mosaic laws enjoined cleanliness, isolation of the sick, and wholesome food and drink, hence the Jews enjoy a remarkable immunity from epidemic diseases. A greater knowledge of hygiene has led to greatly decreased mortality. Two centuries ago, the mortality in London was 80 per 1000; it is now 18 per 1000. A century ago scurvy was to be found on nearly all ships, and jails and hospitals were the hotbeds of disease. Thirty years ago the English troops at home died at the rate of 20 per 1000, now the death-rate is less than half this amount. In the fourteenth century the plague or black death is said by Wingate to have destroyed "13,000,000 people in China, 24,000,000 in Oriental countries and not less than 25,000,000 people in Europe." Cholera, yellow-fever and smallpox have also been epidemic for hundreds of years, and cost millions of lives. In Jessora, India, in 1817 more than 10,000 people died of cholera in two weeks, and in Benares in 1818, 15,000 died in two months. In 1878 there were 15,934 deaths from yellow fever in Louisiana, Tennessee, Alabama and Mississippi. Smallpox exterminated whole tribes and almost wiped out whole nations. In Mexico it attacked "3,500,000 of the population, leaving no one to bury them." Dr. Crighton estimated that in Russia "every seventh child died annually of smallpox," and Colon tells us that in France the annual number of deaths from smallpox was from 60,000 to 72,000. When bacteriology revealed to us the cause of these deadly infectious diseases, boards of health were appointed as guardians of the public health. In 1865 Louisiana appointed the first state board of

health to cope with yellow fever; but this had such limited powers and was so brief in its existence that the Massachusetts State Board appointed in 1869 should be regarded as the first actual state board in the Union. Now nearly every state and town has its board of health. France, Germany and England have their national boards of health, or departments of health; but the United States is still lacking in this.

Increased knowledge as to the cause of many diseases has led to the adoption of preventive means. The adoption of public health acts by sanitary authorities has increased the general health, especially among the poor. The mortality from smallpox, says Parker of London, has diminished 96 per cent.; deaths from fevers have declined 82 per cent.; deaths from typhus 95 per cent.; deaths from enteric fever 60 per cent.; deaths from scarlet fever 81 per cent.; and deaths from phthisis 46 per cent., and diphtheria about 59 per cent. The decrease in the deaths from malaria and many other zymotic diseases has been very great. Parker says that, "the general effect of improvement in sanitation is that 600,000 persons reached the age of twenty-one, who sixty years ago would have died." Skillful operations and appropriate medicines have saved many, but preventive medicine has saved far more. Through preventive medicine, which is now being established on a scientific foundation, infectious diseases will soon become unknown in civilized countries. To this end individuals and communities must act in accordance with well-established hygienic laws. Increased diagnostic skill has done much for preventive medicine. Diagnosis is now arrived at by a process of reasoning, not by intuition as formerly. An elaborate description of symptoms no longer takes the place of accurate diagnosis. We no longer base diagnosis and treatment on the theories of disease. Diagnosis is now the result of scientific precision in methods of thought and observation, together with a skillful use of instruments of precision. By such methods, we now quickly and definitely recognize many diseases that were formerly recognized only after long periods of observation and many autopsies. Time is thus gained by an early and precise diagnosis, and the community, by being forewarned, is largely forearmed, so far as epidemics are concerned. Modern diagnosis, therapeutics, and operations all aim at prevention. And yet we are told by Gould, that more money is devoted to astronomy than to the prevention of disease. Men seem to be more interested in the stars and constellations than in their bodies or physiologic life. Nevertheless, the progress of the age in which we live is characterized by preventive medicine, and private and public hygiene. This fact is a monument to the honor and glory of medical men, rather than to the laity, who have done more for astronomy than for preventive medicine.

Prevention is far better than cure. This is the medical idea, object and aim of the future. We now have a proper respect for Hygeia—the goddess of health. We no longer respect ascetics, dyspeptics and pale melancholics. Those pale, devitalized, saintly people, filled with negative goodness and amiable tameness are insipid, and incapable of those positive, robust, aggressive virtues, so much in demand at the present day. Good digestion and assimilation—or good health—the prevention of disease—is the sub-stratum of happiness, of usefulness and of morality. The great object and aim of medicine is to secure and maintain health, or to prevent disease. If this is so, should not doctors strongly and unitedly protest against the violation of the laws of

heredity, which produce so much disease. Why should not syphilis, consumption, scrofula, epilepsy, inebriety, insanity, criminal tendencies, etc., be a restriction to marriage? The increase of degeneracy is largely due to the violation of the laws of heredity, and to unregulated marriages. The altruism that is a product of civilization protects the degenerates and fosters abnormalities. This is an age of charities, of asylums, hospitals, reformatories, prisons, sanatoriums, and eleemosynary institutions of every kind, and the demand still increases. Christian civilization, by reversing the Darwinian law, makes the survival of the unfittest a possibility. Our social and political institutions and the general welfare of the race require that the wholesale production of abnormalities cease. Is there any just reason why the insane, epileptic, syphilitic, consumptive, and other degenerates, should marry and bring into the world those who are a burden to themselves and to the society? Is it altruistic to permit the propagation of hereditary disease and crime? Do we not owe something to humanity? To entail disease, evil tendencies, degeneracy, on a child—is this not cruel and unkind? Is not marriage under such circumstances based on sentiment, rather than upon reason and justice?

Degeneracy has become such an enormous burden to society, such a blight on human happiness and well-being, that the laws of heredity must be considered, and marriage must be regulated by the law of conscience, if not by the law of the land. The future altruist will consider the methods of preventing degeneracy, rather than methods of cure. We now have sanitary laws, and we will then have hereditary laws to protect posterity. A parent is not allowed to give material poison to the offspring, so as to produce weakness, disease and death, but he is allowed to transmit congenital and moral poison to his offspring, and thus consign it to a fate worse than death. A better civilization will remedy this. We now have laws to protect the bodies from external disease; we will then have laws to protect the child from inherited disease. Prevention is the watchword of the future, for individuals and nations alike. Herein lies the hope of the physician, of the individual, and of the nation. Preventive medicine will teach people how to live and will be the index of a higher civilization. We need a higher moral education based upon the study of medicine. The grandest study for mankind is man. Seven thousand murders take place annually in the United States, and about 122 legal executions, and 131 lynchings. There are about 100,000 orphans, and, according to J. S. Billings' statistics for 1890, there were 106,252 insane; 95,571 imbeciles and idiots; 50,411 blind; 41,283 deaf-mutes; 73,095 paupers, and 86,000 prisoners. It is said that from 65 to 75 per cent. of crime, imbecility, and insanity is due to heredity, and yet only about one-tenth of the criminal offenses are detected and punished. During the past ten years crime has increased 60 per cent. When we consider the great increase among the delinquent, defective and dependent classes, who are filling to overflowing our prisons, asylums, and reformatories, and when we consider the enormous burden they are to society, should we not as physicians do all in our power to prevent this great increase in degeneracy? With this general consideration of preventive medicine, we will pass on to the consideration of the prevention of infection by means of antiseptics, which was originated by Lister.

In 1867 he first published his experiments on the antiseptic treatment of wounds. His theories were received

with distrust and contempt, and it was said that "the man who would claim to heal wounds without suppuration was a visionary." Not until about twenty years after this publication was antiseptic surgery fully accepted and developed. Gross, "the Nestor of American surgery," in his "System of Surgery" (1882 edition), says that although various observers "have established the existence of myriads of low forms of organisms in our breathing atmosphere, the demonstration of living, disease-producing germs is wanting." He thought that putrefaction, suppuration, blood-poisoning, etc., were induced by "epithelial, and pus-cells, and other particles of organic matter" held in suspension in "the atmosphere of ill-ventilated and long-occupied hospitals." The true causes of abscess, septicemia, hospital gangrene, erysipelas and tetanus, were at this time still *sub judice*. Lister, at first, supposed that micro-organisms existed principally in the air; hence, ligatures, instruments, dressings, sponges, etc., were only cleansed. He soon ascertained that spraying the air was not sufficient, as everything that came in contact with wounds might contain germs. Following this idea, the skin of the patient, the hands of the operator, and all bandages, ligatures, etc., were made free of germs by antiseptic solutions. Germicidal agents now came rapidly in vogue, and Lister not only filled the operating-room with the vapor of carbolic acid, but antisepticized all tissues and surgical appliances. Observation soon demonstrated that the air did not contain so many deadly germs as supposed, and that such persistent and strong irrigation was not only not essential, but irritated the tissues, and was injurious. Dressings that had been sterilized by dry heat, live steam, or boiling water, were found effective; hence, it became apparent that antiseptic solutions were to be used to irrigate tissues only when some septic material was to be washed away.

Thus the antiseptic gave way to the aseptic, and the old adage, "prevention is better than cure," was again confirmed. The germicidal powers of the vital tissues later became known, and the necessity of strong antiseptic fluids, which irritated and impaired the power of these tissues, was found to be limited. From these observations it was found that the aseptic, and dry method, is a great improvement over the antiseptic method. Before Lister's great discovery of antiseptics, our hospitals were hotbeds of contagion. Fevers, blood-poisoning, erysipelas, suppuration and hospital gangrene were very common. When pain was abolished by anesthesia, operations increased in number, and as nothing was known of antiseptics, there was unfortunately a corresponding increase in hospital diseases. Forty years ago the operating-room was said to have been the dirtiest room in the hospital. Sawdust was strewn over the floor to catch the blood, and the surgeon wore his dirtiest garments, which were sometimes "stiff with blood and animal filth." "He was as proud of this blood-stained rag as a peer of ancient lineage may be of his faded ceremonial robes, and he would step into the operating-room, like a great matador into the ring," and proceed with the operation, which was followed by horrible moans and shrieks, entreaties and curses. During these horrible times it was regarded as "indecent, unwomanly, and revolting," for a nurse to enter the hospital. Anesthesia and antiseptics civilized hospitals, and made nursing a profession of refinement and honor. Cleanliness is now regarded as next to godliness. Hospital diseases have become almost a thing of the past, and mortality records have been greatly lowered. During the Civil War, in

the Massachusetts General Hospital, which had a world-wide reputation for neatness, cleanliness and efficiency, hospital gangrene became epidemic and surgical operations had to be abandoned. There were epidemics of hospital gangrene in many of the prisons and military and municipal hospitals, and infectious diseases were common, and caused more deaths on the battlefields than were due to wounds. In fact, during our late rebellion, there were 2642 cases of hospital gangrene reported, with 1142 deaths. Had we possessed a knowledge of antiseptics, at this time, thousands of lives would have been saved. We no longer have such wide-spread epidemics of erysipelas, dysentery, gangrene, and other infectious diseases. Antisepsis has made "laudable pus, both unlaudable and reprehensible." Formerly the surgeon would go from ward to ward, handling the various cases, with unwashed hands, and spreading the contagion impartially. The risks of surgery, at such a time, were very great. In the large hospitals of Great Britain the deaths from amputation of a limb were at least one to three. Simpson collected a series of 2089 cases, and ascertained that the mortality was as high as one in two and four-tenths. In the Paris hospital the mortality after amputations was nearly one in two, and in 1861 it was three in five, and a few years later it was estimated at 58 per cent. Writing from Paris in September, 1861, Sims says, "In hospital practice almost all cases of amputation die," and attributes it to their methods of dressing wounds. In Germany and Austria, the mortality varied from 43 to 46 per cent. The mortality for amputations of the thigh, in 1840, was 63 per cent.; in 1890, 21 per cent.; but Estes, in 1894, in 77 cases, had a mortality of only 10.4 per cent. Before anesthesia and antisepsis the development of a skillful technic in the handling of surgical instruments and the dexterity and rapidity of operation were the chief essentials. Now the glass-top tables, iron bedsteads, tiled floors and walls, and the great improvement in hospital methods, in heating, ventilating, general sanitation, cleanliness and aseptic methods bespeak another age. Modern surgery owes everything to anesthesia and antiseptics.

We will next briefly consider the progress that has been made in surgery and other branches of medicine during the last fifty years. The scientific progress in surgery has been so great that no surgical genius who thirty or forty years ago went to the land of shadows could return and teach or practice modern surgery. He would not understand the surgical vocabulary, and would be more than astonished at our modern operations on the brain, chest, abdomen, and pelvis. In 1579 Ambroise Paré says of surgery, that antiquity has "nothing wherein it may exceed us, beside the glory of invention, nor posteriorly anything left but a certain small hope to add something." Every generation seems to think that it is the crowning glory of all the ages, and has reached the "*sumum bonum*" of all knowledge. Scarcely twenty years ago Sir John Erichsen declared that, "operative surgery had nearly reached its furthest possible limits of development," and that there were certain regions of the body, such as the brain, the heart, and the lungs, that "must ever remain inaccessible to the surgeon's knife." Goltz, Broca, Hitzig, Fritsch, Ferrier, Horsley and Macewen, during the last fifteen years, have solved many neurologic problems in cerebral surgery, and have recently created a new department in surgery. Under antiseptic precautions and a better knowledge of localized centers, the brain substance is dealt with as freely as any other structure. The motor, special sense, and cortical centers

are now well known, and were thus able to classify and localize brain lesions. We now operate for fractures of the skull, intracranial hemorrhage, abscess, epilepsy, tumors, insanity, imbecility, hydrocephalus, trifacial neuralgia, and sometimes even remove the Gasserian ganglion. We also evacuate pleural effusions, invade the lungs, and suture the pericardium, and even the heart itself. Tumors are removed from the liver, the spleen is extirpated, the great veins are sutured and tied, and the appendix—thanks to Parker and Fitz—is now successfully removed. The stomach is now opened and sutured, and the pylorus is dilated and partially or entirely removed. In August, 1897, Schlatter of Zurich successfully removed the entire stomach, which was extensively involved by cancer. Eight months later the patient had gained thirteen pounds, and was doing nicely until a metastasis of the original disease involving the mesenteric and other glands caused her death on Oct. 29, 1898, about fourteen months after the operation. This was the first case of the entire removal of the stomach with the survival of the patient. On Feb. 24, 1898, Dr. Charles B. Brigham of San Francisco successfully removed the entire stomach in a woman 66 years of age, for carcinoma. Seven weeks after the operation the patient was reported to be gaining in weight, and the condition "satisfactory in every respect." In May, 1898, Dr. George C. MacDonald of San Francisco removed the entire stomach from Jean Patriti, for cancerous involvement. Patriti has since regained his weight and health, and is said to be able to digest the ordinary articles of diet, without any discomfort or inconvenience. Cholecystectomy was first performed by Langenbuch in 1880. Pancreatic cysts are now removed, and Simons, in 1870, demonstrated the fact that the kidney is an accessible organ. A floating kidney is secured, cysts and abscesses are evacuated, calculi are removed, and sometimes even the kidney itself.

(To be continued.)

Correspondence.

Hamburg from the Medical Side.

HAMBURG, Aug. 15, 1899.

To the Editor.—Few Americans stop in Hamburg to study medicine. They rush off to Berlin or Vienna and then have the rare chance of finally finding what they want, or they work around until they are tired out or come across a real teacher. As for myself, with the advice of experienced friends, Hamburg was my first stopping place, and here I stayed for two weeks and never missed a day when I did not have a most valuable surgical clinic of from two to six hours.

Hamburg, without its suburbs, is the second city in Germany. From a clinical standpoint it is of the greatest importance and interest because it has the cosmopolitan population of a great commercial city doing a business with other cities in every part of the world, and its hospitals therefore contain examples of disease from every zone.

It is within eight days and within \$50 to \$100 of New York. Living in the city costs about one-half as much as in New York or Chicago. It is delightful for summer residence, rarely hot. During my visit in July the street lamps were not lighted until 10 p.m., and a newspaper can be read on the street until 10:30. The city is clean. Like Venice, much of the communication within the city is by means of canals. The medical student does not lack for opportunity for recreation.

The neglect and even ignorance of Hamburg as a place for medical study is apparently due to the fact that there is no university here. Until the Franco-Prussian War, Hamburg

was a Free City, and it still is less intimately attached to the Empire than most other territory. The city can not yet afford to undertake a medical school or university itself and the Imperial Government has enough universities on its hands already. Nevertheless, there are courses given in the various branches of medicine twice a year, at the Neues Allgemeines Krankenhaus at Eppendorf. These courses are based on the enormous clinic of the hospital. The next course begins Sept. 25, 1899, and continues three weeks. Each course costs \$3 to \$5. A student can get tickets for as many courses as he can attend to for \$20 or \$25, and he can live at a good hotel in the city for \$2 a day.

The new general hospital is beautifully situated in what was once a suburb of Hamburg, and a village called Eppendorf. It is one of the best examples of the detached pavilion plan of hospital building, so popular twenty years ago when this hospital was built (1884). It accommodates 2500 patients at a time and had during the past year about 3000 surgical operations. The surgical department of the hospital is in charge of Dr. Kimmell, who is to be remembered as the author of early works on the antiseptics of the hands, and a long series of valuable surgical contributions. The hospital is reached by street cars from the center of the city, in twenty minutes, 4-cent fare, and by boat and a short walk in forty-five minutes, for 2½ cents.

Prof. Kimmell gave me an opportunity to see him operate for the removal of a gall-stone in the common bile-duct on a man who served in the Federal army during the Civil War. The incision was slightly oblique from the beginning of the costal cartilages downward and outward, and directly through the rectus muscle. The gall-bladder was opened, emptied and closed; the adherent omentum and intestines gradually and carefully separated from the cystic duct, the border of the liver and the common duct. This seemed to open a small abscess, the border of which was a mass of gangrenous omentum. This infected surface was scraped and at last cut away, and then the denuded surfaces were brought together carefully and closed in by about two rows of catgut sutures. The common duct was then exposed by drawing up the ribs and the liver and pressing away the intestines and omentum with the hands. The duct was well exposed. No defect in it was demonstrated. The edematous and greatly thickened common duct was then opened with the scalpel directly over the impacted stone, which stone seemed to me to be in the middle or upper third of the choledochus. The duct was carefully emptied and sponged out. Into the open duct was inserted a long rubber drainage-tube about 1 cm. in diameter, and held fast there by catgut sutures, which were quickly inserted. The duct was closed tightly about the tube, also with catgut sutures. The tube outside the common duct was then surrounded with a bismuth iodized gauze and the injured omentum brought in contact with this tampon. The lower and upper corners of the laparotomy wound were then closed with a single story of silk sutures and the retracted gall-bladder was fastened into the middle of the wound by the side of the protruding drainage-tube and tampon by a number of catgut sutures. The temporary sutures, used in closing the gall-bladder after emptying it, were now removed and another long drainage-tube was passed into the gall-bladder and down into the cystic duct. This tube was carefully sewed to the protruding opening in the gall-bladder with catgut sutures, and the gall-bladder itself was tightly closed around the tube with the same material. The whole region was then covered with a large dressing. The operation was done in a most direct, quiet and masterful manner. The assistants were alert and sympathetic. One male and one female nurse, two direct assistants and two anesthetizers were the only persons present except five observers. Prof. Kimmell reached his own instruments, grasped his own sponges and threaded his own needles. Live steam was used in a small instrument steri-

lizer during the operation. Chloroform was the anesthetic, and it was well given.

As soon as this operation was over, the room was washed out with a hose. A young woman was brought in with a diagnosis of pyosalpinx. Dr. J. Schutz, one of the resident assistants, operated. The patient was put in the Trendelenburg position. The operation was neatly and skillfully done. A small ovarian tumor was removed from the right side and a thickened, distended and tortuous tube from the opposite side. It was a bloodless operation. Catgut ligatures were used. There was one assistant, two anesthetizers and the same nurses as before. The anesthetic was chloroform, given on the mask. The incision was long, four or five inches, and it was closed completely.

On a subsequent occasion I saw Prof. Kimmell operate on a man for the removal of stones in the cystic duct. He is accustomed, when he can remove all the stones, to perform the so-called ideal operation, which he has successfully carried out twenty-five or more times. In no case has there been any accident or necessity of opening the wound. In these cases, after the complete removal of the stones, the opening in the gall-bladder has been perfectly closed with catgut and the abdomen closed over it.

Prof. Kimmell is accustomed to use the Murphy button in intestinal anastomosis, and has had many cases where it made operating safe and easy.

In the wards of the hospital I saw two patients that had been operated on successfully for echinococcus of the liver. In one of these the diagnosis was quite obscure. The determining factor, however, before operation, was the statement of the patient that he was from Mecklenburg. This peculiarity seems to furnish all the cases of hydatid. In another ward I saw a case of echinococcus of the hip-joint cured by operation. This patient also came from Mecklenburg. Three cases of lupus of the face and nose, almost completely cured by the use of the X-rays, interested me very much. Two of these patients seemed completely cured. Prof. Kimmell informed me that he had treated twenty such cases successfully with no other therapeutic measure. The exposures are made at a distance of nine or ten inches, once or twice a day for fifteen to twenty minutes at each exposure. This treatment is kept up four to six months. The earlier patients suffered a few slight burns, but otherwise the treatment has been without accident. When we consider the unsatisfactory treatment of lupus in all medical and surgical experience, this seems to indicate a great advance in therapeutics. (v. Kimmell *Holländische Heilschrift* *behandlung des Lupus*, *München Medicinische Wochenschrift* 1897, No. 51.) At the Altona Hospital the X-rays have been used with equal success, both alone and combined with conservative surgical treatment. It seems to be reliable. At the old general hospital, the use of the X-rays on lupus has not been so successful.

Another case that is worthy of more than a passing notice was resection of three inches of the femoral artery for sarcoma. The operation had been performed fourteen days previous to my visit. The foot and leg were warm and comfortable. In the course of this operation it was found necessary to remove a portion of the artery. Rubber-protected intestinal clamps were put on the artery, which had been exposed for a considerable distance above and below the tumor. The tumor and the surrounded artery were then removed. The distal end of the artery was then closed with sutures, and the proximal end was drawn down and implanted in a slit in the side of the distal portion in the manner suggested by Dr. Weller Van Hook for the ureters. (*Surgery of the Ureter*, *JOURNAL*, vol. xvv., Nov. 16, 1895, p. 842.) As soon as the clamps were removed the leg, which had become cold and blue, instantly became pink and warm. Sufficient length of artery was obtained by slow gentle pulling and by flexing the leg. This seemed to me a

most brilliant surgical victory. It is the first case treated by that method by Kümmell, and added only twenty minutes to the duration of the operation. In a similar case the crural vein was treated in the same way with equal success. Prof. Kümmell has made several side-to-side anastomoses of large blood-vessels, but he considers this method preferable.

In all his operating, in his treatment of assistants, nurses and patients, Prof. Kümmell is ideal. He is a kind, gentle but strong and masterful man. When he came into the children's ward they gave him a shout as salutation, and a number of the children held on to him as to their fathers. This is not according to our ideas of the German physician, but he seemed to have the entire confidence and sympathy of his assistants and nurses, and in all he was most unassuming.

At the Altona Krankenhaus, which takes care of the 120,000 laborers of Altona, when they are sick, and is truly a city hospital, it was my privilege to see Prof. Fedor Krause in company with Prof. Keen of Philadelphia. This hospital has about 3000 patients, and 1400 surgical operations are performed each year. It is admirably located in a beautiful garden, and is compactly built. It is thoroughly equipped with every adjunct to medical and surgical treatment. Prof. Krause will be remembered as the author of a monograph on the extirpation of the Gasserian ganglion for a facial neuralgia, and of the volume of "Deutsche Chirurgie on Tubercular Diseases of the Bones and Joints," the second and greatly enlarged edition of which has just appeared. He is a genial and attractive man of about 40, with a quick eye and ready hand. His technic is said by those who have seen much of his work to be direct and expeditious.

One of the most remarkable cases in the hospital at the time of my visit was a 14-year-old boy on whom Prof. Krause had four days before extirpated the urinary bladder for sarcoma, and implanted the ureters into the colon. The diagnosis was made by the cystoscope and suprapubic cystotomy. The bladder was removed by blunt dissection down to the ureters. These were ligated and the prostatic portion and urethra cut away. The seminal vesicles and ducts were left intact. This part of the operation was done without opening the peritoneal cavity, except for one or two minute tears which were immediately closed. The ureters could not be brought down to the rectum, so a coil of the sigmoid flexure of the colon was drawn forward and both ureters implanted in it. The cavity from which the bladder had been removed was then packed with gauze to stop the oozing from the prostatic and urethral portion. During the first day the urine was slightly bloody, but after that it was clear and contained only a trace of albumin; 1400 c.c. were collected each day, in a urinal between the boys' legs, by means of a rectal tube passed up to the sigmoid. It was a very impressive sight to see this large quantity of perfectly clear urine coming out of the rectum. The small trace of mucus was easily filtered out and then there was no albumin. The operation lasted four hours. Chloroform was used. The patient was in perfect condition when I first saw him. When the bladder was first removed it was carefully washed and the hole in the fundus completely closed. The interior of the bladder was then filled with formalin solution and stuffed and the distended specimen put in the same solution, to harden. It was a most perfect dissection. Both ureters could be easily seen and the nodular tumor covering and infiltrating over one-half of the bladder wall. When the boy was dressed the first time, ten days after the operation, the wound was clean, and was healing. The boy passed his urine at that time voluntarily by the rectum once every two hours. He was in splendid condition.

Both at Altona Krankenhaus and at the Neues Algemeines Krankenhaus in Hamburg there are separate pavilions for therapeutic gymnastics. At the latter a new pavilion for this purpose is now in process of construction and will be fitted up

about April, 1900, costing about \$50,000. This is a method of therapeutics which in America and England is much neglected. It is possible that the close connection between the Laborer's Insurance Bureau, referred to before, and the hospital has made this treatment necessary. The Imperial Government is bound to take care of the laborer until he is ready and fit for work again, therefore, the broken bone, for example, must not only be united but the muscles, tendons and joints must be in working order before the patient is discharged cured.

The construction of the gymnasium in use now is of a rather primitive kind. The fittings are those which may be found in all the club, college and Y. M. C. A. "gyms" in the United States, and a lot of special machines designed by the Swedish and German orthopedists.

Each machine is adapted to special purposes and can also be made to measure the progress of the cure. Each is adapted to active and to passive motion. The hand, for example, which has been stiffened by injury or infection, is strapped into the machine. The arm is immovable. The pendulum of the machine is made to swing a few degrees, as far as the patient can stand without much pain. This is recorded. For twenty minutes, or other interval, the regular motion of the pendulum is kept up. Then a little advance is made or the patient is required to use another machine or use the same machine in another manner. For office use there is a so-called universal machine. The separate machines are evidently better, as being simpler and adapted to the use of many patients at the same time. The use of these instruments is very satisfactory to the patients. The rhythmic motion of the pendulum, and the gradual manner in which the breaking up of the adhesions and the restoration of circulation and nutrition in the part is accomplished and the recognition of the progress of the repair secures the co-operation of the patient.

At the Eppendorff Hospital I saw some, to me, novel machines. One was a bottomless hopper in the middle of a box of moist sand. The hopper was about as high as a wagon-box. This is used to secure and demonstrate the ability to shovel. Another peculiar "machine" was a flight of steps and a row of sandbags of graduated weight, from fifty to two hundred pounds. These were used to prepare the patient for labor of that kind.

I was told by the editor of a labor paper that the laboring classes are turning against the regularly educated medical profession everywhere in Germany, and resorting to the water and massage methods of treatment. This man was himself educated in medicine, and yet he was not able to explain the phenomenon. One of the books that seems to be most popular and influential, published by a Dr. F. E. Belz, was shown me. It contains 1900 pages, poorly and cheaply illustrated, and is sold at 10 marks—\$2.50. It advertises a sort of sanitarium at Radelbein near Dresden. The book itself resembled any one of a dozen so-called "Family Medical Advisers," which flood our own country. In my subsequent bicycle tours throughout Germany and Austria the popularity of this so-called *naturheil kunde* has been impressed on me. I often stopped in small villages over night and became acquainted with many people. It seems to be a strong movement, and perhaps began with Father Kneip.

BAYARD HOLMES, M.D.

PROPOSED UNIVERSITY OF LONDON.—The proposed University of London, which will have a large medical, and probably also post-graduate school, has at last secured a home in the fine buildings of the Imperial Institute. The Institute lies just north of the famous Natural History Museum at South Kensington, and is in much the same style and an even larger building. This not only provides an appropriate nucleus for a great school, but is also easy of access from all parts of London, and near to the art, architectural and science museums and schools which have made Kensington a household word.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

- American Journal of Medical Sciences, August.**
- 1.—Relation of Idiopathic Dilatation of Colon to Phantom Tumor, and the Appropriate Treatment of Suitable Cases of these Affections by Resection of Sigmoid Flexure. Reginald H. Fitz.
 - 2.—Cases of Typhoid Cholecystitis Ending in Recovery. J. M. DaCosta.
 - 3.—Influence of Various Diets on Elimination of Urinary Nitrogen, Urea, Uric Acid, and Purin Bases. Alonzo Enzelbert Taylor.
 - 4.—Focycoccus Bacillæmia. N. E. Brill and E. Lihman.
 - 5.—Case of Primary Hemorrhagic Effusions into Pleure and Peritonæum. William S. Cheesman and William S. Ely.
 - 6.—Gastric Ulcer at Massachusetts General Hospital, 1888-1898. Robert B. Greenough and Elliott P. Joslin.
 - 7.—Case of Two Distinct Fractures Occurring in the Same Patella at an Interval of Eight Months. John Norman Henry.
 - 8.—Bronchial Obstructions by Suppurating Bronchial Glands. J. N. Hall.
 - 9.—Critical Summary of Recent Literature on Concussion of Spinal Cord with Some Original Observations. William G. Spiller.
- Alienist and Neurologist (St. Louis, Mo.), July.**
- 10.—Outline of Psychiatry in Clinical Lectures. C. Wernicke.
 - 11.—Varying Type of General Paresis and Ataxia. C. H. Hughes.
 - 12.—Legal Disabilities of Natural Children Justified Biologically and Historically. E. C. Spitzka.
 - 13.—Relations Between Neurogia and Transitory Psychoses. v. Kraft-Ebing.
 - 14.—Research in Comparative Cytology on Nervous System of Vertebrates. Giuseppe Levi.
 - 15.—Brain Bankruptcy of Business Men. C. H. Hughes.
- Quarterly Journal of Inebriety (Hartford, Conn.), July.**
- 16.—The Pauper Inebriate: His Legal Status: Care and Control. L. D. Mason.
 - 17.—Prevalence of Alcoholism and its Influence on Mortality. Geo. W. Webster.
 - 18.—Inebriety: Its Nature and Treatment. T. N. Kelynaek.
 - 19.—Pathology of Alcoholism. J. W. Grosvenor.
 - 20.—Work of the London Temperance Hospital. J. J. Ridge.
 - 21.—Report of Seventh International Congress on Abuse of Alcohol. Chas. H. Shepard.
- Pennsylvania Medical Journal (Pittsburg), July.**
- 22.—Address on Laryngology. D. B. Kyle.
 - 23.—Pott's Disease and its Modern Treatment. Stewart L. McCurdy.
 - 24.—Report of Case of Cerebellar Abscess. J. B. Crombie.
 - 25.—Treatment of Appendicitis. R. H. Gibbons.
 - 26.—Stricture of Rectum. William M. Beach.
 - 27.—To Make Clean the Hands and the Field of Surgical Operation with a Job. W. F. Jones.
 - 28.—Some Atypical Features of Certain of the More Common Nervous Diseases. Theodore Diller.
 - 29.—Importance of Early and Proper Attention to Slight Ailments of the Eye. G. W. Allyn.
 - 30.—Normal Movements of the Ocular Muscles. Joseph E. Willets.
 - 31.—Attitude of the Family Physician to his Patients in Respect to Opium. Louis J. Lautenbach.
- Archives of Pediatrics (N. Y.), August.**
- 32.—Methods of Instruction in Pediatrics. W. P. Northrup.
 - 33.—Pulmonary Hemorrhage Following Exploratory Puncture of the Chest for Fluid in Infants. Henry Koplik.
 - 34.—Transposition of Viscera with Cardiac Malformations. J. P. Crozer Griffith.
 - 35.—Separation of Bacteria from Milk by Natural Process. Rowland A. French.
 - 36.—Case of Congenital Diaphragmatic Hernia. Samuel W. Kelley.
 - 37.—Acute Tonsillitis in an Infant of Five Months: a Second Attack, Eleven Months Later. T. G. Brownson.
- Illinois Medical Journal (Springfield), July.**
- 38.—President's Address: Currents and Counter-Currents in Medicine. T. J. Pitner.
 - 39.—Stomatitis Materna. Jacob Schmuck.
 - 40.—A Newer Pathology of Epilepsy. Daniel R. Brower.
 - 41.—Journalizing the Transactions. George N. Kreider.
 - 42.—Vesicular Degeneration of the Chorion. Carl E. Black.
- Physician and Surgeon (Detroit and Ann Arbor, Mich.), July.**
- 43.—Physician, Priest and Patient. Rev. Edward J. Gleeson.
 - 44.—Contagious Cutaneous Diseases. Albert E. Carrier.
 - 45.—Some Excerpts and Deductions from Records of Gynecologic Cases. James N. Martin.
 - 46.—Technique of Alexander's Operation. Eugene Boies.
 - 47.—Gall-stone Surgery. Hal C. Wyman.
 - 48.—Operation of Shortening the Round Ligaments for Cure of Retro-displacement and Prolapse of Uterus. Howard W. Longyear.
 - 49.—Some Eminent Physicians of Ancient Times. Collins H. Johnston.
 - 50.—Sutural Closing of Visceral Wounds. Frank B. Walker.
 - 51.—Employment of Gloves as a Recent Factor in Operative Surgery. Schuyler Colfax Graves.
 - 52.—Diseases of the Cavities of the Nose an Important Factor in Producing Affections of the Eye. Albert E. Rulson.
- Richmond (Va.) Journal of Practice, July.**
- 53.—Surgical Complications of Typhoid Fever. Hugh M. Taylor.
 - 54.—Ectopic Pregnancy. John W. Long.
 - 55.—Two Cases Illustrating Necessity of Exploratory Incision. Stuart McGuire.
- Medical Bulletin (Phila.), August.**
- 56.—Primary Syphilis. John V. Shoemaker.
 - 57.—Notes From a Skin Clinic. E. S. Gans.
- American Journal of Surgery and Gynecology (St. Louis, Mo.), July.**
- 58.—Pathology and Therapy of Cancer, with Special Reference to Cancer of the Stomach. Augustus C. Bernays.
 - 59.—The New Treatment of Tetanus. Emory Laphhear.
 - 60.—Case of Senile Hypertrophied Prostate with Marked Urinary Obstruction; Bottini Operation; Relief. Later, Herniotomy, Sepsis and Erysipelas; Death; Pathological Specimens Showing Effect of the Bottini Operation. Bradford Lewis.
 - 61.—Radical Treatment of Congenital Hernia. James F. Bosch.
 - 62.—Report of Four Cases of Sarcoma Treated by Injection of Erysipelas and Prodigiosus Toxins. C. M. Nicholson.
 - 63.—Treatment of Endometritis. John C. Murphy.
 - 64.—Correction of Normal Divergence and Divergence by Position of the X-Rays. Heber Roberts.
 - 65.—A Visit to St. Bartholomew's Hospital, London, Eng. O. Beverly Campbell.
 - 66.—Report of Case of Orchidopexy Complicated by Hernia, with Presentation of Patient. C. M. Nicholson.
- Modern Medicine (Battle Creek, Mich.), July.**
- 67.—Classification of Hydratic Effects Used in Treatment of Disease. J. H. Kellogg.
 - 68.—Report of Case of Neurasthenia in which the Exercise Cure was Indicated. W. B. Holden.
 - 69.—Glycosuria and Albuminuria in their Functional Stages. David Paulson.
- Canadian Practitioner and Review (Toronto), August.**
- 70.—Preliminary Communication on the Spread of Tuberculosis. Wm. Goldie.
 - 71.—Notes on Treatment of Eczema. Graham Chambers.
 - 72.—Etiology and Diagnosis of Cerebrospinal Fever. William Osler.
- Kansas City Medical Index-Lancet, August.**
- 73.—Some of the Uses of Plaster of Paris in Surgery. N. A. Drake.
 - 74.—Etiology of Tuberculosis from Standpoint of Biology. Jos. Clements.
 - 75.—Scarlatina. Tinsley Brown.
 - 76.—Diarrhea in Children. C. N. Petty.
 - 77.—Abnormal Conditions in Labor. J. A. Sigler.
 - 78.—Review of Recent Advances in our Knowledge of the Anatomy and Physiology of the Nervous System. John Funton.
- Dominion Medical Monthly (Toronto), July.**
- 79.—Fractures. E. B. Smith.
 - 80.—Surgical Treatment of the Insane in Private Practice. Ernest Hall.
- Louisville Monthly Journal of Medicine and Surgery, August.**
- 81.—Charlatanism. Ap. Morran Vance.
 - 82.—Detachment of Retina. Dudley S. Reynolds.
 - 83.—Malarial Hemoglobinuria: More About It. Wm. Britt Burns.
 - 84.—Clinical Lecture. J. M. and S. W. Holloway.
 - 85.—Fractured Base, with Deafness, Tinnitus, Vertigo, Exophthalmos, Facial Paralysis, Mastoiditis; Operation and Recovery. J. A. Stucky.
- Medical Register (Richmond, Va.), July.**
- 86.—Evolution of Therapy. Simon Baruch.
 - 87.—Ectopic Pregnancy. J. W. Long.
- Clinical Review (Chicago), August.**
- 88.—Rectal Diseases in their Relation to Life Expectancy. Weller Van Hook.
 - 89.—Clinical Lecture on Diseases of the Heart, Lungs and Pleura. Joseph M. Patton.
 - 90.—Various Sources of Infection. Oscar J. Price.
 - 91.—Epilepsy; Locomotor Ataxia; Beri-Beri; Two Cases of Hemiplegia. Elbert Wing.
 - 92.—Sciatica. Henry M. Lyman.
 - 93.—Clinical Lecture on Obstetrics and Gynecology. Hemorrhage during Labor. Denslow Lewis.
- Indiana Medical Journal (Indianapolis), August.**
- 94.—Medical Dietetics. W. J. Fairfield.
 - 95.—Diagnosis of Cancer of Stomach by Chemical Investigation. Alois B. Graham.
- Medical Summary (Toledo, Ohio), August.**
- 96.—Cholera Infantum; Its Pathology and Treatment. D. H. Keller.
 - 97.—Difference Between Cow's Milk and Woman's Milk. Joseph Adolphus.
 - 98.—Clinical Notes on Equinia. W. R. D. Blackwood.
 - 99.—Examining Boards Illegal. J. W. Lockhart.
 - 100.—The Nervous System. Richards Gray.
 - 101.—Tetanus. Frank R. Brunner.
 - 102.—Case for Diagnosis. Geo. J. Monroe.
 - 103.—Treatment of Erysipelas. Milton F. Creel.
- Canada Lancet (Toronto), June.**
- 104.—Early Diagnosis of Pulmonary Tuberculosis with Treatment. Gilbert Gordon.
 - 105.—Vaginal Celiotomy, with Report of Cases. A. Laphorn Smith.
- Medical Age (Detroit, Mich.), August 10.**
- 106.—Nephritis without Albuminuria. Charles Goodwin Jennings.
 - 107.—Catgut in Abdominal Surgery. E. Copeland.
 - 108.—Moral Therapeutics. Rev. J. J. Purcell.
- American Practitioner and News (Louisville, Ky.), July 1.**
- 109.—Utility of Blood Clot in Treatment of Wounds. R. C. McChord.
 - 110.—Prevalence of Almetropia and Heterophoria, with Remarks on Eye-strain. A. Binet.
 - 111.—One Hundred and Thirty-two Gall-Stones Removed without Operation. Edward Speidel.

Northwestern Lancet (St. Paul, Minn.), August 1.

- 112.—Physiologic and Medical Treatment of Insomnia. John V. Shoemaker.
- 113.—Retroversion of Uterus. Franklin H. Martin.
- 114.—A Few Hints on Treatment of Urethritis. George R. Patton.

Pediatrics (N. Y.), August 1.

- 115.—Malaria in Children. Dr. Moscovoro.
- 116.—Enlargement of the Throat Tubercles. Henry Ling Taylor.
- 117.—Night Terrors in Children. Julius Morgenstern.
- 118.—Atypical Case of Measles. Frank H. Rowe.

Virginia Medical Semi-Monthly (Richmond), July 7.

- 119.—Physiologic and Therapeutic Effects of Static Electricity. G. P. Edwards.
- 120.—Ecclesiasties in Heart Affections in Children. Philip F. Barbour.
- 121.—Etiology of E. Uricæ Tubercles. Henry Ling Taylor.
- 122.—The Perineum; Its Injury and Repair. Edmond T. Baker.
- 123.—Permanganate of Potassium Injections in Treatment of Diarrhea and Dysentery, together with Internal Antiseptics. Lucien Lofton.

- 124.—Prevention of Infection During and After Labor. W. H. Taylor.
- 125.—Laminectomy: Plea for its Employment in Serious Spinal Injuries. Hugh G. Nicholson.
- 126.—Ophthalmic Clinical Contributions. David Webster.
- 127.—Mental Element in Treatment of Headache. Philip Zinner.

Medical News (N. Y.), August 10.

- 128.—Bacillus Intestinalis as the Cause of Yellow Fever—A Reply to Professor Sanarelli. George M. Sterlberg.
- 129.—Some Fallacies in the Modern Treatment of the Nose and Throat Diseases. Dunbar Roy.
- 130.—Importance of a Knowledge of the Phylogenetic Development of the Child in Prevention of Children's Diseases. E. Stuver.

Cincinnati Lancet-Clinic, August 10.

- 131.—Calomel. C. J. Finck.
- 132.—A Few of the Clinical Uses of Liquid Air. C. T. Pearce.

Boston Medical and Surgical Journal, August 17.

- 133.—Address in Surgery. Alexander Ogston.
- 134.—Value of Pulse in Diagnosis and Prognosis. Henry Jackson.
- 135.—Philosophy of Sickness. Thomas F. Harrington.
- 136.—Improvements in Army Medical Service, Suggested by Experience in the Late War. William H. Devine.
- 137.—Unusual Diastolic Murmur, with Autopsy. R. Edes and R. Pearce.

New York Medical Journal, August 10.

- 138.—Localized Tuberculosis of the Intestine, with a Report of Seven Operated Cases. W. J. Mayo.
- 139.—How Far is Retroversion of the Uterus Responsible for Some of the Functional Neuroses? Miriam Gardner.
- 140.—Report of Four Cases of Epidemic Cerebrospinal Meningitis, with Special Reference to the Value of Lumbar Puncture as a Means of Diagnosis. José A. H. de Waelekinck.
- 141.—Abdominal Injuries due to Blunt Force. Report of Two Cases. Russell S. Fowler.
- 142.—Hodgkin's Disease. With Report of Cases. E. G. Wood.
- 143.—Ophthalmic Clinical Contributions. David Webster.
- 144.—Case of Acute Alcohol Poisoning in a Child. Maurice A. Walker.

Medical Record (N. Y.), August 10.

- 145.—A Type of Tropical Fever. L. L. von Wedekind.
- 146.—On the Rôle of Primary and Secondary Osteoplastic Surgery in the Treatment of Complicated or Compound Fractures of the Extremities. Thomas H. Manley.
- 147.—Angioneurotic Edema: with a Report of Four Cases. Herman B. Baruch.
- 148.—Use of Quinin in Malarial Hemocholuria. S. L. J. Stegall.
- 149.—Concealed Menstruation. A. Brothers.
- 150.—Cutaneous Electrolysis. Fred. J. Levisour.
- 151.—Facial Eruptions due to Intraaural Disease. Carl Seiler.
- 152.—Personal Observation on an Unusual Case of Labor. P. T. O'Connor.

Medical Review (St. Louis, Mo.), August 10.

- 153.—Successful Treatment of Chronic Constipation. W. H. H. King.

Maryland Medical Journal (Baltimore), August 10.

- 154.—Surgical Complications of Typhoid Fever. Hugh M. Taylor.

Philadelphia Medical Journal, August 10.

- 155.—Relation of Local Meteorologic Conditions to the Influenza-epidemic in Philadelphia, Winter of 1888-89. Howard S. Anders.
- 156.—Conservative Gynecology. S. C. Gordon.
- 157.—Report of Case of Complete Monocular Blindness Following an Injury to the Head, Attended by Full Restoration of Vision. William Campbell Posey.
- 158.—Typhoid Fever with Death in One Week from Onset; Autopsy Findings. William Fitch Cheney.
- 159.—A Case of Diabetes. Henry L. Eisner.
- 160.—The Twenty-four Hours' Urine in Cystic Kidney, with Observations on an Aëro Soluble Albumin. Clifford Mitchell.

AMERICAN.

- 1. Phantom Tumor.—After discussing the literature briefly and their supposed causes and nature, Fitz shows that in recent literature reports of phantom tumors are rarely to be found, while a large number of cases have been published closely simulating this condition, in which the tumor is supposed to be permanent enlargement of the colon. The object of his paper is mainly to show that an increase of the size of the colon occurs at times without any organic or mechanical cause other than fecal accumulation, and that this may be sufficient to

produce discomfort, demography, and even death. These idiopathic dilatations of the colon have been described in a recent article by Treves, who thinks that they are due to actual mechanical obstructions in the terminal part of the bowels. Nevertheless, some recent examinations have not found such stricture, and Fitz thinks it would be more in accordance with the facts to recognize two types, one due to a defective development producing its disturbances from birth, and the other presumably those in which defective expulsive power is the prime factor. Those that have been observed in adults are connected with the same general conditions as in this last variety of infantile dilatation. Fitz reports a case which seems to him to support his view that chronic phantom tumor is rather due to dilatation by gas or feces, and in which relief was only obtained by laparotomy and excision of the dilated sigmoid flexure. In this operation he followed the example of Treves, who had similarly relieved a patient from the effect of congenital malformation of the lower bowel.

2. Typhoid Cholecystitis.—Da Costa notices the seriousness of the complication of inflammation of the gall-bladder in typhoid and thinks that recovery may occur more frequently than has been generally supposed to be the case, our conclusions having been derived only from the severer cases. He reports three cases in which recovery occurred, two in soldiers and one in a child 8 years old, in whom the symptoms were quite severe. He had never seen the pain so marked as in this last case, and vomiting was incessant and jaundice pronounced. He was just on the point of calling in a colleague to perform an operation when improvement began and the child recovered. The treatment in the cases given consisted for the most part in the administration of fractional doses of calomel frequently repeated to combat the nausea, and the local use of ice and poultices. Counter-irritation with turpentine stupes and iodine may be used. Morphine hypodermically may be necessary for the pain, and, as in his recent case, the circulation may have to be supported by hypodermics of strychnin and digitalis.

3. Influence of Diet on Urinary Inflammation.—The experiments of Taylor were performed on himself, and eight separate diets were tried, each a period of six successive days: 1. A mixed normal diet with the avoidance of sweet-breads, liver and brains. 2. Diet of sweet-breads, no other animal proteins being taken, but bread and non-proteid vegetables as usual. In this there was considerable systemic disturbance, diarrhea, etc., subsiding, however, toward the close of the period. 3. A heavily proteid diet. 4. Purely vegetable diet without milk or eggs or any animal fats in cooking. He incidentally remarks that it is these latter that are the salvation of so-called vegetarians; without them the diet is bulky and revolting. Naturally a large amount of proteids in vegetable form will be required. 5. A milk diet. 6. A nitrogenous free diet, consisting of sago, sugar and butter. In this there was loss of weight, constipation and distinct loss of strength. After a long period of rest, Diet 7 was tried, a normal one with the addition of three cups of coffee and two bottles of beer, and 8, the same with a little more coffee and no alcoholics. In all experiments except the sixth, the total urinary elimination of nitrogen corresponded with the intake. This nitrogen represented the common proteid metabolism of the body, and had no constant relation with the nucleic metabolism, which is a lower specialized process, causing a small output of uric acid and purin bases. The common nitrogenous metabolism is a process of high specialization and produces a larger output of nitrogen in the form of urea and ammonia. Keeping these distinctions in mind, and that they may be decreased or increased independently, the worthlessness of the ratios based on the comparison of their results, like the urea-uric acid ratio is obvious. The urea, during the first experiment, averaged 90.8 per cent.; it fell to 82.3 per cent. on the abnormal sweet-bread diet; on the heavily proteid diet it was 90.1 per cent.; on the vegetable, 92 per cent.; 94.3 on the milk diet; 82.4 on the carbonous diet, and on the two last diets it was respectively 89.6 and 91.3 per cent. The average of the physiologic diets was therefore 91.3 per cent. of the total nitrogen, which is about 5 per cent. above the ordinary figures. He attributes this, however, to an individual peculiarity. The uric acid was lowest on the milk diet, 0.284 g. per diem; very little less on the carbonous diet, 0.273; on the normal, 0.364, on the heavily proteid diet, 0.456, and on the purely vegetable

diet, 0.462 g. The average, for the three days without the diarrhea, of the sweet-bread diet, 1.260 g., he thinks, represents the output most accurately, the excess being due to the large amount of nucleins in sweet-breads. When coffee and beer were added to the normal diet the uric acid rose to 0.721 g., just double the amount without these. He attributes this mostly to the coffee. The failure of the heavy meat diet to increase the uric acid is contrary to the English theories, but muscular tissue is not rich in nucleins, and it is only from nucleins and purin compounds that uric acid is derived dietetically. The large amount in vegetable diet is a heretical performance, but easily accounted for by the peas and beans which must form so large a part of a vegetable diet. The average of purin bases eliminated in the normal diet (Experiment 1) was 0.0249. During the sweet-bread diet there was but little change. Apparently all the nucleins in this diet passed into uric acid. In the heavily proteid diet there was a slight reduction; in the vegetable diet a still greater one. The first decided change was seen in the milk diet, 0.0112 g., and on the carbonous diet of the next period (6), the bases fell to 0.0066 g. As soon as coffee and beer were added, as in 7, they rose to 0.0544 g. a day, and in Experiment 8, without beer, even a little higher. Obviously caffeine has been eliminated as a purin base. These figures confirm Krueger and Salomon's findings, who in a study of the purin bases obtained from the human urine found that less than one-third came from metabolism, while the other two-thirds belonged to the homologous series and were derived from xanthins ingested with the diet. Taylor's notes on the ratios between the uric acid and the bases are interesting, but not specially valuable. The ratios of the total nitrogen to the purin nitrogen are subject to about the same considerations as those of the urea uric acid ratio. They depend on distinct sets of conditions. He wishes to emphasize the distinctions between the common nitrogenous and the nucleic metabolisms by these facts. The experiments are to be considered physiologic, and have no special bearing on the physiology of gout in his opinion.

4. **Pyocyanus Bacillæmia.**—Brill and Libman report a case of septicaemia confirmed by blood culture in which the staphylococcus invasion was followed during life by a pyocyanus invasion, also determined by the blood. They review the cases in literature and find that this is the second on record in which the pyocyanus bacillus was found in the blood during life in such a way as to exclude all doubt, and the first case in which it was found in an adult.

6. **Gastric Ulcer.**—The statistics of gastric ulcer in the Massachusetts General Hospital are carefully analyzed by Greenough and Joslin, with the following general conclusions based on the study of 187 cases of gastric ulcer occurring in the Massachusetts General Hospital, 1888-1889. 1. Gastric ulcer is more frequent in Boston than in Chicago, Baltimore, Denver or San Francisco. 2. It is five times as common in women as in men. 3. The average age in men is 37 years; in women 27. 4. Hemorrhage was present in 81 per cent. of the cases. It caused the death of 17 per cent. of the male patients, but only 1.27 per cent. of the females. No woman under 30 died of hemorrhage of gastric ulcer during this period. 5. The blood was that of a chlorotic type of anemia. 6. Perforation occurred in 3.2 per cent. of the cases, and none of these patients left the hospital alive. 7. Of 114 patients 80 per cent. were discharged cured or relieved, but at the end of an average period of five years only 40 per cent. remained well. The mortality at the same time—due to gastric disease—was 20 per cent. Among the males it was 30 per cent., with the females 9 per cent. 8. The excessive mortality of ulcer among men, its occurrence in life a decade later than in women, and the absence of fatal cases of hemorrhage in females, point to a difference of the ulcer in the two sexes. 9. The mortality of 8 per cent., and the failure of medical treatment to effect a lasting cure in 60 per cent. of the patients indicates the need of surgical intervention in other than emergency cases of this disease.

11. **The Varying Type of Paresis and Ataxia.**—In an article last year, Mendel called attention to the changes in the characteristic features of paresis as distinguished from the classic descriptions of early writers and those generally observed two or three decades ago. He notices a marked increase in the demented type, a greater frequency of remissions and an apparent arrest of symptoms, its greater frequency in the fe-

male sex and its appearance in the young. Nowadays, he says, we make a diagnosis by the pupillary immobility, altered knee signs, analgesia of the legs, changes in disposition, speech and writing. Hughes says that these changes in the type of paresis are beyond question, and asks how we are to account for them. He believes that it is by the precocity and more general diffusion among all classes of people of business ambitions and schemes, excess and overstrain, the spread of intemperance and the constantly increasing rush of modern life.

12. **Legal Disabilities of Natural Children.**—Spitzka, in a curious article with a large number of interesting historic notes, maintains that the legal disabilities of bastards are actually justified, notwithstanding their apparent hardships, by social and historic conditions. His article gives a large number of instances where illegitimacy has been an evil to mankind as well as to the unfortunates themselves.

16. **The Pauper Inebriate.**—Certain statistics of inebriety and crime are discussed by Dr. Mason, and after general consideration of the social and legal status of the habitual drunkard he takes up the special points as to the care and treatment of inebriates: 1. Pauper inebriates, he holds, should be recognized as the wards of the state, and their care and maintenance should be provided for. 2. They should be isolated as a distinct class as the insane and criminal are isolated. Neither the asylum nor the prison is the proper place for them. They should be sequestered by law for a long term, at least two or three years, and the directors of the institution should have the privilege of giving tickets of leave or parole, as in the insane asylums. The asylum or place of restraint should be a strictly remedial and reformatory institution, with large tracts of land and means for educating the inmates in various manual trades and occupations. The clerk or bookkeeper who has become an inebriate will find, as a rule, serious difficulty in regaining work, but if he has learned a trade comparatively few questions will be asked. The inmates should be graded and classed. Dr. Mason thinks that well-established state institutions for the care of such inebriates would greatly decrease the number of insane annually treated in the state institutions.

17.—See abstract in JOURNAL, June 10, p. 1322.

19. **Pathology of Alcoholism.**—Grosvenor, after discussing in detail the known facts in regard to alcohol and its effects on the body, concludes as follows: Scarcely any disease, perhaps none, exerts so extensive a pathologic influence as alcoholism on the organs, tissues and fluids of the body. The paralyzing effects of alcoholism extend throughout the nervous system from its periphery. This paralytic effect is seen not only in the body but, in the intellect and moral sense. The principal degenerations in alcoholism are fatty, fibroid and atrophic. Fat is substituted for normal tissues; alcohol withdraws water from the tissues, and thus they become dry and hardened, and at length assume a fibroid character; through lack of proper nutrition the cells become shrunken and atrophied. By these degenerations the anatomic integrity of the organs is destroyed, partially or wholly, and their functional activity is impaired. Thus the whole system suffers and in time becomes a wreck. Alcohol has been aptly termed "the genius of degeneration." So profound and widely disastrous are the pathologic results of alcoholism on the individual and the race, and believing the disease may be placed properly in the list of preventable diseases, it is his firm conviction that it is the bounden duty of the medical profession, sanitarians, and the boards of health to use their utmost efforts for its complete eradication.

23. **Pott's Disease and Its Modern Treatment.**—After presenting the various methods of the treatment of Pott's disease, McCurdy outlines the following rules:

1. For the mechanical support of Pott's disease below the seventh dorsal vertebra, the plaster-of-paris jacket of Sayre is the best support now known.

2. It should be worn day and night, from the earliest incipency, until all active symptoms have subsided and convalescence is well advanced.

3. During convalescence the Taylor brace is to be preferred.

4. For cervical diseases, the brace shown makes ample support.

5. For upper dorsal disease the plaster-of-paris jacket, with anterior chin shelf, is to be preferred.

6. Finally, when cases are placed upon proper treatment

early, and such treatment is continued throughout the entire course of molecular disintegration, absorption and reproduction, cases should recover without deformity, in all variety of disease, except in upper seventh dorsal vertebra, and in this region with a minimum of deformity.

24. Cerebellar Abscess.—Crombie reports a case in a girl aged 11 years, who had acute inflammation of the middle ear with symptoms indicating brain trouble. As long as she lay on her right side she felt no pain nor distress and had a good appetite, but turning on her back or left side, or sitting up caused intense dizziness and vomiting. Her temperature was normal, pulse 78, pupillary reactions correct, visual field normal and no ocular paresis. There was slight edema about the right eye and the urine was strongly albuminous. Later the edema became more marked about the eye and the right side of the face, so that the eye could not be widely opened on account of it, and was thought to be more protruded than the left. She finally died of respiratory failure after having had several convulsions, apparently hysterical. The post-mortem showed edema of the scalp, an excess of fluid in the cerebral cavity, an abscess containing about one-half ounce of greenish pus in the anterior part of the base of the cerebellum, terminating at the point of adhesion of the temporal bone. On the inner side of this abscess, communicating with it, was another about half as large. In the posterior inferior lobe was a third abscess the size of a walnut and a fourth and smaller abscess lay mesial to the third. These latter did not communicate with each other nor with the first. Remarkable on the diagnosis, the Doctor remarks that if they had ventured to operate they would have opened the mastoid and found it healthy. They might have punctured the sinus with a like result, and explored the attic and tympanum without finding lesions, and then operated on the cerebellum at the usual site to evacuate one abscess and leave three.

25. Treatment of Appendicitis.—Gibbon's paper is a strong plea for operative treatment of appendicitis. As regards the operation, he prefers Dr. McBurney's incision as being surgical as well as anatomic in every sense.

26. Stricture of Rectum.—The newer methods, according to Beach, have made the rectum no longer an unknown region. Its stricture requires early recognition and the normal anatomy must be understood, but more especially the rectal valves demonstrated by Dr. Martin of Cleveland. Many so-called strictures of the rectum are hypertrophied valves and can be treated in a radical manner. He believes that the use of the proctoscope for complete inspection of the rectum should become the routine practice as it is most important in the diagnosis and location of stricture of the abdominal rectum. The rectal valve must be considered in the pathology of semilunar, annular and tubular strictures, and obstipation is the result of semilunar stricture, and can be cured by valvotomy.

27. Cleaning the Hands.—Forbes recommends a contrivance which he called a Job, consisting of three ounces of curled horse hair rolled up into a flat oval mass. He claims that this thoroughly cleanses the skin by rubbing, and is easily cleansed with boiling water before and after each surgical operation. Kept in alcohol, it is ready for use in the hospital or elsewhere. He called it a Job for, like Job of old, having passed through all the tests, its vitality and integrity remain unimpaired.

28. Atypical Features in Common Nervous Diseases.—Diller briefly calls attention to two or three leading symptoms of apoplexy, tabes and paresis. In the former disease, cases unattended by hemiplegia are not so rare, and the text-books that seem to imply that this symptom is constant present an incomplete picture of the disease. Sudden unconsciousness in persons over 50 years of age, with flushed countenances, is probably due to apoplexy and should be looked into. Probably many of the slighter apoplectic attacks are mistaken for fainting spells, and the reasonable prophylactic measures are neglected. The symptom of staggering, so characteristic of tabes, is really much less conspicuous or absent in many cases. Diller believes that failure to recognize tabes is more often due to the absence of ataxia than to any other one symptom, and it would be a safe rule to take tabes into consideration in any patient complaining of pains in the legs, arms and epigastric region in which the cause is not apparent, and the Argyll-Robertson pupil and epigastric pains in combination are very characteristic of

this disease. Staggering has frequently led to the diagnosis of tabes where it did not exist. Delusions of grandeur suggest paralytic dementia, but it is a great mistake to depend on this symptom. They are probably absent in the majority of cases at certain stages of the disease, and are less common now than in years gone by.

29. Slight Ailments of the Eye.—The chief point of Allyn's article is the fact that the eye is never out of danger until perfectly well. The slightest injury is not a trifling matter.

30. Normal Movement of Eye Muscles.—The object of Willett's paper is to advocate the necessity of correcting not only the errors of refraction but all lack of ocular muscular balance in neurasthenic individuals. Individual cases are not to be judged by the appearance of the deviation, as a thorough diagnosis can not be reached until we determine which of the many complex functions of the neuromuscular apparatus is deranged. It is an important fact that while the defective actions of other organs are readily apparent, often the ocular defects are not, the patients themselves having no knowledge of their existence. The constant unconscious excitation of the muscle nuclei to overcome this masked, untreated defect, affords a leak or consumes the necessarily small amount of nerve force generated, and the treatment instituted is generally deflected unless these errors are corrected.

32. Instruction in Pediatrics.—After noticing the importance of pediatrics as a study for medical students, Nothrup maintains that didactic lecturing is important and can not be superseded. Clinical instruction necessarily requires no argument as to its value. He advises section teaching by competent assistants in special departments or wards of children's hospitals, and as apparatus he believes in the use of the stereopticon. In conclusion he speaks of another requisite, that of recitation.

33. Pulmonary Hemorrhage Following Chest Puncture.—Koplik considers that the introduction of the exploring needle should not be considered as an entirely harmless procedure, though he has in the past so considered it. He reports several cases in which puncture was made and no fluid found. Where the needle enters directly into the substance of the lung, and causes a wound of a blood-vessel, hemorrhage results, and while in a child the puncture is not sufficient to overwhelm the air-passages, it is a sufficiently alarming symptom. He never punctures more than once at a sitting, after making certain of the exact place where fluid is likely to be found. It should be made with caution on the left side, either behind or in front, in the vicinity of the heart and great vessels.

35. Separation of Bacilli from Milk.—Freeman finds that with the rising of cream in milk, 99 per cent. of the bacilli are found in the cream, and sterilization of the cream, removed from the milk, the same being afterward restored, makes a comparatively germ-free milk.

38. See abstract in JOURNAL, May 27, p. 1172.

40. Ibid.

43. Physician, Priest and Patient.—This article gives the views of a Roman Catholic priest on ethical questions of medicine and the relations of the physician to the clergy. The physician can aid the priest by performing baptism in emergencies or giving notification of danger so that the priest may be called in, etc. He also dwells on the iniquity of abortion and means to prevent conception.

44. Contagious Skin Diseases.—Carrier notes some of the more common skin diseases that may be due to contagion, not merely those caused by hygienous germs, such as trichophyton, microsporion, and achorion, and the animal parasites, but also various pustular affections such as syphilis, eczema, sycoosis, acne, impetigo, etc. As regards eczema, it has not generally been considered contagious, but Unna's theory of a germ infection has been adopted by many dermatologists, especially for the seborrhoeic forms, and the author favors this idea and accepts it to the full extent claimed by Unna. Acne has been claimed by late investigators to be caused by a germ, but he holds this still unproved. He says in conclusion: 1. There are many known contagious skin diseases in which a proper prophylaxis is not exercised to prevent invasion of healthy persons. 2. There are many diseases of the skin that from their mode of onset and behavior are so similar to known contagious

affections, that the same means should be used to prevent their spread. 3. Pustular lesions, no matter in what disease they occur, must be regarded not only as antioinculcable, but as capable of developing similar lesions when transferred to healthy individuals.

45. **Some Gynecologic Deductions.**—Martin's paper consists of certain practical deductions from his experience in gynecologic work. He adds his testimony in favor of the use of warm saline solution after or during operation, when shock is feared, both by injection into the veins and tissues, and also by enema. A quart of this solution left within the abdomen has a very valuable effect in reviving the patient and stimulating the kidneys. He has had but 1 per cent. of postoperative hernias after abdominal operations, and he attributes this to the precautions taken the first month after operation, and the advice given patients. Patients are not allowed to sit up for three or four weeks, and the adhesive strips and outer bandages are worn for two weeks longer, and after that the patient is not allowed to do any heavy lifting, jumping, etc., for a year or more, and must wear a well-fitting abdominal supporter. He thinks that many retrodisplacements of the uterus are due to allowing the patient to lie, on the back too much after labor, and suggests advice as to changing position in these cases. Another cause of trouble is the lack of care after abortion, which should be as great as after labor at term. Still another cause of uterine disease is the lack of aseptic precaution in the use of aseptic uterine stems. He notes the special connection between neglected perineal laceration and irritable bladder, and insists on the importance of early perineorrhaphies. Other subjects noted in this article are: malignant disease of the ovaries, which is more frequent than was formerly held to be the case, and the necessity of operation; uterine fibroids, and cancer, the latter of which he attributes largely to cervical laceration and erosion; and deficient menstruation occurring in apparently healthy young women of sedentary habits.

47. See abstract in *JOURNAL*, May 6, p. 995.

48. *Ibid.*, April 8, p. 761.

50. **Sutural Closing of Visceral Wounds.**—Walker describes the purse-string suture recommended by Dawbarn for the closure of bullet wounds of the stomach and intestines, consisting in encircling the wound with a series of continuous sutures, each of which transfixes the serous and muscular coats, but not the mucous coats, the encircled tissue being then inverted and the knot completed. This is especially adapted to wounds of not over one-half inch diameter, and preferably in thin-walled viscera. Another method is the Czerny-Lembert suture, which has no superior for the closing of large visceral wounds, the continuous suture being speedier than the interrupted, but it is advisable, to avoid distortion, to employ both. In making an anastomosis of a hollow viscus, at least four separate threads should be used. Supposing an entero-anastomosis is to be made, let four Lembert sutures be formed by four separate threads, one inserted into both portions of the gut at the mesenteric junction, a second into the wall opposite the mesentery, and the other two into the lateral wall at points equidistant from the first two. Let the knots be so tied as to leave a long and a shorter end on each thread. The quadrants thus formed may then be approximated, one after the other, by continuous sutures, using for this purpose the long ends of the thread, which are finally tied to the shorter ends respectively next adjacent. A wound of this character, thus encircled by two tiers of Lembert sutures of sterile catgut introduced by small smooth needles will be found to be accurately closed and, barring complications, will afford a favorable prognosis.

51. **Gloves in Surgery.**—The advantages and disadvantages of cotton and rubber gloves are discussed by Graves, who rather favors the more general use of the latter. As to the general question as to the value of gloves, he has no doubt. They have come to stay, and, as a step in surgery, rank with the use of sterilized instruments and dressings.

53.—See title 154.

54. See title 87.

57. **Skin Clinic.**—Gans considers dermatitis venenata, paresthesia and urticaria.

59. **New Treatment of Tetanus.**—After going over the literature of cases of tetanus treated with antitoxins, both in the ordinary way and by intracerebral injection, Lanphear

concludes that: 1. In wounds of such character that the onset of tetanus is feared, preventive injection of tetanic antitoxin is advisable. 2. When symptoms of acute tetanus arise, hypodermic injections of 10 c.c. or more of serum should be given every six to twelve hours. 3. As early as possible a competent surgeon should be called to trephine, under strictest aseptic conditions, and inject 6 c.c. of concentrated serum into the brain. 4. In tetanus neonatorum appropriate doses should be given subcutaneously, and into the brain substance through the fontanelles. 5. Combined with the serum treatment should be the free use of those sedative agents which have been found of benefit prior to the introduction of serotherapy.

61. **Radical Treatment of Congenital Hernia.**—Roach insists on the importance of early treatment of congenital hernia, and advocates the Bassini operation as the most suitable for this purpose. He expresses his surprise that so many people go on through life wearing a truss with the continual possibility of a strangulation occurring, instead of permitting an operation to give them relief and comfort for the rest of their days.

62. **Sarcoma Treated by Toxins.**—Nicholson briefly reports four cases of sarcoma where the diagnosis was confirmed by skilled pathologists, and where operation was impracticable on account of the extent of the growth, in which he has used the erysipelas and prodigious toxins. In three of the cases the results were good. In one there was some reaction after injection, but no change in the growth.

63. **Endometritis.**—Murphy's article treats of the management of endometritis, and advocates as a general practice Munde's method of cervical dilatation, curetting and packing, with subsequent treatment with nitrate of silver or iodized phenol, and with hot vaginal douches throughout the treatment.

64. **Distortion of the Skiagraphs.**—Remarking on the occurrence of distortion by position and normal distortion of the image of the X-ray, Roberts insists on the importance of the use of Dennis' fluorometer for their correction. It consists of right-angle devices impervious to X-rays, together with wooden supports and an adjustable table, and it provides: 1, a perfect shadow when thrown on a screen or sensitive plate; 2, elimination of the distortion resulting from radiant energy known as the X-rays; 3, the normal distortion and distortion by position having been eliminated, the fluorometer provides an accurate cross-section of the body and supplies an absolutely correct right-angle at the intersection of the lines of which the foreign object will be found in the body. He adds, as a final conclusion, that without the evidence of a fluorometer having been used, clearly shown by its own shadows in the radiograph, no X-ray picture should be admitted in court.

68. **Exercise Cure in Neurasthenia.**—Holden reports a case of neurasthenia, with a possible traumatic element, treated by regulated exercise and nutrition, which resulted in a complete cure. He points out that the rest cure in such a case as this would have been decidedly bad treatment.

70. **Spread of Tuberculosis.**—Goldie has repeated some of the experiments of Flugge as to the dissemination of bacteria by coughing. Using a room where tests showed the bacillus prodigious was lacking, he washed his mouth with a culture and gave twelve coughs. Prepared plates were exposed in different parts of the room, at the end of five, ten and fifteen minutes for five minutes each, and all the plates showed varying numbers of colonies, thus demonstrating that a single act of coughing might so infect a room in every part that cultures could be produced from the air. In concluding his paper he calls attention to the risk of surgeons infecting wounds, especially in case they have any disorder in the mouth.

72. See abstract in *JOURNAL*, July 8, p. 98.

81. See abstract in *JOURNAL*, May 27, p. 1175.

87. See title 54.

89. **Lecture.**—Patton here considers hydrothorax, hemothorax, chylothorax and tumors of the pleura.

95. **Cancer of the Stomach.**—Graham concludes, after an analysis of the best established physiologic and chemical views in regard to the diagnosis of cancer of the stomach by chemical means, that careful investigation has brought us no pathognomonic symptoms, that we must consider carefully all the circumstances of the case in order to make a proper diagnosis, and that experience in the handling of cases has not yet been superseded by ready-made tests that make a diagnosis for us.

104. **Early Diagnosis of Pulmonary Tuberculosis.**—Gordon calls attention to the importance of early diagnosis, if possible, in pulmonary tuberculosis, and remarks on the difficulty, noting that the microscopic methods were utilized over thirty-six years ago when the elastic trabeculae were considered diagnostic by Clarke and others. The fact that the disease is curable if taken early makes this a matter of great importance, and though early symptoms may not be of very much use, he alludes to those that may serve to some extent as guides. An inherited tendency should put the physician on his guard. Pain may often be complained of before any other sign. A slight rise of temperature, especially in the afternoon, may exist early and be very important. A cough without expectoration and any general failure of strength, or loss of weight or appetite should at once lead to a careful physical examination. Bronchophony is also one of the early signs. Hemoptysis will generally be preceded by some of these other signs, and he alludes to the use of the X-ray as promising in this regard. The general treatment seems to be resolved into the use of fresh air and the most favorable hygienic surroundings. He speaks well of the use of creosote, however, in his own practice. As regards the location of the health resort for consumptives, he gives figures from the *Practitioner* of June, 1898, which seem to show that high altitudes give the best results. He favors compulsory notification as of great importance, enabling health officers to locate cases and to disseminate information as to precautions, disinfection, etc., admitting, however, that it may produce hardships in individual cases.

106. **Nephritis Without Albuminuria.**—Jennings reports two cases of nephritis accompanied with an abundant discharge of casts, but without albuminuria, and discusses the literature of the subject. From the writings of these authorities he finds it shown: 1. That very rarely chronic parenchymatous nephritis has been observed in which albumin and casts have been absent from the urine for certain periods of time. 2. That chronic interstitial nephritis is characterized by a urine in which albumin and casts appear in smaller quantity, and that frequently both disappear for short or long periods of time. 3. That the appearance and disappearance of casts and albumin in nephritis are synchronous—in other words, that the pathologic changes that cause albuminuria and cylindruria are identical. Simon is particularly emphatic on this point.

110. See abstract in *JOURNAL*, June 10, p. 1320.

112. See abstract in *JOURNAL*, July 8, p. 101.

114. **Urethritis.**—Patton gives his ideas as to the treatment of urethritis, which in most cases may be considered as specific. He thinks that local remedies combined with ordinary systemic tonics are most effective, and the so-called specifics have little real curative value. He remarks on the unreliability of the subjects of this disease as regards their statements or their co-operation in the treatment. A prescription which he has used largely for hospital and private practice as an injection is: Aque picis liquide, 16 oz., and zinc oxid, q. s., triturated together in a mortar until the solution is neutral to test-paper, and then filtered. He has used before, in many cases, a solution of 4 grains of permanganate of zinc in a quart of hot water. If this does not succeed after seven days he uses the tar prescription. As regards chordee, a drink of a pint of any warm demulcent tea containing 30 grains of nitrate of potash will almost invariably prevent its occurrence. A well-fitting suspensory bandage is a very important element in the treatment, especially in the prevention of epididymitis.

115. **Malaria in Children.**—Remarking that the subject is not less important from a social than a medical point of view, since malaria not only increases mortality but produces mental and physical deterioration in the growing children, Moncorvo gives some of the results of his experience in Rio Janeiro, in a total of 5000 cases of malaria in children of various ages. He selects the 513 cases occurring during the years 1891 and 1892, and finds that it is most frequent during the first year of life. His experience in this respect does not vary greatly from that of other observers. He upholds the view that it may exist in the prenatal condition, and reports several cases in which children were born with enlarged spleens and symptoms of paludic intoxication. He also finds that in his cases the majority were boys, and more than half came from the working class quarters, where the sanitary conditions were least favorable.

The greatest number of cases occurred during the first three months of the year, which, it must be remembered, is midsummer in that hemisphere. The paper is to be continued.

117. **Night Terrors.**—Morgenstein reports a case of a child who suffered greatly from night terrors, and he found that threats of the devil coming to take him away were the basis of these disturbances. The moral is that mothers should not frighten their children when they misbehave. There is generally in these cases some gastro-intestinal derangement co-existent with the attacks and tonics and aperients, with light wholesome diet, will generally suffice for medical treatment.

120. See abstract in *JOURNAL*, June 3, p. 1254.

122. **Repair of Perineum.**—Baker describes an operation claimed as devised by himself for repairing perineum rupture. He passes the tenaculum through the mucosa of the ruptured vaginal wall, in the median line, about 1½ to 2 inches above the posterior commissure. Then with a scalpel he makes an incision from the tenaculum downward and outward on both sides to a point where the parts are normally approximated. Next he makes an incision connecting these two points, thus describing a triangle, then denudes the enclosed space. Then, using silver sutures, he passes the first from either side of the denuded surface near the apex, bringing it out on the opposite side not too close to the margin, passing downward to the base with as many sutures as are necessary, being careful to allow a sufficient margin for a firm hold, and a flat surface for twisting the sutures. All the sutures are wholly within the vagina. The ends are left long enough to pass through a rubber tube to prevent laceration of other parts. Two or three superficial silk sutures are taken in the median line, which is the base of the triangle, the parts cleansed, dried and dressed antiseptically and bandages applied. He claims perfect success in the operation.

123. **Injections in Diarrhea and Dysentery.**—Lofton recommends the use of high injections of 1 to 6 per cent. solution of permanganate of potash in the treatment of diarrhea and dysentery. He gives these injections in the dorsal or Sims' position, with the pelvis elevated, the amount varying according to the patient's condition and the irritability of the gut. Injection is given very gently with a fountain syringe, and followed by gentle massage of the abdominal viscera over a dry heated flannel or woolen garment. Then the injection is removed and after fifteen or twenty minutes repeated with a milder solution, which the patient is instructed to retain as long as convenient. He cautions against the use of permanganate in cold water, as it will create intolerable tenesmus. The water should be as hot as can be easily borne. He reports two cases which he thinks illustrate the value of this method.

126.—See title 143.

127. **Mental Element in Treating Headache.**—Dr. Zener's paper is one presented in the symposium on Headache, before the Section of Neurology and Medical Jurisprudence at the recent meeting of the Association. He points out that the great influence of the mind in the cure of disease is becoming more and more recognized in the medical profession: "That knowledge is the key to understanding how sacred shrines and relics, new 'systems,' and vaunted remedies have effected and still effect, apparently marvelous cures, and succeed in imposing to such a degree on a credulous public. We are learning in the same manner, and this is of greater consequence to us, that many of the drugs, and other therapeutic agencies applied to the treatment of disease, often act chiefly through mental impressions. This influence of the mind is not limited to any one class of diseases. It is often observed, sometimes even marked, in organic disease, especially in the amelioration of some of its manifestations. Yet its greatest display of power is naturally to be expected in functional, and above all in nervous, diseases." He reports two cases of brain tumor in detail. The other papers of the symposium will appear in an early issue of the *JOURNAL*.

128. **Bacillus Icteroides in Yellow Fever.**—Sternberg replies, in his article, to Sanarelli's recent communication. He calls attention to some misunderstandings which he thinks Sanarelli has shown of his own statements and gives his reasons for not admitting the specific rôle of the latter's bacillus. He considers it a pathogenic saprophyte occasionally present in the blood and tissues of yellow fever pa-

tients, but its etiologic relation has not yet been established. He is open to conviction if his views prove erroneous.

129. See abstract in *JOURNAL*, May 6, p. 997.

131. **Calomel.**—Funch calls attention to calomel, which he considers a veritable king and giant among remedies, unique in its own peculiar action, irreplaceable by any other as a sedative eliminative, but brought almost into disrepute, limited to the treatment of syphilis, an occasional purgative, and an emipic use as an anti-emetic in children, without any explanation in the books as to its *methodus medendi*. He thinks that the faulty application of physiologic experiments to therapeutics in this case has wrought incalculable harm in limiting and discrediting the use of calomel as a therapeutic agent.

132. **Liquid Air.**—Pearce reports observations of the use of liquid air by Dr. A. Campbell White, in Lusk's dermatologic clinic. He believes it to be a specific in almost all forms of neuralgias. In sciatica the relief from pain is instant. He gives pictures of cases of erythematous lupus, epithelioma, cancrizing nevus, treated with liquid air.

133.—Abstract will appear in next issue.

134. **Pulse in Diagnosis and Prognosis.**—In this article Jackson calls attention to the value of the indications shown by the pulse in various disorders, especially typhoid fever and meningitis. In the former disease he has come to the conclusion that the pulse of 120 is a danger signal, and in meningitis when the vagus is stimulated the slow pulse is often of diagnostic importance. It is only seen in the early stages, as after the vagus has been paralyzed by pressure or by disease we have an exceedingly rapid pulse. The value of the pulse in prognosis in typhoid fever is very great. A sudden rise suggests hemorrhage, if accompanied by a fall in temperature. In perforation it is of the greatest value. It may be rapid in complications, such as otitis media and phlebitis, without rendering the prognosis unfavorable, but with acute inflammation of the parotid, prognosis is grave, more so, indeed, he thinks, than when pleurisy or pneumonia complicates the disorder. In convalescence the pulse is often rapid without any very serious import. He, in conclusion, calls attention to a symptom which has not been much noticed, viz., a discrepancy between the rate of the heart-beat and the pulse as felt at the wrist. This condition may be said to represent the acme of cardiac weakness, and it may be responsible for some of the cases in which a slow pulse is reported in fatty degeneration of the heart, or similar discrepancy and great dilatation of the heart in acute degeneration of the heart in infectious diseases, as in typhoid fever and diphtheria. He gives brief statements of two cases illustrating these facts.

136. **Improvements in Army Medical Service.**—Experience in the late war has suggested marked improvements in army medical service, which are summed up by Devine in the following paragraphs:

1. Physical examination of recruits; at first voluntary and now made mandatory.
2. Ration to be used at camp. Something after the pattern of army ration, but modified for adaptation to State service.
3. School for medical officers. One session annually.
4. Company bearers; four privates in each company specially trained in emergency and first-aid work.
5. System of red tape patterned after regular army, but modified for state service.

The following is a brief résumé of the suggestions offered to improve the efficiency of the army medical service. Some of them have been practically adopted by the Massachusetts Volunteer Militia, and it is hoped will be adopted by the entire National Guard:

1. That professorships of military medicine be established in every reputable medical college.
2. That until such time as professorships are established, the State provide a course on required subjects.
3. That physical examination of officers and men be made mandatory.
4. That troops at State encampments conform as nearly as possible to duties required in service on the field.
5. That every medical officer receive commission. (This pertains to contract surgeons.)
6. That one or more men in every company be detailed for regular instructions in ambulance corps, to prevent possibil-

ity in the future of the country losing the service of men especially trained for this service.

7. That one medical officer be selected in each regiment or brigade for his surgical ability.

8. That a corps of trained female nurses be organized in every state.

9. That divisional hospitals, in the broad sense, be abolished, and that small brigade and divisional hospitals be established for special cases, such as surgical and contagious.

10. That the volunteers follow, as closely as practicable, the regular army, so that when called into service together the two branches may work in harmony.

11. In addition to the present instruction in "first aid," a course in prevention of contagious diseases, etc., be given.

12. That a reserve staff of medical officers be formed in each state; said staff to be composed of ex-members of the medical department of the National Guard.

138. **Localized Tuberculosis of the Intestine.**—Mayo's paper calls attention to the subject of intestinal tuberculosis, and he reports seven cases operated on for this disorder. He also calls attention to the tolerance of operation in these cases and its benefits.

139. **Retroversion of Uterus and Functional Neurosis.**—Gardner concludes, after consideration of the subject, that uterine retroversion, while it may aggravate existing conditions, is not the primary cause of the functional neuroses sometimes attributed to it, and concludes her paper with the quotation from Dercum that: "There is no necessary relation between neurasthenia and pelvic disease. There is no relation between pelvic disease and hysteria even where the two affections coexist in the same case."

140. **Cerebrospinal Meningitis.**—Hirsh reports three cases of epidemic cerebrospinal meningitis, all diagnosed by a lumbar puncture, and he thinks that in one case the operation had decided therapeutic effects, while in the other two there was temporary relief. By relieving abnormal pressure and possibly getting rid of some of the toxins its beneficial effect can be readily conceived.

141. **Abdominal Injuries Due to Blunt Force.**—Three cases are reported by Fowler: One of rupture of ileac mesentery, with recovery, and another of rupture of the intestine treated by a resection and a Murphy button applied, with death. He reviews the symptoms in this class of injuries, calling attention to the special importance of temperature, pulse and vomiting. The latter is constant, but its significance depends on its persistency. As regards temperature, the diagnosis of grave intra-abdominal injury is made sure by a steady rise of temperature from the beginning, and in all cases by rise of the pulse-rate. If the initial symptoms of vomiting, temperature, etc., persist, especially the acceleration of the pulse, the diagnosis is fairly positive, and if in addition there is added marked increasing distension and steady increase of temperature the diagnosis is absolute. Operation must be early.

143.—See title 126.

145. **A Type of Tropical Fever.**—Von Wedekind's communication is in regard to a common type of tropical fever usually known under the name of calentura, which he noticed in all the ports he has visited during the dry season. Its onset is sudden, without prodromal symptoms, except perhaps a slight sensation of chilliness quickly followed by a high temperature, gradually increased until 104 or 105 degrees are reached. There are general myalgic pains, headache, loss of appetite, weakness with gastric disturbance. Without treatment the case will convalesce in about seven days. It occurs mostly in dry seasons; quinin is without effect, but aconite relieves the discomfort better than any other remedy. The exposure to the sun appears to be its cause, and avoidance of this will in almost all cases prevent the fever.

146. **Osteoplastic Surgery.**—Remarking at first on the greater demand of conservative surgery at the present time, Manley notices the methods of restoring symmetry in compound and complicated fractures. After some statements as to the necessity of paying attention to the individual condition and the danger of too early interference in way of premature rough handling, he advises the first effort to be in securing complete and permanent hemostasis, cleansing and covering the parts and placing them in comfortable position. Then he ad-

vises a delay of forty-eight hours before determining the future treatment, as the patient is then better able to bear with success what is needed to be done. It is impossible in many cases to operate so as to make an effective and complete replacement in primary manipulations. Frequently the desired result can only be obtained by secondary osteoplastic measures after union has taken place. He combats the rather established opinion that it is unsafe and inadvisable to make compound out of simple fractures; it is a mistake to assume that all compound fractures are slower in uniting than are simple ones. Under modern methods this is by no means always the case, and he says that free incision is justifiable for the purpose of treatment, but not for diagnosis, excepting in skull fractures. Secondary osteoplasty is one of the best achievements of modern surgery, and in medicolegal cases in the future involving serious fractures where the working value of a limb is to be estimated, the question whether all the resources of osteoplasty have been exhausted must be answered before any definite estimate of the extent of permanent injury is made. In conclusion he talks of the advantages of osteoclasis in acute angular deformity of the thigh, with shortening of the limb.

147. Angioneurotic Edema.—After a discussion of some of the literature of the subject, Baruch describes four cases of this disorder, two of which were distinctly traceable to intestinal autointoxication.

148. Malarial Hemoglobinuria.—Steggall reports three cases of malarial hemoglobinuria, and concludes from his experience that: 1. Quinin causes irritability of the kidneys and may cause hemoglobinuria. 2. Malarial attacks in chronic cases with malarial cachexia may cause hemoglobinuria. 3. In these cases quinin has lost much of its specific effect, and large doses must be exhibited. Should there be a periodicity, we must give the quinin before the time of attack. 4. The action of quinin must be assisted by such drugs as iron and arsenic, and, more important even than quinin, the liver must be acted on well and the effect kept up. He has never been able to cure an attack of hemoglobinuria without getting the liver active. The bilious vomiting in these cases sufficiently indicates the necessity of this.

149. Concealed Menstruation.—Brothers reports cases in which the menses disappeared at the age of 39, but the symptoms recurred at regular intervals and in very severe form. On examination a cystic tumor was found in Douglas' cul-de-sac, which was punctured through the vagina and a large amount of dark unclotted blood escaped. A second tumor also existed and laparotomy was performed; both specimens consisted of ovarian sacs communicating with the corresponding Fallopian tube. The openings at the fimbriated ends were completely obliterated. He was first inclined to think that, in accordance with Tait's theory, tubal menstruation existed shut off from the uterine and peritoneal cavities, and had discharged itself into the substance of the ovaries, but lack of typical hematosalpinx led him to believe that he was dealing with a case of primary menstruation into the ovaries.

150. Cutaneous Electrolysis.—Leviser describes his methods of electrolysis in the treatment of hirsuties, angioma, etc., and dwells especially on the importance of using the negative pole in operation. He emphasizes the fact that this is not simply cauterization, but may be better compared to a more accurate and equally distributed injection of a caustic solution.

151. Facial Eruptions Due to Intra-nasal Disease.—The point of Seiler's paper is that the swelling of erectile tissues of the lower or middle turbinated bones pressing on the capillary tissues of the septic mucous membrane produces disturbance in the circulation of the skin of the face, causing various eruptions. His observation is that since the introduction of cocaine as a local anesthetic into nasal surgery, and its unfortunate application by the laity for the temporary relief of nasal obstruction, it has largely increased the frequency of these eruptions.

154.—See title 53.

156. Conservative Gynecology.—Gorden's paper discusses, at some length, the so-called conservative and radical measures resorted to by surgeon-gynecologists. Conservative gynecology, it is pointed out, demands saving health rather than diseased or useless organs. The writer concludes that in all

operable cases, in women past the child-bearing period when uterine fibroid exists, hysterectomy is by far more conservative than myomectomy. Only in comparatively young women are we justified in doing a myomectomy when it is found necessary to make an abdominal section. Again, it is pointed out that fibroids are seldom single, and after myomectomy the development of an unsuspected fibroid is sometimes rapid, demanding a second operation. Myomectomy is attended by as high a mortality as hysterectomy; this conclusion is based on ninety cases of myomectomy with four deaths.

157. Complete Monocular Blindness, Recovery.—Posey's patient, while romping with another child, received a severe blow over the left eye; after thirty-six hours a severe pain developed back of the left eye, the sight gradually and progressively became dim, and resulted at the end of the fifth day in total loss of vision in that eye. The treatment followed was that of depletion; rest, leeches, salines, and a course of mercurial inunctions were resorted to; after three days improvement was observed; further treatment resulted in a complete restoration of sight within a few weeks. The lesion in this case was considered either a retrolabular hemorrhage or extravasation, sufficiently extensive to interfere the function of the fibers of the optic nerve. The writer considers it probable that as a result of the transmitted force attending the blow over the eye, the sphenoid bone was fractured, the roof of the sphenoidal cells being especially involved in the injury. This supposition is supported by the fact that the loss of sight began in the upper part of the field, which would indicate that the inferior portion of the nerve was first involved, the complete blindness which followed would indicate a gradual involvement of the entire nerve trunk.

158. Typhoid, Death One Week After Onset.—The onset of the symptoms was abrupt, delirium developed rapidly; cyanosis, clammy perspiration, rapid and difficult respiration, hyperpyrexia, cough and the physical findings at the base of one lung led to the diagnosis of lobar pneumonia. The patient was placed on a supportive treatment. The following day, some typhoid symptoms were observed. Under the suspicion that the diagnosis was incorrect, the Widal test was resorted to and the positive clump-reaction obtained. Subsequently the patient died; bacteriologic examination of the cultures taken at the time of autopsy showed typhoid bacilli in the spleen and mesenteric glands. Cultures made from the material in the bronchial tubes and lungs showed the presence of staphylococci. The anatomic diagnosis was typhoid fever and bronchopneumonia. The unusual extent of the involvement of the solitary and agminated follicles in the intestines is to be noted; the ileum, the colon even as low as the sigmoid flexure, was thickly studded with enlarged lymphoid nodules. The extensive distribution explains the violent short course of the disease. All intestinal lesions were in the first stage of swelling and infiltration; no ulcers were found. The spleen was greatly enlarged, and, together with the liver, had been displaced upward by the enormously distended intestines. The diagnostic value of the Widal test was well demonstrated in this case.

159. Acute Diabetes.—Three rapidly fatal cases of this rare disease are reported by Elsner. The first occurred suddenly, in a child of 5 years, a few weeks after receiving an injury to the head. There was great thirst, polyuria, and the urine, heavily loaded with sugar, had a specific gravity of 1042; within ten days the child died in a comatose state. The second case, also occurring in a child, but without any suggestion of head-injury, suddenly developed great thirst, voracious appetite, and glycosuria. The child died before the ninth day, comatose, with symptoms of acetoneuria. The third case occurred in a man of 45 years, who had enjoyed usual health. Within a few hours after exposure to cold and wet weather, he complained of dysuria, which was soon relieved by a continuous dribbling of the urine, hiccough, with mental hebetude. The bladder was enormously distended, and when withdrawn, the urine had a specific gravity of from 1015-1025, as much as five gallons of a 3 per cent diabetic urine being withdrawn in twenty-four hours. The disease terminated fatally within one week. There was no evidence to show that this patient had any pancreatic or other associated diseases, nor was there any hereditary tendency.

FOREIGN.

British Medical Journal, August 5.

Recent Advances in Practical Medicine. RICHARD DOUGLAS POWELL.—In his address in medicine, Dr. Powell notices the recent advances that have been made in instruments of precision and methods of diagnosis, modern studies in bacteriology, serumtherapy, preventive inoculation, the prevention of tuberculosis and the relation of soil to disease. The paper ends with a tabulated statement of the action of the different serums with reference to bactericidal, antitoxic, and prophylactic qualities. Among those decidedly antitoxic and prophylactic he includes the antistreptococcus serum and snake poison, and as of special prophylactic value, though not antitoxic, the protective serums of plague, cholera, anthrax and yellow fever. Tetanus is still somewhat in question, and the antitoxic action of the diphtheria antitoxin is, of course, understood.

Address in State Medicine. GEORGE WILSON.—The address of Dr. Wilson in the Section on State Medicine, before the British Medical Association, is notable for its antivivisection ideas, even going so far as to doubt the value of the diphtheria antitoxin. He claims that bacteriology has led us in false lines in assuming that the pathogenic microbe of any disease is the primary cause.

Etiology of Malarial Fever. GEORGE THIN.—The address of Dr. Thin gives one of the most thorough and complete statements of the insect theory of the origin of malaria, from the earliest speculations on the subject by Nott, King and others down to the completed investigations by Ross, Biggiani, Grassi and Bastianelli. In the concluding part of his paper he shows up the advantage of the military medical school at Netley for the study of tropical diseases, and expresses a hope that it may be opened to civilians in the near future.

Lancet, August 5.

Some Structural Varieties of Enlarged Prostate Relative to Its Treatment. REGINALD HARRISON.—Remarkable first on the different results from the various operations for enlarged prostate, Harrison states that there are at least three varieties of this disorder that are not uncommon, and yet widely different. In the first we have enlargement proceeding from blood engorgement, more or less chronic in its nature, so that the organ is somewhat assimilated with the erectile structure. In the second form there is a fibrous degeneration, and the symptoms are those of local irritation, such as in the case of vesical calculi. In the third form the enlargement of the prostate may be said to be self-contained, and consists of an almost isolated mass of tissue resembling an adenoma, which, like the kernel of a nut, easily shells out and can be enucleated. He asks what surgical or pathologic analogy there can be between these conditions, other than their location, and what good is likely to follow a uniform operation in all three cases? For the first form he thinks that vasectomy is indicated, while in those of the second and third, prostatectomy has been successfully practiced in many cases. Vasectomy, which is a comparatively harmless operation, has been found to greatly relieve vesical irritability and prevent the recourse to the use of the catheter.

Origin of Antitoxin: Is It Present in the Blood of Some Normal Animals? L. COBBETT.—In Cobbett's article, he is inclined to accept the "Seitenkette" theory of Ehrlich, that is, that there is in the cells a certain portion of protoplasm which has the power of entering into chemical combination with a given toxin. As regards the question whether antitoxin is formed out of its corresponding toxin, or is an independent product, it is as yet an undecided question, with the probability in favor of the latter. Cobbett reviews the experiments as to the existence of antitoxin in the blood of normal animals, and finds that in certain cases, especially in horses, there is in the normal serum a power of neutralizing the toxins of diphtheria. Whether this is due to the presence of a diphtheria antitoxin or not, it does not follow that it is a normal constituent of the blood. The fact that it is absent in many cases is against such a supposition. He asks whether it might not be of advantage to study the suitability of an animal for the production of the antitoxin, as we know that at present there is a vast difference in this regard between them. Whether the presence of antitoxin in the blood has any relation to this matter or not, he can not positively say, but he is working at the subject and hopes to make a further communication in regard to it.

Bulletin de l'Académie de Médecine (Paris), July 18 and 25.

Relations Between Dermatoses and Gastric Affections. A. ROBIN AND LEREDE.—This important communication is based on a study of 129 cases of cutaneous affections occurring among 422 dyspeptics. The fact is established that in all these cases there was a gastric fermentation with the formation of lactic or butyric acid. The excretions of these acids through the skin irritates the nerve-fibers in the skin and causes pruritus, prurigo, eczema, acne, etc. The acidity of the sweat is twice and three-fold the normal acidity, and constant, after jabardani has been administered. Thirty cases studied more closely showed that the metabolism was diminished, the elimination of nitrogenous matters imperfect and that there was less phosphoric acid, with a higher coefficient of mineralization. The therapeutics indicated by this conception of the autotoxidemic origin of dermatoses have proved wonderfully successful. One case, a man of 50, with diffuse prurigo and eczema which had resisted all treatment for twenty years, was entirely cured in two months, "very much to his surprise." The first step is to determine the character of the dyspepsia and treat it even when there are no clinical evidences of gastric disturbance. The next step is to note the general disturbances in nutrition and the special disturbances, if any exist, and treat them also: ammonium fluorid, if the gastric fermentation is due to lactic acid, and biniodid of bismuth and cinchonidin (erythrol), if to butyric acid. A strict sterilized milk diet may be required in certain old cases: local treatment as usual.

Transient Acute Aortitis of Malarial Origin. POTAIN.—It was objected to Lancereaux' communication in regard to malarial aortitis (see abstract in JOURNAL, p. 345), that the malarial infection was probably a mere coincidence in his observations. A convincing argument in his favor is the case now described by Potain, in which a young soldier in Algiers contracted malarial infection and for nine months had intermittent fever and diarrhea. Returning to France the fever recurred every second day. The heart sounds were distinct and clear, with no abnormal sounds. The area of total dulness covered ninety square centimeters. The portion corresponding to the aorta extended 2 cm. beyond the sternum. The fever yielded to quinin and the aorta gradually receded until it ceased to encroach beyond the sternum by the tenth day. This transient enlargement could not have been due to increased blood-pressure as this had been, and is usually, exceptionally low in intermittent fever, later returning to normal. The distension of the artery could only have been due to diminished resistance in its walls, and this diminished resistance to the malarial infection. Repeated or protracted infection is therefore liable to in time lead to specific alterations in the walls corresponding to the extent of the functional modification.

Ganglionic Pseudolymphadenic Tuberculosis (Tuberculous Lymphoma). P. BERGER.—"Histologic investigation is the only certain means of differentiating lymphadenoma from ganglionic tuberculosis, confirmed by inoculation and extirpation is the only certain treatment, although arsenical treatment and especially a course of Bourboule waters, may be tried if patients have leisure and means for it." The extirpation is generally easy, and free from much danger, as the engorged ganglia are encapsulated, circumscribed, and without adhesions to the cellular tissue and neighboring organs. It is only necessary to remove the ganglion or ganglia constituting the chief mass of the tumor, as the secondary engorgements frequently subside after extirpation of the rest.

Human Coccidiosis. CORNIL.—Three observations of tumors in the subcutaneous cellular tissue or scrofulous bursa are described, the tumors formed of a multitude of pockets filled with a yellow-brownish, creamy or viscous and mucous puriform fluid, containing yellow calcareous grains, fragments of capsules of coccidia or complete egg-shaped capsules or several egg-shaped bodies contained in a single capsule. The existence of coccidiosis in man is thus established. The cavities were lined with inflammatory tissue with a border of large giant cells. Cornil has previously noted the significance of giant cells as an indication of the struggle of the organism against foreign bodies, and particularly against small parasites.

Frequency of Herpetic Manifestations in Influenza-Grippe. VIDAL.—The frequent appearance of herpes, zona and herpetic manifestations on the mucous membrane of the mouth,

ears, etc., in the course of la grippe, in his experience, leads Vidal to enquire whether others have noted this coincidence and whether some of the la grippe symptoms may not possibly be due to a localization of herpes on the brain or internal organs.

Journal de Médecine de Paris, July 23 and 30.

Protracted or Recurring Diphtheria. H. BARBIER.—In the case reported, slight septic complications and evidences of bulbar intoxication recurred several times after apparent recovery; sometimes accompanied by the formation of pseudomembranes, and again not. Each recurrence yielded to serum treatment, which finally dispelled the infection. One of the most frequent and reliable indications of this diphtheritic bacillosis is tachycardia with weak and arrhythmic heart action. Barbier urges the necessity of serum treatment in these cases, even in the absence of all pseudomembranous neoformation.

Symphysiotomy Without Consecutive Immobilization. G. FIEUX.—The extremely successful results attained in a case in which symphysiotomy was performed when the fetus was in jeopardy, the heart beat 100, dull and irregular, induce Fieux to recommend the method followed, which was simply to carefully suture the coaptated parts and paint the wound with a little steresol—gum laquer dissolved in alcohol. No application of any kind was used, and the next day the patient could raise the buttocks and move her limbs without pain or effort, like her neighbors in the ward, and got up the fifteenth day. After the seventeenth day, she could go up and down stairs as nimbly as before the operation. The non-interference with the post-partum care is a special advantage of this simple method.

Nord Medicale (Lille), July 15.

Pernicious Malarial Infection, Failure of Quinin, etc., Cured With Hydrotherapy. G. LEMOINE.—The observation reported is noticeable on account of the absolute failure of all therapeutic measures and the prompt and permanent recovery after the application of the cold douche at 10 C., for six seconds to one minute, avoiding douching the region of the liver and the spleen. The patient, a man of 31, was robust until after a month at Beyrouth and an attack of influenza on his return to France, followed by the indications of pernicious paludism.

Presse Médicale (Paris), July 20.

Hysterectomy in Acute Puerperal Infection. T. TURFIER.—In acute postpartum septicemia without peritoneal or annex localization, Tuffier advocates hysterectomy as justifiable and no more difficult than any hysterectomy when the facts of the extreme friability of the uterine tissues and of the vessels are borne in mind. The rock to be avoided is cutting through the tissues with the forceps, which should be applied in stages. He has collected thirty-five observations, including three personal, of such cases thus treated, and the results have been that thirteen were saved although in an apparently hopeless condition. A number of the rest were probably beyond all aid, as any innovation of the kind is always first restricted to absolutely desperate cases. He considers the uterine muscular tissue the seat of infection and starting point for the toxic-infectious accidents in these cases without tympanism, pelvic sensitiveness, much vomiting or visceral infectious localization and no supuration found at the autopsy. In one of his own observations the temperature persisted at 41.5 C., even after curetting, irrigating and disinfecting the uterus, etc. It fell to 37 degrees in less than twenty-four hours after the uterus was removed by the vagina, and staphylococci and streptococci were found in scrapings of its inner surface. Prompt and rapid recovery followed.

Revue Générale d'Ophthalmologie (Paris), July 31.

Acute Optic Neuritis from Uricemia. ANGELUCCI.—A number of cases of uricemic optic neuritis are on record, but they have been classed with the manifestations of rheumatism. The symptoms of the retrobulbar form are the same in each. The reasons for assuming an uricemic origin are that the optic neuritis appeared in subjects with pronounced uricemia and progressed in spite of all the usual local remedies, but yielded promptly to salicylic treatment. In a few cases the uricemic manifestations coincided with the aggravations of the ocular affection. In each case the visual disturbance appeared abruptly, and the sight improved with appropriate treatment notwithstanding aggravation of the oph-

thalmologic signs. Another point is that in seven out of fifteen cases there was central scotoma.

Revue Hebdomadaire de Laryngologie, etc. (Bordeaux), July 22 and 29.

Chancriform Uleeromembranous Amygdalitic. RAOULET AND THIRY.—Study of several observations of this affection, which deceptively simulates both chancre and diphtheria, has demonstrated that it is an affection analogous to uleeromembranous stomatitis, and may possibly be only an unusual localization of it; that the amygdalitis is caused by a necrosis of the tonsil tissue extending inward; and that it is due to the presence of the spirillum and spindle-shaped bacillus described by Vincent. The three personal observations happened to be all medical students; two had a recurrence. In two cases of uleeromembranous stomatitis without tonsillar lesions, the same flora was found, also in a case of ulcerated gingivitis. The spirilla were found in a syphilitic chancre, but not the bacilli, which are always associated in the affection described. The bacilli are larger than the Loeffler bacillus, will not grow on serum, do not take the Gram stain and are often found end to end, with vacuoles. The usual methods of inoculation and cultures have failed, but mixed anaerobic cultures have recently been successfully grown.

Adenoid Vegetations in the Adult. JANKELEVITCH.—This puzzling case of adenoiditis with acute "pushes," accompanied by hemorrhages, and dry laryngitis, was diagnosed tuberculosis, until the vegetations were discovered and removed, when the hemorrhages and cough ceased, although some months were required before the laryngitis was completely cured. The patient was a butcher aged 29 years.

Berliner Klinische Wochenschrift, July 17.

Case of Tetanus Puerperalis Treated With Dural Infusion. E. V. LEYDEN.—The tetanus antitoxin was introduced directly into the spinal canal, and also injected subcutaneously, in a case of very severe tetanus consecutive to a traumatic three months' abortion. Improvement was evident at once, suggesting the greater effectiveness of the antitoxin when introduced into the nervous system direct.

Cerebral Tumor. JOLLY.—This observation demonstrates the benefits to be derived from simple trephining in case of inoperable tumor. An unusually large glioma of the right central convolution had grown through the skull. The patient was very much relieved and improved by trephining, and the improvement lasted a year. Excision was impossible on account of the depth of the growth.

Infectious Character of Chorea and Its Connection With Acute Articular Rheumatism. WESTPHAL, WASSERMANN AND MALKOFF.—Westphal reports observations of three girls with severe chorea, producing hallucinatory mental disturbances; in each case the chorea was consecutive to acute articular rheumatism, and acute endocarditis in one. Albuminuria and herpes labialis were also present. One patient, 19 years old, first had the acute articular rheumatism; a month later the chorea and herpes labialis appeared and death followed an extremely violent delirious state with high fever and collapse. The autopsy disclosed endocarditic deposits on the mitrals and fresh parenchymatous nephritis. Cultures were derived from the blood, brain and mitrals, which produced severe joint affections in rabbits, introduced into the circulation, as proved in eighty animals, and the same diplococcus, a kind of streptococcus, was found in the joint effusions. The incubation period was three to ten days.

Deutsche Medicinische Wochenschrift (Berlin), August 3.

Vascular Changes During and After Artificially Induced Anemia. A. BIER.—The hyperemia which follows release of an Eschscholtz tourniquet is usually attributed to a paralysis of the vasomotor nerves by the constriction, which causes relaxation and dilation of the arteries. Bier denounces this assumption and describes numerous experiments which demonstrate that any diminution in the arterial current in any part of the body, causing this part to be insufficiently supplied with fresh blood, materially reduces the resistance to the arterial current in this part. This decreased resistance is most conspicuous when the blood-stream is totally arrested for a while and then allowed free course again, and the result is extreme hyperemia. This diminished resistance is not a paralysis of the vessels in the usual sense, as it does not occur in the venous circulation. Instead of paralyzing, it stimulates

the arteries and capillaries to contract, and thus drives the blood out of them into the veins. It is this property of the vessels which produces collateral circulation until the arterial collateral routes are sufficiently enlarged, and it is a peculiarly useful and necessary vital process.

Improved Needle Holder for Curved Needles. V. SCHULTZ.—The jaws of an ordinary rack needle holder are hollowed out lengthwise inside, the concavity tapering to the point, which is sloped off obliquely. The edges of the lengthwise concavity and of the oblique ends are provided with fine teeth. The needle thus fits into the space and is held by two pairs of firm supports while the middle portion is untouched.

Muenchen Medicinische Wochenschrift, August 1.
Gonococcus Toxin and Its Action on the Nervous System. M. J. MOLTSCHANOFF.—White mice, rabbits and guinea-pigs injected with toxins derived from an unfiltered 20 to 25 days' culture on bouillon and hydrocele, heated to 70 C. for 15 minutes, to kill the cocci still alive, showed most distinct and pronounced alterations in the nervous system as the result of the action of the toxin. In cases of acute intoxication these alterations are most evident in the cells of the anterior cornua of the spinal cord, next in the cells of the intervertebral ganglia and least in the cells of the nuclei in the medulla and cerebral cortex. In cases of chronic intoxication the most prominent manifestations are symptoms of a degenerative neuritis, with occasionally degeneration of the posterior roots and posterior columns of the spinal cord. The toxins were injected into the abdominal cavity or a vein.

Capacity of the Urethra and Syringes. H. LOEB.—Investigation of fifty patients with subacute or chronic gonorrhoea and others resulted in the discovery that the capacity of the anterior urethra varies from 6 to 20 c.c. in different persons, healthy or diseased, although there are no external means of gauging its size; age, physique, appearance, are frequently deceptive. As it is necessary to adapt the injection to the capacity of the cavity, Loeb advocates determining this capacity for each individual case by measuring with a graduated syringe or irrigator, and then ordering a syringe for future injections of the exact size required. He uses a syringe holding 20 grams of a warm solution of potassium permanganate the piston rod graduated for centimeters. The filling urethra and increasing resistance indicate the moment when the anterior portion is fully distended.

St. Petersburg Medicinische Wochenschrift, July 8 and 15.
Pemphigus of Upper Air-Passages. R. OTTO.—In connection with a detailed observation of a case of chronic pemphigus of the upper air-passages, and of the conjunctiva, Otto asserts that the difference is not pathologic nor anatomic, but merely a difference in degree, between the bullous-exfoliating form of pemphigus and the adherent-fibrinous form. The favorite location for the former is the nose, soft palate, throat and larynx, with a tendency to extend to the conjunctiva of the lids. The second variety appears on the cheeks and tongue, extending later to the throat and larynx and leaving the nose and conjunctiva untouched. The terminal phases of the first variety are a thickening, shriveling and growing together of the membrane, while these processes have not been noted in the few observations of the latter variety on record. The bullous form affects weakly, and the other robust, persons. The one point in common with both is the chronic and obstinate character of the process. The etiology is still obscure.

Wiener Klinische Rundschau, July 2, 9, 16 and 23.

Sexual Perversion Among Insane. P. NAECKE.—The practical conclusion of this careful study of the hundreds of inmates of the Hubertusburg asylum in Saxony are that imbeciles and idiots should have separate institutions, as they far outnumber all the other cases of sexual perversion, and incite others to imitate or join in their practices, or more readily fall victims. Habitual criminals also should not be allowed to mingle freely with the other inmates, particularly the females, as they introduce new practices. Naecke considers it unproved that onanism can produce a mental disturbance per se. The disposition to extreme onanism is the first symptom of the encroaching psychosis. Sexual perversion is very rare among the cases of paralysis, and was only noted in a few instances of male onanism and exhibitionism, and female masturbation after excitement. Cases of homosexual perversion

were remarkably rare. He was unable to distinguish any markedly unfavorable influence of the onanism on the course of the mental affection in any case, "although the prognosis with excessive onanism is bad, as such an abuse can only occur in extreme degeneration, congenital or acquired. It may eventually render the mental affections worse, but this rarely happens." Prospect of improvement of the mental affection by breaking up the habit is only possible in fresh cases with incessant onanism, but all should be examined for phimosis, a too short frenulum, or inflammation of the genitalia, which may be the cause. Little can be accomplished with any except prophylactic measures; close supervision of the water-closets, no dark corners, no beds placed together, etc. Naecke thinks that much might be learned by comparison of such records from various institutions, with especial study of the dreams, etc.

Recurrence of Syphilitic Affections of the Eyes, and Means to Prevent It. GALEZOWSKI.—Twenty years of observations and tests have demonstrated that syphilitic affections of the iris and conjunctiva are cured as the syphilis yields to specific treatment, but that affections of the choroidea persist and recur as the last lingering manifestations of the infection. The only effective treatment is local friction kept up daily for two years, with a pause of four days after ten, but never over three weeks' suspension. His experience has been that the best preparation is of mercurial lanolin salve, from .5 to 2 grams, rubbed into a different spot each day. Potassium iodid is not only ineffectual, but is directly injurious, as it induces conjunctivitis, although it may occasionally be indicated to neutralize the effects of excessive specific treatment.

Wiener Klinische Wochenschrift, July 20 and 27.

Thread Formation in Serum. R. KRAUS.—The serum reaction noticed and called thread formation by Pfaunder (see *JOURNAL*, xxxii, p. 935), is a phenomenon which occurs with certain micro-organisms under the influence of an agglutinating serum, as confirmed by Kraus. But he asserts that agglutination invariably precedes it, and is of more constant occurrence. It is governed by the same laws as agglutination in general except in respect to the bacillus coli; a non-specific serum can produce both phenomena with this bacillus.

Uterine Myomata and Pregnancy. R. CHROBAK.—Myomata were found in 862 cases out of the last 30,000 patients at Chrobak's gynecologic clinic, or 2.8 per cent of the total. Of these, 284 were sterile; 148 had only one child. It is his opinion that myomata are not frequently the cause of sterility, but he considers statistics almost valueless in this respect, as we have "no even half-way reliable statistics for comparison, in regard to the fertility and sterility of marriages, as it is so uncertain whether conception is prevented or not." He has frequently witnessed the hypertrophy and retrogression of a myoma parallel with the development and involution of the pregnant uterus; in one instance a myoma the size of a nut increased to the size of an apple and then returned to its former size, four times in succession. But usually it does not subside. A case is described in detail in which the pressure of a subserous myoma, growing from the upper posterior surface of the uterus, had twisted the gravid organ on its axis. As the uterus had developed the tumor had been pressed down into the small pelvis. As term approached it was manually reduced and pushed up into the abdominal cavity, but symptoms of peritoneal irritation appearing, the child was safely delivered by abdominal Cesarean section and the myomatous uterus extirpated. Smooth recovery followed.

Abnormal Sweating. J. MAIRSCHLEER.—A peculiar case of neurosis is described in this communication, distinguished by abnormal functioning of the sweat center and nervous depression. The sweat drops form profusely in all weathers, but, strange to say, the maximum is in the coldest, the minimum during the hottest months. This hyperidrosis is limited to the trunk, face and upper extremities. Study of the metabolism showed retention of Cl, but this is probably only apparent, and the Cl is eliminated in the perspiration. The subject, a young Jew, is otherwise normal but feels too weak to work. The affection is of several years' standing.

Acute Lymphemia. F. PINELLES.—Examination of the blood of a woman of 73, presenting the clinical picture of

acute leucemia—death the nineteenth day—showed a proportion of 1 to 6½ for the whites and reds; 96 per cent. of the leucocytes were lymphocytes; 3.7 per cent. polynuclear neutrophils and 0.1 per cent. polynuclear eosinophiles. No nucleated red corpuscles were found. The lymph glands and spleen were much enlarged and the liver once and a half normal size. The composition of the blood, the hyperplasia of the lymph-forming organs, the proliferation of the lymphocytes and the severe lymphoid degeneration of the bone marrow, entitle this to be designated a case of acute lymphemia, corresponding with the cases that have been observed of chronic lymphatic leucemia."

Revista Medica (Mexico), July 1.

Explanation of Sleep by the Slowing of the Protoplasmic Currents. A. L. HERRERA.—Sleep, according to this author, is caused by a retarding of the protoplasmic or neuroplasmic currents—in which life consists—by a lack of nutritive fluids, by congestion, by anemia or by cold, and is the same in the infusorium as in man. The currents persist but they are slow and languid, and the process of slowing up and becoming active again is extremely gradual. His summary for all living things is: Nutritive currents with the maximum velocity: Active life. Nutritive currents (sap, blood, protoplasmic currents), periodically retarded by the lack of reserves which are expended during the day: Sleep. The same, less active during the day, from inactivity, nervous excitement or other cause: Insomnia. Currents retarded by the action of cold: Hibernation. Currents retarded by a lack of moisture or completely obstructed: Latent life. General co-ordinated currents definitely arrested by coagulation, intoxication, hemorrhages, asphyxia, etc.: Death. Herrera considers all the movements of protoplasm from the amebism of the rhizopods to the amebism in our brains, caused by an absorption of oxygen and a liberation of carbonic acid. He has succeeded in reproducing these supposed "vital processes" with a drop of printer's ink mixed with sodium bicarbonate and spread on a cover-glass moistened with tartaric acid, as he has previously announced.

Gazzetta degli Ospedali e delle Cliniche (Milan), July 9, 22 and 30.

Antagonistic Influence of Syphilis on Tuberculosis. I. MONTEVERDI.—The influence of one disease on another has long been recognized, but few if any instances are on record of tuberculosis absolutely cured by a fresh syphilitic infection, as in the observation here reported. The night sweats, high fever, cough and Koch bacilli in the sputa, were banished by a mild syphilis which readily yielded to treatment. Six years have since elapsed, with no recurrence of the tuberculous symptoms in the now robust young man.

Location of the Parathyroids in Man. C. GANFINI.—The upper parathyroids, corresponding to the inner ones in animals, are situated at the junction of the upper third with the two lower thirds of the posterior surface of the lateral lobes of the thyroid body, as Ganfini has established by inspection of forty cadavers. The two lower parathyroids in half of the cadavers, were situated on the posterior surface, near the lower edge of the lateral lobes of the thyroid. In the rest they were below this lower edge, and from a few millimeters to 2 to 3 cm. from it, and thus located on the lateral surface of the trachea, surrounded by the retrosternal adipose tissue. In six of these latter cases the inferior parathyroid was connected with the cranial portion of the thymus, either right or left. He considers that these six cases prove not only the origin of the inferior parathyroids from the thymus, but also that the thymus in its descent carries them down with it, and, as it atrophies, they remain closed in its residuum, the retrosternal fat.

Osmotic Tension in Exudations and Transudations. ASCOLI.—Comparative cryoscopic study of the organic fluids has established the value of the variations in the freezing point of the exudations and transudations as a means of differentiating certain affections.

Tubercular Intoxication. S. MIRCOLI.—The peculiar luster of the eyes, and the tendency to mydriasis in tuberculous subjects, indicate a toxic origin, to which Mircoli also attributes the psychic disturbances and impulsive actions. In one case he has observed mydriasis and paralysis of accommodation on the side opposite the pulmonary lesion. He mentions an observation of a young man with a slight local lesion, and extreme

cachexia, but no pulmonary symptoms, who reacted to a dose of .5 c.c. tuberculin more intensely than most persons to a dose of 50 c.c.

New Form of Anemia from Toxic Sera. ZENONL.—The serum of certain animals treated by injections of blood from animals of other species, became toxic for the animals from which the blood was derived. A few c.c. of this serum, injected into rabbits, produced a most acute form of fatal anemia, which fact may throw some light on the pathogenesis of primary anemia and of hematology.

Pathogenesis of Gout. CARBONE.—The assumption that gout is caused by a local hyperproduction of uric acid was practically tested by injecting urates into the spinal marrow, but without results. Injection of neutral urates or solutions of sodium biurates into the articulations also failed to produce inflammation or necrosis. But these phenomena were most intensely produced when adenin hydrochlorate was injected into the articulations. This aloxur base is produced from the nuclein in the bone marrow, in large quantities, and combines with uric acid to form a compound that is remarkably insoluble under certain conditions. Considering these two facts, in connection with Minkowski's recent assertions that he had produced uric infarcts in dogs by administering adenin per os. Carbone concludes that adenin must play a conspicuous part in the pathogenesis of gout. It produces necrotic and inflammatory processes in the tissues and binds uric acid in the form of adenin urate, which later becomes transformed into sodium urate.

Action of Venesection on Arterial Pressure. TREVES.—The arterial pressure and frequency of the pulse in twenty-seven subjects were studied with the sphygmograph before, during and after venesection and cupping. It was found that neither are capable of diminishing the arterial pressure; that the force with which the organism maintains it constant requires such an extreme degree of these mechanical means to conquer it, that it transcends the limits of therapeutics. Consequently, the explanation of the undoubtedly favorable results obtained by cupping and venesection must be sought in some other direction than in the diminution of the blood-pressure.

Cystocolostomy for Exstrophy of Bladder. BOARI.—The idea of utilizing the anus for a sphincter and transplanting the vesical flap in the lower portion of the intestine has been carried into execution twenty-one times. The result has demonstrated that a healthy intestinal mucosa does not suffer from contact with the urine in most cases, although a few instances of rectitis and colitis have been observed. Continence was perfect during the day in all, but relaxed at night in four. Pyelitis from ascending infection was only noted in two cases, and in each there had been previous renal disturbances. The bladder flap retains its vitality. Boari ascribes the success more to the distance of the cicatrix from the vesico-ureteral sphincter to avoid cicatricial constrictions, than to the retention of the sphincter. Experience has shown that ascending infection can be avoided and that uretero-enteric anastomosis is not incompatible with life.

Operative Cure of Prolapsus of Female Genital Organs. G. OBSINI.—The successful results in twenty-four cases treated by scraping the uterus, anterior colporrhaphy, Hegar's colpo-perineoplastica and shortening the round ligaments, induce Orsini to recommend this procedure in high terms. Half of the number were treated over three years ago, and most lead particularly laborious lives. Only five had passed the menopause. The subjective results were not perfect in a few ultraneurotic patients, and the surgeon must be guarded in his promises before an operation of any kind on this class.

Thyroid Treatment for Bone Regeneration. FERRIA.—Two more cases are reported in which tardy regeneration after a fracture was hastened by the administration of thyroid extract. The thyroid gland was normal in each.

For Increasing Sound of Voice.—Complete removal of the larynx usually leaves the voice a faint whisper. Mikulicz has obviated this by a contrivance, described in the *Berliner Tageblatt*, on the principle of a whistle, which the subject can put to his mouth as desired and magnify the sound to a natural tone. It has proved very successful on the patient for whom it was devised, a man of 47.

Societies.

Jasper County Medical Society.—At the last meeting of this society, held at Newton, Iowa, the following officers were elected: President, L. C. S. Turner, Colfax; vice-president, W. H. Shaw, Monroe; secretary and treasurer, Harry P. Engle, Newton.

Kankakee Valley District Medical Society.—Physicians from the counties of Cass, Pulaski and Jasper met with the Starke County, Ind., Medical Society at Bass Lake, Ind., and formed a temporary organization by electing Dr. L. D. Glazebrook, president, and E. P. Mitchell, secretary. On motion the society was named "The Kankakee Valley District Medical Society." Drs. Washburn of Rensselaer, Thomas of Logansport, and W. H. Thompson of Winamac were selected a committee on constitution and by-laws. The society meets in North Judson, Ind., September 12. The Starke County Medical Society will meet in the forenoon and the district society in the afternoon to complete the organization. All physicians of Lake, Porter, Starke, La Porte, Fulton, Pulaski, Cass, Carroll, White, Jasper and Newton counties are invited to be present and aid in the organization. The organization will include ten to fourteen counties in northwestern Indiana.

British Medical Association.

(Continued from p. 481.)

RECENT ADVANCES IN PHYSIOLOGY.

J. J. CHARLES, M.D., F.R.S.E., gave an address on this subject before the Section of Anatomy and Physiology (see *JOURNAL*, August 12, p. 419), and said, in part:

Physiology is held by Max Verworn to have as its task, "the investigation of life;" but the nature of life is to us, as yet, a mystery. No doubt, we are acquainted with many of the phenomena which accompany it; but it has been truly said that "everywhere, to whatever branches of physiology we may turn, wherever the gross activities of the body are traced to the activity of the individual cells, we always come upon an unsolved problem." Thus, we can not explain, nor can we discover, how nervous impulses originate in the retina, and give rise in us, through the agency of the cerebrum, to the idea of the image; why the salivary glands secrete ptyalin, and the glands of the stomach pepsin; or why some cells of the mesoblast develop into muscle and others into cartilage.

The minute structure of living cell protoplasm is a question still open to discussion. According to W. B. Hardy, the four views at present held on this subject are: 1, that protoplasm is made up of a reticulum and a homogeneous fluid substance; 2, that it consists of a more or less solid material containing vacuoles, in which there is a fluid; 3, that it is a homogeneous jelly, with granules; and, 4, that it is entirely homogeneous. As a result of his observations on colloids, such as white of egg, and on the living cell substance of the pancreas and other glands, Hardy has come to the conclusion that the reticulum which may be demonstrated in fresh or fixed cell protoplasm is largely due to the physical and chemical alterations which occur in it at death, and to the action of fixing reagents on it which induce coagulation. Hardy has succeeded in making preparations with egg albumin, showing a reticulum very closely resembling that of protoplasm. One of these, a film fixed by steam, while flowing between two cover-glasses (Fig. 1), is very interesting, as exhibiting the abrupt transition from the network to the homogeneous substance similar to that demonstrated years ago by Schäfer, in the white corpuscle when fixed in the same way by heat.

The microscopic characters of striped muscle have not ceased to be a debatable subject among histologists. The interpretation given by Rutherford has met with much acceptance, and is undoubtedly supported by the examination of specimens of crab's muscle which have been prepared according to his method; but the recent researches of Hardy would lead us to look with suspicion on the appearances presented by this tissue after it has been subjected to the action of chemicals.

The contraction of muscle is believed by McDougall to depend on the elimination of lactic acid, causing the passage of the fluid sarcoplasm into the sarcostyles. Unstriated muscle has been found by Tripel in all the cerebral veins, but the muscle

cells, he says, are isolated and mixed with white fibrous tissue.

By the use of osmic acid and uranium nitrate, with various dyes, Kolossov has demonstrated between the cells of the liver, testis, ovary, pancreas, and thyroid body, processes of connection which may serve for the conduction of impulses and the transference of nutrient materials.

The axis cylinders of nerve-fibers have been shown by St. Apathy, in invertebrate animals, to be made up of fibrils which terminate, in the case of the sensory cell, in a single basket around the periphery, and in the motor cell in one basket around the periphery, and a second around the nucleus. This view, in some respects, resembles that which Arnold advanced, years ago, as the mode of origin of nerve-fibers from nerve-cells.

It is now agreed that the amount of hemoglobin in the blood is not greater in the inhabitants of high altitudes than in those living at lower levels.

Gangee has drawn attention to the absorption band in the extreme violet end of the spectrum of blood, which he has named "the band of Soret," after its discoverer. He has pointed out that not only is it more distinctive than the bands seen in the spectrum when examined in the ordinary way, but that it is absolutely characteristic of hemoglobin and its compounds; so that by this means they can at once be distinguished from bilirubin and urobilin as well as from carmin and all other coloring matters yet examined. This is a matter of practical importance, because this method may yet come to be employed in medicolegal investigations. Gangee has indicated that the best and easiest way of demonstrating this spectrum is by means of an electric arc, a fluorescent screen, and a Bunsen's spectroscope.

R. Jarry has investigated the influence of reduced pressure and increased temperature in causing the compounds of silver chlorid with ammonia to dissociate somewhat like oxyhemoglobin. Perhaps the further study of such "loose" compounds may lead to an increase of our knowledge with reference to the properties of hemoglobin.



Fig. 1.—Film of white of egg fixed by steam while flowing between two cover glasses, showing the abrupt transition *a a* from network to the homogeneous substance (Hardy).

Haldane has discovered a quick and ready plan of liberating the oxygen of the blood by the use of potassium ferricyanid; but to insure success, the blood should be fresh, else bacteria will interfere with the result. Nicloux, employing Gantier's test for carbonic acid—namely, that this gas has the power of decomposing iodic anhydrid and forming carbon dioxide, while iodine is liberated and absorbed by copper—has endeavored to prove its presence normally in blood; and Louis St. Martin has estimated the quantity in the blood of animals living in towns to be 1.5 c.c. per liter. But as it is possible that during the application of this test, while the blood is being boiled with acetic acid, carbonic acid may be formed by combustion, in the absence of oxygen; and as several hydrocarbons at 60 degrees can reduce iodic anhydrid, and as other gases besides carbonic acid might respond to the test in a similar way, the results of Nicloux and St. Martin can only be provisionally accepted.

A fully satisfactory theory as to the coagulation of the blood has yet to be discovered. Probably, we shall not find it till we are better acquainted with the chemical constitution of the proteids of the blood. The view, however, which meets with most favor, and is open to fewest objections, is that there are three agents or factors concerned in the formation of fibrin, viz.: 1, fibrinogen, which is present in the plasma; 2, nucleoprotein derived in part from blood platelets, but chiefly from the shedding out, or perhaps from the disintegration of the white corpuscles; and 3, lime salts, in solution in the plasma. The nucleoprotein, by the action of the lime, is changed into fibrin ferment, and this ferment reacting with fibrinogen transfers its lime to the chief constituent of fibrinogen—thrombosin—

and thus give rise to fibrin. Pechelhaar is of opinion that fibrin is a *compound* of fibrinogen and lime, but it has been proved conclusively that fibrin contains no more lime than the fibrinogen from which it is derived. It is admitted that a lime salt is essential in some way in the coagulation of the blood, but the exact parts it plays is still undetermined.

Delezenne has succeeded in isolating an anticoagulant substance, of the nature of Lilienfeld's histon, from peptone plasma. He believes it is derived from the destruction of white corpuscles, but others hold that these corpuscles only leave the blood-vessels, and are not destroyed. The fact that a second dose of peptone injected into the veins of an animal shortly after the action of the first has disappeared, produces no anticoagulant effect, Delezenne explains by supposing that an antitoxin has been formed which protects the white corpuscles against their destruction by peptone. In favor of this view is the fact that the blood or serum of a peptonized or immunized dog when injected into the veins of another animal confers on it immunity from the action of peptone, snake poison, or extract of crab's muscle.

The formation of lymph is still a fruitful source of controversy. Some, as Heidenhain, regard it as in the main a secretion by the walls of the capillaries from the blood, while others maintain that it is the product of filtration and osmosis from that fluid. Asher and Barbèra have recently advanced the view that lymph is produced by the tissues and organs generally, such as the liver, the muscles, and glands; but the evidence in favor of it can scarcely be considered adequate.

Langley has caused the vagus and the sympathetic nerve in the neck of a cat to join together; and on applying stimuli, before and after the injection of nicotine, he has been able to prove that the nerve-fibers of the vagus make functional connection with the cells of the superior cervical ganglion of the sympathetic, and give rise to the same results on stimulation as the sympathetic did before the section.

There has been considerable discussion of late years concerning the causes of the entrance of oxygen into the blood in the lungs. Most physiologists, following Pflüger, and believing that the tension of oxygen in the blood is less than in the air of the alveoli, regarded diffusion alone as sufficient to explain the passage of the gas. But the results obtained, first by Bohr and recently by Haldane and Lorrain Smith, have induced many physiologists to consider this view untenable. Attention has accordingly been directed to the chemical affinity of the hemoglobin in the blood for oxygen. It is not likely that this affinity acts at a distance on the alveolar air; but undoubtedly the hemoglobin in the red corpuscles, by absorbing oxygen, is constantly lowering the tension of the oxygen in the plasma around them, as Foster has pointed out, and so indirectly causing more oxygen to enter the blood from the air cells by diffusion. The chemical affinity of hemoglobin is, therefore, an important factor, though it acts more as an aid to diffusion than as an agent or force by itself. Another hypothesis—that the cause depends on the secretion of oxygen by the endothelial cells of the alveoli, and perhaps by the capillary walls—has of late come into prominence. In favor of it we have the fact that in the secretion of urine, and possibly in the transudation of lymph, the endothelium containing living protoplasm discharges a somewhat analogous function. Again, there are some grounds for believing that epithelial cells may be the active agents in causing the passage of oxygen from the maternal to the fetal blood in the placenta. But the most important evidence in support of this view is found in the case of the swimming bladder of fishes, in which oxygen, nitrogen, and likely argon, are at one time secreted and at another absorbed under the influence of the nervous system.

Opinions are likewise much divided as to the causes of the exit of carbon dioxide from the blood in the lungs. Some physiologists endeavor to explain all the phenomena by diffusion; but we can not regard this process by itself as sufficient, if we accept Bohr's statement that the tension of this gas in the trachea is usually greater than its tension in the blood. But Werigo, while accepting this statement, has tried to prove that the diffusion hypothesis is correct. He alleges that the *actual* tension of the carbon dioxide in the blood in the capillaries of the air cells may be higher than the tension as made out by the aërotonometer, because oxygen on its entrance into the blood

breaks up the compound of carbon dioxide and hemoglobin—a very doubtful compound—sets carbon dioxide free, and thereupon raises its tension in those blood-vessels. But these grounds are insufficient to establish Werigo's supposition.

With regard, then, to the exchange of oxygen and carbon dioxide in the blood at the lungs, I think it must be admitted that though diffusion plays an important part, it is by no means "master of the situation," but is supplemented and largely modified by chemical affinity and possibly by the vital or secretory activity of the endothelial cells.

Lorrain Smith infers from a series of experiments on birds and other animals, that while oxygen at the tension of the atmosphere excites the cells of the alveoli to absorption, at a higher tension (say 180 per cent. of an atmosphere) it gives rise in twenty-four hours to inflammation of the lungs, and at a still higher tension (say 300 per cent. of an atmosphere) leads, as first pointed out by Paul Bert, to convulsions like those of tetanus, owing to its toxic effects on the nervous system.

G. N. Stewart, by what is known as the electric method, and also by the injection of methylene blue, has determined in the dog the duration of the circulation as a whole, and he concludes that in man the pulmonary circulation would take fifteen seconds and the entire circulation one minute. This is a longer period than that hitherto accepted. The mean velocity of the blood in the larger arteries of the dog has been found to be about 100 mm. per second—a rate less than formerly believed. He has also by the electric method made investigations in the dog as to the output of the heart, and infers that the output in man would not be much more than three ounces of blood for each beat.

The old view—that a man may increase in weight without the use of food—has been revived. Bouchard has ascertained that the increase may amount to one ounce in an hour, and he attributes it to the absorption of oxygen, or to its retention in the body, along with the production of glycogen, and the imperfect oxidation of fat; but Berthelot believes it is due to the formation of new substances, and the imperfect oxidation of albuminoids.

Pembrey and Nicol, with a flat bulb mercurial thermometer, have made a large number of observations on the temperature of different parts of the body, and have arrived at the conclusion that the temperature of the rectum is 0.26 degrees higher than that of the urine, and 0.65 degrees higher than that of the mouth; and that the mouth is not as trustworthy as the rectum for clinical observations. Pembrey thinks that the mouth, by increasing the loss of heat, takes part in the regulation of the temperature of the body during exercise.

The extract of the suprarenal capsule was injected by Langlois into the veins of the rabbits and dogs, but its presence could not be detected in the arterial blood a few minutes afterward. There is reason to believe that it is destroyed principally at the liver.

Information has been obtained regarding the movements of the stomach by observations made on animals immediately after death, and by means of the Roentgen rays alone, or after the administration of bismuth subnitrate with the food, during life. It has been noticed that shortly after the entrance of food the stomach becomes almost completely divided by a transverse band of contraction, about three inches from the pylorus, into the fundus and antrum pylori. The fundus is for the most part at rest, retaining the food as a reservoir for digestion, but at intervals pressing it through the constriction into the antrum. The peristaltic contractions of the antrum—about six per minute in the cat—always proceed toward the pyloric valve, and drive its fluid contents into the duodenum; but any solid masses present which may be too large to pass, are forced back by the antiperistaltic wave into the fundus, to be further acted on by the gastric juice.

Bayliss and Starling, by means of a "rubber capsule" and by "enterographs" have studied the intestinal movements in the dog. They have observed two kinds of movements in the small intestine—the "pendulum movements" and the true peristaltic contractions. The former, slight swaying movements, are caused by rhythmic contractions of the circular and longitudinal muscular fibers acting *simultaneously*, ten times per minute, and traveling with a velocity of 2 to 5 cm. per second. The

latter—the peristaltic contractions—travel as a wave, always from above down, and are, they say, “true co-ordinated reflexes, started by mechanical stimulation of the intestine and carried out by the local nervous mechanism (Auerbach’s plexus).” A local irritation of the intestine causes excitation above the spot stimulated and inhibition below it. Stimulation of the splanchnics leads to inhibition of the longitudinal and circular fibers; stimulation of the vagus nerves first produces a short inhibition and then augmentation. The splanchnics exercise a tonic action on the intestine, but the vagus nerves do not.

In connection with the peristaltic action of the intestine, it is interesting to note that Grützner has observed that liquids and particles, such as lycopodium spores, may, if placed in the human rectum, make their way to the stomach.

The entire stomach has been removed in man by different surgeons; the small intestine, nearly its whole length, has been cut out in the dog by Fillipi; and the large intestine, the greater part of it, has been excised in the dog by Vaughan Harley. In all these cases, when successful, digestion appears to have gone on as usual, except that after excision of the small intestine, fat was imperfectly absorbed, and after removal of the large intestine, proteids and water were only partially absorbed. Indeed, Mr. Treves, the eminent surgeon, states, as the result of his experience, that we “might possibly dispense with our present type of stomach;” and the removal of considerable portions of the intestine “has done no more than add to the comfort of those individuals who have recovered from the operation.” It is probable that after these operations, the remaining parts of the alimentary canal took on vicarious or abnormal action, and thus adapted themselves to the changed conditions. It is also, no doubt, true that care was taken to administer food easy of digestion. We can not, therefore, attach much importance to the results of such operations and experiments as guides to the use of individual parts of the alimentary canal. It might as well be contended that because a portion of the cerebral cortex of a dog can be removed without inhibiting the performance of most of its ordinary functions, the portion so removed was unnecessary.

Vaughan Harley recently isolated a loop of the large intestine of a dog, and after some months, he found that the contents consisted of fat, cholesterin, proteid and salts—which, he thinks, form the normal excretion of the large intestine—in fact, its contribution to the feces. Another observer, Moraczewski, described the excretion in a loop after the lapse of a year as made up principally of sodium carbonate. Voit, by a similar plan, ascertained the secretion of the small intestine to be fat, cholesterin, proteid, salts, with coloring matter. But in these cases the intestine can scarcely be said to have been in a normal condition. At any rate, the results obtained are discrepant, so that it is difficult to know what inference should be drawn from these.

Carbon dioxide is a constant constituent of the gases in the intestines. It is the product of fermentation, and of the neutralization of the sodium carbonate of the secretions. Moreover, it is derived from the blood by diffusion, as well as given off in the small intestine by the bile, which, as I showed in 1881, contains in the case of the rabbit a larger percentage of this gas than any other animal liquid.

Waymouth Reid’s experiments on the absorption of serum, peptone, and glucose from the intestines of animals by means of two loops of intestine—the experimental and the control loop—have led him to infer that the epithelial cells are essential agents, because absorption continues when filtration and osmosis have been excluded; and because it diminishes or ceases altogether after these cells have been injured or removed, as, for instance, when they have been poisoned with sodic fluoride, or when their blood-supply has been cut off. An attempt, however, has been made to explain results of this kind by the chemico-physical method. Thus, if we place a solution of gelatin in the inner cylinder of a dialyzer, and a solution of common salt in the outer vessel, the gelatin will not diffuse through the membrane, but owing to its affinity or “elective” action for the salt, will draw the salt to itself by what has been termed “adsorption.” Similarly, it is alleged that the protoplasmic contents of the intestinal epithelial cell do not diffuse, but being complex in chemical composition may contain imbibing substances of various kinds. These substances are supposed to

exercise an affinity for certain food stuffs, which they draw from the contents of the alimentary canal into themselves, and form “loose” chemical compounds with them, while they leave behind, untouched, other substances, for which they show no such affinity. Further, as cells differ in chemical composition, it is said, they will accordingly vary in their affinities; and it is alleged that it is no more extraordinary that epithelial cells should take up fat and not pigment, than that phosphorus should unite with oxygen and not with platinum. But that the cell contents have an affinity for such a substance as fat, and afterward form a compound with it, seems to be a mere conjecture; consequently this explanation, ingenious though it is, can not be accepted—if accepted at all—as having more than a limited application.

A few years ago it was authoritatively stated that bacteria are not only useful in digestion, but that death would ensue if the air and food used were sterilized. But the experiments of Nuttall and Thierfelder have shown this statement to be erroneous.

Aldehoff and Mering believe that they have proved by their experiments that the central nervous system exercises only an inhibitory influence on the stomach. They excised the vagus near the diaphragm, and observed that the movements of the stomach were unaffected; that the quantity of the secretion and the amount of hydrochloric acid in it were at first diminished, but afterward became normal; and that absorption was not interfered with. Riegel has experimented on the stomachs of animals after Pawloff’s method, and has noticed that atropin diminishes the amount of hydrochloric acid and of gastric juice secreted, but pilocarpin, especially if there was no food present, increases it five times.

Bunch, by using a plethysmograph for the intestines, has demonstrated the existence of vasoconstrictor and vasodilator nerve-fibers in the splanchnic nerves supplied to it, the vasoconstrictors being the more numerous. He has observed that nicotine, conin, and piperidin cause great constriction of the vessels, followed by slight dilation; that stimulation of the central end of the vagus produces either constriction or dilatation of the vessels of the small intestine, while stimulation of the central end has no vasomotor effect on these vessels.

The process of internal secretion is carried on by many of the organs of the body. The action of the kidney in this respect is not yet fully understood, but the remarkable results of Bradford indicate that it has an important influence in the nitrogenous metabolism of the tissues of the body. Bradford has removed two-thirds of the total kidney weight, and has observed that the urine is much increased, but the urea only slightly so. However, if three-fourths be excised, there is an increase in both the urea and the urine excreted, with an increase of the nitrogenous extractives in the blood and in the muscles, to a rapid breaking down of their substance. W. H. Thompson has ascertained that normal salt solution causes a marked increase in the urine and in the amount of urea in it, but he does not offer any explanation of the fact.

Many are now disposed, with Heape, to believe that menstruation in monkeys is virtually the same process as menstruation in women; that, in both, “ovulation does not occur during each menstrual period, and that it does not necessarily occur during any menstrual period,” and therefore may take place independently of it.

Vitzou has found that the blindness following entire removal of the occipital lobes in young monkeys may be recovered from in the course of two years. The recovery he attributes to the growth of new nerve-cells and nerve-fibers; but this supposition is very doubtful, as regeneration of nerve-cells is unknown in the higher animals.

Mott and Hill, after ligating all the cerebral arteries in cats, dogs, and monkeys, observed five to twenty-four hours afterward that the sensori-motor area of the cerebral cortex was in a very irritable condition, so that the application of a weak induced current gave rise to movements of the limbs, and sometimes even to fits. The cells of the cortex—their nuclei and processes—were all swollen, the granules of Nissl were altered, and the edges of the cells irregular. The interest in these results lies chiefly in the fact that corresponding changes have been noticed in the brains of persons who have died after prolonged epileptic convulsions.

Hodge and others, some years ago, described changes in the shape and size of the ganglion cells and of their nuclei as the result of fatigue. Recently, Lugano of Florence, by injecting Cox's solution—chiefly corrosive sublimate—into the carotid artery of a dog, killed it instantaneously, and at the same time fixed the nerve-cells of its cerebral cortex in the functional state they were in before death (Fig. 2). His results lead him to agree with Ramon y Cajal that nerve-cells and their larger branches are incapable of amoeboid movements, such as we find in the white corpuscle, but to believe that the small processes of the dendrites—the gemmules—exhibit forward and backward movements sufficient to make and break contact.



Fig. 2.—Cerebral cortex, showing nerve-cells with their dendrites and gemmules (Lugano).

Lugano thinks that the nerve-cell in a state of functional activity has few connections, lest the entrance of other impulses should interfere with the impulse which at the moment is being elaborated in its interior, and consequently the most of its gemmules are retracted (Fig. 3); but when it is ready to receive new impulses, the gemmules resume their expanded condition and approach others in their neighborhood (Fig. 4). In sleep as well as in the narcosis produced by chloroform, ether or chloral, the gemmules are usually all expanded and in a torpid state, their capacity for contraction being exhausted until sleep is nearly over. It is too soon to criticize the results of Lugano's experimental investigations and the ingenious theory he has based on them. But I may mention that Ramon y Cajal has not found any histologic change in the dendrites during activity; and that Alex Hill has adduced some reasons to show that Golgi's method is inadequate to prove a want of connection between the dendrites and unstained filaments in deed, Hill holds that the gemmules serve rather as a mode of connection between the dendrites and unstained filaments in the intercellular material. Then, if we keep in mind the possibility of some of the dendrites and gemmules being produced by the action of chemicals on the nervous tissue, as structure in

protoplasm has been shown to be by Hardy, there are undoubtedly good grounds for withholding our assent to any histologic theory of brain activity till these questions have been settled.

Horsley and Lowenthal have found that the removal of the cerebrum in certain animals is followed by tonic contraction of the extensor muscles, and that in such animals the stimulation of the superior vermis of the cerebellum, at its junction with the lateral hemisphere, leads to the relaxation of the extensor muscles, and at the same time to contraction of their antagonists, the flexors.



Fig. 3.—Dendrites of molecular layer of cerebral cortex of dog, representing state of functional activity. Gemmules retracted (Lugano).

It is now generally acknowledged that there is not sufficient evidence for belief in specific trophic nerve-fibers. The Gasserian ganglion and the part of the fifth nerve proximal to it have been excised, and no truly trophic effect has resulted.



Fig. 4.—Dendrites of molecular layer of cerebral cortex of dog in chloroform narcosis. Gemmules expanded (Lugano).

A rare opportunity for studying the characters and the secretion of the cerebrospinal fluid has lately occurred to Drs. St. Clair Thomson and Halliburton in the case of a patient who is described as having had a "continuous dripping from the nose." The liquid on examination proved to be cerebrospinal, and amounted to half a liter in twenty-four hours. The flow was observed to be increased by the horizontal posture, by compression of the abdomen, and by forced expiration—all of which usually cause in the capillaries of the brain a rise of blood-pressure. According to Cavazzani, the cerebrospinal fluid varies somewhat in composition at different periods of the day—that collected in the morning being more alkaline, and containing more solids than that in the evening, the difference, it is conjectured, being due to the activity of the nervous system.

Our views of the functions of the spinal cord have been considerably altered of late years, owing to the remarkable results which have been found to attend operations made on it. Goltz and Ewald, after destroying the lumbar and sacral regions of the cord in dogs, have observed that these animals in the course of time regained the power of retaining and spontaneously evacuating the contents of the bladder and rectum, while digestion as well as parturition took place in them as in normal animals.

There is still doubt whether, and if so, to what extent, the afferent fibers decussate in the spinal cord. Some maintain that in man they decussate almost completely; others that they do so only partially.

Schäfer has recently made hemisections of the spinal cord in the monkey, and as the result of his investigations has come to the conclusion that Clarke's column atrophies almost entirely in two or three months, on the same side, below the lesion, and that the fibers of the pyramidal tract do not terminate in the anterior cornu, but in the base of the posterior cornu and in Clarke's column. If this be the case, efferent impulses descending from the cerebrum by the pyramidal fibers would influence the motor cells in the anterior cornu of the cord indirectly, though the afferent arm of the reflex arc, and not directly, as hitherto believed. This view as to the termination of the fibers of the pyramidal tract is, however, so contrary to the results of all past observers, that it should not be accepted until it has been confirmed by further investigations. Besides, it has yet to be shown how these fibers terminate in the lower portion of the cord where Clarke's column is absent, and also that they are not diffused fibers belonging to some other descending tract. In addition, he has traced, he believes, the fibers of the descending anterolateral tract to the anterior cornu, where they end for the most part in arborization among its cells.

(To be continued.)

ORLEANS PARISH MEDICAL SOCIETY.

Meeting Held in New Orleans, La., July 22, 1899.

DIABETES MELLITUS AND COMPLICATIONS.

DR. P. L. CUSACHS related the case of a young white man suffering with a complication of diabetes mellitus, sclerosis of the liver and incipient pulmonary consolidation. Observations on the daily quantity of urine—up to 10½ pints—and on the contained sugar were read in detail. The treatment had consisted in the administration, successively, of pancreatic essence, guaiacal, aromatic sulphuric acid, arsenauero, etc. No treatment had had any beneficial effect, the patient growing gradually weaker. Dr. Cusachs suggested that the hepatic disease might be an etiologic factor in the case, interfering with the glycogenic function of that organ.

DR. H. B. GESSNER told of a case of diabetes mellitus in a stout colored woman of 60 years. The cure appeared to have been effected by the use of antipyrin, codein sulphate and arsenic, the latter in the form of Fowler's solution. The usual dietetic instructions had been given. Fluid extract of eugenia jambolana, endorsed by H. A. Hare in the treatment of diabetes mellitus had been administered at one time, but had been ill-borne by the patient's stomach. At the time when the patient was last seen, some three months ago, no sugar was found in the urine; there was complete relief from symptoms. Treatment had lasted two years.

DR. A. NELKIN thought it was jumping at conclusions to have a diagnosis of diabetes mellitus or polyuria associated with glycosuria. Likely these are the common symptoms of several diseases affecting the nervous system, the liver or the pancreas, and differing from each other as widely as cancer and tuberculosis, both of which cause wasting. He referred to glycosuria of alimentary and of alcoholic origin respectively, probably neither of them a true diabetic condition.

DR. F. A. LARNEY thought it unwise to depend on polyuria and polydipsia as symptoms. Of three persons at present under his care for diabetes mellitus, not one has polydipsia, while but one has polyuria. As to the specific gravity of the urine, in his experience this had proved misleading, as he had found sugar in urine of as low a specific gravity as 1602.

ANCHYLOSTOMIASIS.

DR. C. HAMILTON TEBAULT, JR., presented a case convalescing from anchylostomiasis or tropical anemia. After quoting Patrick Manson on the disease, he detailed the case as follows: G. H., aged 15 years, of German extraction, was born in New Orleans, where he has always resided. His father died of cardiac disease; there is no family history bearing on his trouble. About 1½ years ago he began suffering with epigastric discomfort, loss of appetite and weakness, with paroxysmal diarrhæa. He was treated in the Out-Clinics of the Charity Hospital for pernicious and for malarial anemia. When admitted to Dr. Tebault's service, the boy's anemia was marked; the lips, tongue, and conjunctivæ were very pale; there was edema of the hands, feet and lungs. The temperature ranged up to 101 F.; there was a hemic bruit at the base of the heart; the urine, of 1008 specific gravity, had no albumin in it. There was capricious appetite, with headache, vertigo and spots before the eyes. Diarrhæa alternated with constipation. There was no emaciation.

Examination of the blood showed plasmodia; red blood-corpuses, 2,500,000 to the c. mm. Examination of the feces revealed the presence of the ova of the anchylostoma duodenale. The patient then weighed 79 lbs.

Thymol was given in 10-grain doses three times daily on an empty stomach for two days; meantime alcohol was prohibited on account of the danger of its dissolving the thymol and thus producing toxic effects. At the end of the second day castor-oil was given; at the end of the fourth day, 3i of male fern was given, followed by dose of castor-oil. Numerous anchylostomata were expelled. The lad was then put on arsenauero and compound syrup of the hypophosphites. His appetite improved, his headaches troubled him less. The red blood-corpuses increased in number. The male fern was administered a second time. The result of the treatment has been that the weight rose to 85 lbs., the number of red blood-corpuses to 5,540,000 per c. mm.; the mucous membranes regained their normal color, the temperature fell to normal, and the edema and cardiac symptoms disappeared.

"CALENTURA."

Dr. Tebault also discussed "Calentura," a fever observed in Cuba during his service there as an acting assistant-surgeon, U. S. A. This word, which appears to have a general meaning of "feverishness," is applied to a febrile attack of one paroxysm, beginning with a chill in the early morning or late at night. Sometimes there is only a sensation of chilliness. The temperature rises to 103 or 104 degrees, falling on the fourth or fifth day, in mild cases as early as the second day. The pulse is relatively slow. Jaundice is unusual. Headache, capillary stasis and pain in the calf of the leg are present, as in yellow fever. The liver is large, the spleen large and tender. Gastric symptoms are frequently absent altogether, and when present, are of but short duration. Instead of the acute prostration of yellow fever there is a debility which lasts for weeks, and which, in foreigners, may not disappear until some time has been spent away from Cuba, in a more healthful country. Albuminuria is absent.

In the rare cases of death, for the mortality is practically nil, the appearance of the organs is such as would be expected in death from congestive chill.

There seems to be no connection between yellow fever and calentura; neither protects against the other; the latter is a recurring disease, usually attacking Cubans at least once a year, and sometimes as often as three or four times a year. Blood examination in the cases seen by the Doctor revealed the presence of plasmodia; but these are present in all cases of disease in Santiago.

The treatment consisted in the administration of quinin and strychnin, with liquid diet; turpentin enemata were used to keep the bowels open.

DR. T. S. DABNEY called attention to the fact that anchylostomiasis is not confined to tropical countries, having been observed in Switzerland. As for calentura, he had come in contact with a disease of that name in South America; this had proved to be simply intermittent malarial fever, yielding promptly to quinin.

DR. W. M. PERKINS, who had also observed calentura in Cuba, during the late war, was of the opinion that it is a malarial disease; the natives treat it with quinin.

PURE FOOD.

DRS. J. A. STORCK and L. KOHNKE discussed pure food, the former from a chemical, the latter from a legislative standpoint; attention was called both to the deliberate adulteration of food products with noxious substances, and to the use of such chemicals for purposes of preservation.

THE
Journal of the American Medical Association

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance	\$5.00
Foreign Postage	2.00
Single Copies	10 Cents

In requesting change of address, give old as well as new location.

Subscriptions may begin at any time and be sent to

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

No. 61 Market Street, Chicago, Illinois.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, 100 Washington St., Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

These new members of the Association should send their annual subscription direct to the Treasurer, Dr. Henry P. Newman.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the Editor, and all communications relative to the business of the JOURNAL, proof-sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 61 Market Street, Chicago.

Original communications are accepted with the understanding that they are exclusively contributed to this JOURNAL.

SATURDAY, AUGUST 26, 1899.

UNSOLVED PROBLEMS AND FUTURE WORK IN
TUBERCULOSIS.

Great as is the progress of the last ten to fifteen years, in the study of tuberculosis, there yet remain many and weighty problems to be solved before we can hope for more decided results in our efforts at staying the ravages of this widespread disease. In a recent lecture¹ Dr. E. L. Trudeau of Saranac Lake, N. Y., presents the aspect of some of these questions relating to tuberculosis in a manner which surely is helpful to all who are directly or even indirectly interested in this matter.

He points out that more knowledge of the conditions which lead to variations in the manifestations of the disease is necessary. We are in the habit of explaining these differences as due to variations in virulence of the germ and in the resisting power of the tissues. But upon what factors does variation in virulence depend? And wherein lies predisposition, be it individual or racial, inherited or acquired? Among the various channels of access to the body more attention should be given to adenoid growths in the nasal fosse, as this part of the respiratory tract is probably a more frequent channel of invasion than is suspected.

Among the problems in pathology, Trudeau emphasizes the need of thorough study of the chemical changes which occur in tuberculosis in the digestive secretions, and of the anemia in this disease. The secret of the nature of the changes which result in cure in peritoneal tuberculosis after laparotomy has not been solved. Perhaps much light could be thrown on some of the issues connected with acquired immunity if we could learn

the mechanism whereby the bacilli are made innocuous. What is the exact significance of the appearance of bacilli in the milk, urine or semen? Are they excreted or is there always active tuberculosis in the organs when bacilli are found in the products? The botanic position and the possible occurrence of the tubercle germ in nature are also among the problems suggested by Trudeau when he discusses the nature of this microphyte and asks, is it a bacillus at all? The relation of the germ of tuberculosis to the ray fungi, the grass and dung bacilli of Moeller and the acid-proof bacilli described in butter is now one of the questions that invite investigation.

In respect to prophylaxis, some way of determining to what extent there is danger in the spraying of bacilli in fine particles of mucus and saliva by the act of coughing and talking, as demonstrated by Flügge's recent work, would be of great value to preventive medicine. It has been shown at Saranac Lake that the hands of patients using handkerchiefs may, in the majority of cases, be the carriers of unsuspected bacilli. "Practical suggestions as to the education of the masses in regard to the sources of infection, and studies which will give us more light on the best and most practical methods to guard against them would be of inestimable value." The value as a prophylactic measure of state and municipal sanatoria and special hospitals in educating patients and removing from crowded communities individuals who are a constant source of danger, needs but to be mentioned in order to be appreciated. Hence, all facts in regard to the management and construction of such institutions are greatly desirable.

And then come the problems of bacteriology and physiologic chemistry relating to methods of exaltation and attenuation of virulence, of obtaining toxin of fixed strength, and to the study of the various chemical substances elaborated by the germs of tuberculosis. The probable value for future research of the collodion sac method of cultivating microbes, previously mentioned editorially in the JOURNAL, is pointed out. Collodion sacs partly filled with fluid media and inoculated with germs are inserted into the abdominal cavity of animals. The walls of the sac allow a slow interchange between the fluid in their interior and the fluids of the animal incubator, the bacteria are protected against the cells, toxic substances are slowly disseminated into the body of the animal, but the germs are not disseminated. The influence on the germs of cultivation under such circumstances opens an interesting field of study, as also the effects of freshly and continuously elaborated toxins on the animal organism; new methods of producing immunity and obtaining antitoxic substances suggest themselves. Already Nocard has succeeded in making the human tubercle germ pathogenic for fowls, by cultivation in collodion sacs inserted into the peritoneal cavity of chickens, and Vincent, in transforming saprophytic bacteria into virulent, by repeated passages through animals, in collodion sacs.

¹ Bull. Johns Hopkins Hospital, 1899, No. 10, p. 121; JOURNAL, August 12, p. 470, * 7.

The necessity of bringing to light the true facts as to the exact value, the limitations and possible objections to the use of the tuberculin reaction in diagnosis is brought out forcibly. It is pointed out that there is no evidence of this test being dangerous or tending to aggravate the disease. Virehow's statement that tuberculin-treated patients revealed many new tuberculous foci at a distance from the old lesions contains no proof that the bacilli are scattered through the system as the result of the injections. Broden's study of experimental, peritoneal tuberculosis of dogs treated by tuberculin injections shows the rapid development in larger numbers of nodules containing much fewer and more degenerated bacilli than in the control animals.

Trudeau also lays stress upon the use of X-rays in the diagnosis of incipient tuberculosis; the height of the excursion of the diaphragm and the presence of a light shadow over the suspected area in the lung may help greatly toward reaching a correct conclusion even before unmistakable symptoms are present.

Finally the problems connected with the treatment and especially with the production of an efficient antitoxic serum are considered. In opposition to the conservative view which sees no hope that artificial immunity against tuberculosis can ever be produced especially because the natural history of tuberculosis shows that recovery from a tuberculous process does not afford protection against future attacks, Trudeau finds considerable evidence in his own work as well as in the result of others in favor of the claim that the resistance of the body to virulent tuberculosis can be greatly increased by preventive inoculation. Failing to obtain appreciable results by inoculation of cultural products and of dead bacilli, he, like de Schweinitz, has of late used living germs attenuated by various methods. Cultures of mammalian bacilli attenuated by prolonged growth on artificial media have been found by both de Schweinitz and Trudeau to protect guinea-pigs in a marked degree. By this method of attenuation the biologic characteristics of the germs are least altered, the organisms merely losing those attributes which are not called into use, in this case the specific pathogenic powers. In 36 control animals, the average life was 57.2 days, in 66 vaccinated animals it was 154.3 days. As yet, however, complete recovery has not been secured, although vaccinated pigs have lived for three years in good condition, ultimately dying of chronic tuberculosis. This may mean that the disease is not auto-inoculable and that an animal with a very chronic experimental tuberculosis is not susceptible to reinoculation with a more virulent material.

Here then have been indicated problems enough of great practical and scientific importance, inviting the efforts of the enthusiastic investigator and the patient student, efforts which merit the support of the state and private munificence.

It is reported that anterior poliomyelitis prevails in epidemic form in Poughkeepsie, N. Y.

WEIGHT AND NUMBER OF THE FUNCTIONATING CORTICAL CELLS.

In 1872 Meynert estimated the number of nerve-cells of the cortex of the convex surface of the cerebral hemispheres in round numbers at 612,000,000. In 1895 Donaldson, taking Meynert's calculation as a starting-point, estimated the total of cortical cells at 1,200,000,000 and in the whole nervous system at 3,000,000,000. In 1895 also, Hammarberg published a very minute and careful study of the size and arrangement of the nerve-cells in the human cortex, which has been already noticed in the *JOURNAL*. He did not, however, apparently carry out his calculations to the estimation of the total number of cells in the cortex of the brain, and it remained for a woman, Miss Helen Bradford Thompson, to take up the subject and apply Hammarberg's methods to solving the question. Her paper appeared in the June issue of the *Journal of Comparative Neurology*, and by adopting the data as to dimensions and arrangement of nerve-cells given by the Swedish investigator, supplying as far as possible their omissions and applying them in detail to all the separate cortical regions, she comes to the conclusion that they indicate the total number of cells in the cortex to be the astonishing figure of 9,200,000,000, or nearly eight times the estimate of Donaldson.

Using the same methods of measurements of cells for estimating their proportion of the volume of the cortex, Miss Thompson concludes that the grand total of all these 9,200,000,000 cells amounts to only 1.37 per cent. of the substance of the peripheral gray matter of the hemispheres, a conclusion hardly less remarkable than the other. Inasmuch, however, as Hammarberg's method—alcohol hardening followed by methylene blue—did not bring out the dendritic processes, this estimate is possibly too low, and Donaldson, in his comments on Miss Thompson's work, allows 0.63 per cent. for these, making a total of 2 per cent. in round figures, including in this also the terminals of the axones ending about the dendrons. The figure is small enough with the addition and is, in a manner, still a shock to the average preconceptions on this point. The article still gives another calculation that is perhaps still more directly suggestive in relation to the function of these cells. Using the same data to compute the number of giant cells, usually considered as distinctly motor and located in the accepted motor regions of the cortex, she finds them to number 159,690. Bloq and Ozanoff had already determined the number of pyramidal fibers of one side of the body to be 79,111. Doubling this we have 158,222, a number very nearly corresponding to the number of giant cells, according to Miss Thompson's calculation. The most of these are found in the upper and mesial portions of the anterior central gyrus containing the centers for the trunk and limbs. The significance of the figures is obvious. The cellular origin of the motor fibers for the head and neck, she suggests, not being provided for in these calculations, must be looked for elsewhere than in

the giant cells, probably in the large pyramidal cells of the fifth layer in the lower portions of the motor region, where are situated the head and neck centers.

Immediately following Miss Thompson's paper is one by Prof. H. H. Donaldson, where he discusses the significance of this small total volume of the nerve-cell bodies in the cerebral cortex. Hammarberg has shown that a comparatively slight deviation from the normal development of these cell bodies suffices to impair the intellectual faculties to the extent of producing imbecility. Donaldson's estimate of the average weight of the cortex is 658 grams, which seems certainly liberal enough, and 2 per cent. of this would give for the cell bodies and their dendrons only a total weight of a little over 13 grams, which leaves only a very small margin for changes of brain weight dependent on alteration or deficiencies of these bodies. The real differences, nevertheless, are considerable, amounting to as much as 134 grams between the average brain weight of eminent men and that of the ordinary individual (1360 grams), and 142 grams between the average male and female brains. The mean difference between the brain weight of the prime of life and that of old age, 55 grams, is more than four times that of the total of cortical brain cells. Admitting the possibility of a certain range of variation in the number and complexity of the neurons in different individuals, the excessive variation will still have to be accounted for. Donaldson finds the most probable explanation in an increase in the axone portion of the neurons and, therefore, practically insignificant for any physiologic complexity of the cortex. Whether this last inference is entirely justifiable may be questioned, perhaps, as the abundance and development of commissural connections has no unimportant part; it is probable that in cerebration, any greater bulk and weight of the axone mass may be taken as possibly pointing directly to such a development, which in turn could hardly fail to increase the functional complexity of the receiving and transmitting cortical mechanisms—in other words, their physiologic complexity. This fact is undoubtedly recognized by Professor Donaldson, though he fails to make it prominent.

There are some other points noted in his paper, such as the fact that the weight of the child's brain is nearly as great at 6 or 7 years as at maturity, which Donaldson is also inclined to account for by an increase of medullary substance, and the lack of difference between the hemispheres, notwithstanding the functional predominance of one over the other. In the case of the child, we will have to assume a provision made for future development, as the physiologic complexity at that age can not be assumed to be as complete as at maturity. There must be a potential complexity there, so to speak, and this may be provided for to some extent anatomically. As to the hemispheres it is easy enough to assume that the actual anatomic differences corresponding to the functional ones need not be so great as to materially affect brain weight.

The two articles, while giving new data as to the anatomy of the cerebrum, are especially suggestive in many ways and deserve more attention than they have apparently as yet received from the medical press.

THE DEPARTMENT OF PUBLIC HEALTH.

"There is to-day in the United States a striking need for a legislative committee so constituted that by virtue of its representative character it can speak for and in the name of the great medical profession." This vigorous statement by Dr. Charles A. L. Reed, in his London letter published in the *JOURNAL*, August 19, is deserving of especial attention from the members of the ASSOCIATION at the present time. The remark was made apropos of Dr. Reed's observation of the powerful influence wielded by the Council of the British Medical Association, on English legislation and state medicine. For years all the thoughtful men in our American profession have seen and said that, until it is thoroughly organized, the profession can not adequately exert that power for good which is inherent in its possession of knowledge, that can and must be applied for the general welfare of the nation. The machinery for the formation of a powerful representative committee was set in motion at the Columbus meeting of the ASSOCIATION, by the unanimous adoption of the resolutions offered by Dr. L. B. Tuckerman from the Ohio State Medical Society, which provide for the appointment by the ASSOCIATION of a special committee on national legislation, of three members, one of whom is to be the member of the Board of Trustees resident in the District of Columbia, and the others resident in Philadelphia and Baltimore. The resolutions further authorize this committee to invite, in the name of the ASSOCIATION, the army, navy and marine-hospital medical services, and each state medical society, to send one delegate each to a conference to be held at Washington, D. C., at such time as the committee may determine. It is further provided that this conference shall consider medical and sanitary legislation now pending. Also at the Columbus meeting the Committee on Public Health, of which Dr. U. O. B. Wingate is chairman, was ordered to continue its work in furthering the passage of the bill to create a department of public health. These actions of the ASSOCIATION received, previous to their unanimous adoption, the recommendation of both the business committee and the Board of Trustees, and funds were appropriated for carrying them into effect.

These committees are fully prepared to carry out the will of the ASSOCIATION and they must have the undivided moral support of the members. It is not too soon now to consider the campaign which is to be waged in Congress this winter for the passage of the Spooner bill, establishing a department of public health. The conference of representatives of the state societies, to be called by the ASSOCIATION'S Committee on National Legislation, will no doubt be held during the session of Congress, and by its presence and action will exert a

great influence on that body. But, as Dr. Wingate pointed out in his report, the chief obstacle so far met in the attempt to secure the passage of this law has been the lack of information on the part of members of Congress concerning the importance to the nation of the proposed legislation. During the three autumn months now intervening before Congress assembles will occur the most favorable opportunity for the profession to individually and collectively educate the members on these points. Many members of this Congress are new and know little or nothing of previous efforts of the profession, or of the arguments it has advanced. Physicians everywhere should see and write to their nearest senators and representatives strongly urging on them the facts and reasons that imperatively demand the institution of a department of public health, with a cabinet officer at its head. The new problems now arising in connection with tropical diseases, as well as many old ones, plainly show that such a department as the ASSOCIATION asks would now be of inestimable value to the other departments and to a still greater degree to the general public. Literature urging these facts should now be sent to congressmen through the personal medium of their constituents, thus effectively preparing the way for the great contest to be waged this winter. Let every member of the ASSOCIATION, and indeed every physician, now get to work, for there must be no question of the profession's success in its efforts at the coming Congress.

ASSOCIATED POLIOENCEPHALITIS AND POLIOMYELITIS.

Probably no influence is more potent in the domain of the etiology of disease than the various toxic processes. Closely related with these, and of scarcely less importance are the infectious processes. The latter are necessarily of extrinsic origin; the former may be also intrinsic. Infectious processes arise necessarily from the activity of micro-organisms, and these are invariably derived from without. Poisonous substances, however, not only may be derived from like sources, but they may also be generated within the body—for instance, on the one hand, alcohol, lead, mercury, opium, strychnin, etc., and on the other hand the toxic substances responsible for the manifestations of uremia, of diabetic coma, etc. Intoxication may further result through the activity of substances generated by infecting bacteria; from failure in the activity of certain glandular organs, as of the thyroid in myxedema, of the adrenals in Addison's disease, of the pituitary in acromegaly, of the pancreas in diabetes; and of excessive glandular activity, as of the thyroid in exophthalmic goiter. Many of the poisonous substances under consideration, while capable of widespread injury, appear to possess better or less defined affinities for certain special structures or organs, and of all of these the nervous system seems to be the most susceptible. Apart from traumatism, neoplasm, aneurysm, vascular occlusion and hemorrhage, hyperplastic processes and other mechanical conditions, almost all diseases of the nervous system may be attributed to in-

toxication or infection. Recent additions to our knowledge of the finer histologic structure of the nervous system have done much to establish the connection between pathologic processes and clinical manifestations, and to confirm certain analogies between the brain and the spinal cord, each of which is endowed with certain independent functions.

The foregoing considerations help us to understand not only how different parts of the same nervous tract, but also how various disconnected and even widely separated portions of the nervous system may suffer simultaneously in consequence of the activity of a single morbid process. Thus we may have, on the one hand, disease of the cells of the anterior horns of the spinal cord or of those of the nuclei in the medulla and also of the related peripheral motor nerves; and on the other hand, the disseminated lesions of insular encephalitis and myelitis, or of insular cerebrospinal sclerosis, or simultaneous inflammation or degeneration of the gray matter of the brain and the spinal cord. An interesting illustration of the last-named association has recently been reported by Williams¹. The patient was a girl, 11 years old, without signs of congenital syphilis, who had been paralyzed for six years. At the age of 5, while in apparently good health and in the absence of any history of any infectious disease, the child, on coming home from school one day complained of severe pain in the head, over the left temporal region. Later, a convulsion took place, and subsequently the face was drawn to the left, while speech was lost and the right upper and lower extremities were paralyzed. The facial palsy gradually improved and the power of speech returned in the course of about fourteen months. The child attended school, but learned slowly and was exceedingly forgetful. The right arm was found spastic, with the elbow more or less flexed, and the fingers flexed or extended and rigid, all movements being slow, incomplete and usually tremulous. The circumference of the right arm was one-fourth inch greater than that of the left, probably in consequence of the constant choreiform movements. The electric reactions were normal. The heart and lungs were healthy. The circumference of the right leg was one inch less than that of the left. Pescaevus existed and for its relief tenotomy had been performed. The electric reaction of the flexors seemed normal, but the peronei yielded reaction of degeneration. The kneejerks were present. The unilateral distribution of the symptoms, the involvement of speech and of the facial muscles, the absence of degenerative electric reaction and the preservation of the reflexes in the affected upper extremity point to a lesion of the cerebral gray matter, while the wasting of the lower extremity with reaction of degeneration indicated a lesion of the spinal gray matter—a polioencephalitis.

DR. A. DUVAL ATKINSON, Baltimore, Md., has been elected lecturer on diseases of children at the Women's Medical College.

¹ *Lancet*, July 1, 1899, p. 22.

THE REACTION OF DEFENSE.

A French professor, M. Soulier of Lyons, explains the Widal reaction in typhoid as a defensive act of the organism, an illustration of the old *vis medicatrix nature*, instead of it being merely an indication of an infective process. It is, according to him, only one example of the action of a defensive power of the system, others of the same general nature being the phenomenon of Pfeiffer, the alkalinity of the serum, leucocytosis assisting phagocytosis, the appearance of bile coloring matters in the stool and urine, the diazo-reaction, etc., all of which point to a special call for some element needed in the organic defense against infection and disease. His ideas as to the vital reaction against disease are not so altogether new, but his suggestion of possible therapeutic indications in these phenomena hitherto reckoned as chiefly or solely of diagnostic value, has, in it, some element of novelty.

REFORM OF THE PRESS.

In the state of Colorado where the great and good Governor Thomas decides questions of medical reform, and where, according to Dr. Rothwell, he is backed in this by an almost united press, there would seem to be need of something above the mere state law to take a hand. According to the *Rocky Mountain Druggist*, editorially quoted in the *Colorado Medical Journal*, the holiday editions of Denver's great dailies are a "sizzling slough of nauseating obscenity," and "the lost manhood" department of a daily paper is its most prolific source of revenue. The "depraved womanhood" department is probably not far behind." The publisher of a daily paper in the wicked city of Chicago conducted his journal apparently on the plan of the Denver dailies, and had, as a result, to retire for a time to the walled city in Joliet to meditate over his misdeeds. It would be well if some public-spirited citizen of Colorado would call the attention of the United States Courts to these "sizzling sloughs." It would be on a line of medical reform that Governor Thomas could not undo.

AN UNREASONABLE HEALTH OFFICIAL.

A health officer of Detroit is reported as having refused to permit the remains of a person who had died of consumption to be taken into church for the funeral. We do not know all the circumstances, but, as reported, it certainly was a case of overdoing on the part of, to all appearances, an inexcusably ignorant official. If instead of a dead consumptive in a coffin, it had been a living coughing one, his procedure would have been more rational, though even then hardly justifiable. In the present general scare about tuberculosis there is very much that is altogether unreasonable, and health officials and physicians should be among the last to unduly encourage it. We are constantly increasing our list of contagious diseases, but the mortality from them will not be appreciably lessened by exaggerating their dangers. Fear is a very appreciable factor in increasing mortality, and serious mischief may be done by its encouragement. As our knowledge of germs increases, we are constantly finding them in places where they were before unsuspected, and thus giving chances for new fears. If the Detroit official's ideas hold sway, we may yet have to

limit church funerals to cases of violent death or those from natural decay of old age.

THE EVOLUTION OF A TESTIMONIAL.

Viewing in perspective the history of the testimonial, there may be observed in its character a regular, logical development. This evolution resembles closely that of Nature, being steadily from the simple to the more complex. Primatively it consisted of a few words from the indulgent physician as to the value of the preparation, sometimes conscientiously given, sometimes without any knowledge, and sometimes perhaps against his judgment. There then came the period of corruption in which the need of the manufacturer and the need of the testimonial writer embraced like long-lost brothers the first wanting praise, the second no less avid of money. The pathologic pathologist and the sick clinician wrote articles which were marvels of unscience, chronicling myriads of miracles in such stupid and hypereulogistic terms that the trick became manifest even to the most unwary, and the second dynasty suddenly ended. We seem to be in the third stage, where the genuinely scientific, well-written article is brought ready-made to the physician, who forwards it to the editor as an original contribution. This poor man is sorely puzzled and full of wonder as to where the physician who sends the article obtained the excellent laboratory experience evident in his work, and where on earth he learned the polished literary technic contradicted by every line of the personal letter he writes. The fourth stage that threatens, who may predict its garb?

REFORM IN THE ENGLISH GENERAL MEDICAL COUNCIL.

Dr. Horsley's—we call him Doctor on general principles—report to the registered practitioners of England and Wales, in the *British Medical Journal*, August 5, is in some respects interesting reading. It states facts that are not specially creditable to the president and some other officials of the General Medical Council, a body which it would seem from this document has been altogether too much interested in the preservation of abuses instead of reforming them. Appreciating the fact that Dr. Horsley would be a disturbing element in this state of affairs, an embargo was laid by the president on him or any other member having access to documents, and this was supported by a misleading opinion of the legal adviser, and the council therefore supported the presiding officer. This prevented him from discovering and thwarting the scandalous prosecution of Dr. Hunter, which he shows was carried out by the penal committee and the lawyers without authorization from the Council as a whole. The result was a judgment which he characterizes as "a farrago of ignorance and rubbish" that has only had the effect of "rendering the use of medical titles and especially of all university degrees by medical practitioners most unsafe." He also shows that he has been able to call to account the Penal Cases Committee and to discover that the legal counsel who had posed as official representatives had really never been so authorized. The body evidently needed the labors of a reformer and it is fortunate in having obtained so able a one. The report is full of suggestive statements that indicate rather than fully state the condition

of affairs that has heretofore existed. Our interest in the matter is only a general one, but we share the satisfaction that every well-wisher of the profession must feel when he sees wrongs being righted and time-honored abuses overthrown.

THE DISEASE OF INEBRIETY.

Of late years the opinion that inebriety is a disease has been so largely put forward that it has, with many, quite obscured the fact that it is also a vice. In common usage the term covers every form and degree of excess in the use of liquor, from periodic dipsomania—which it may be said does not cover every form of occasional spree, as some would have it—to the common besotted habitual drunkard. It, like charity, certainly covers a multitude of sins, and it would be well for us to keep in mind this fact. Only in a small proportion of cases is drunkenness due originally to a disease properly so called. There are very few drunkards who have been irresistibly impelled to their depraved appetites, and there can not be said to be such an overwhelming majority of them who could not reform were they willing to take themselves out of the reach of temptation. They are very largely the victims of vicious self-indulgence, and this fact should not be forgotten or obscured by a theory that they are subjects of disease, which would naturally imply that they were also innocent victims. Many are, it is true, handicapped by heredity or environment, and to that extent they deserve some sympathy, but it should be intelligent sympathy, not the kind that ignores facts and perverts conduct. One of the worst effects of this popular notion that inebriety is a disease is its encouragement to quackery. The numerous "gold" and other cures are the direct results of this notion, and their too often ultimately damaging effects are one of its consequences. It would be well for medical societies that are called on sometimes to endorse the views of the pathologic nature of inebriety to bear in mind these aspects of the question.

JUVENILE SCROFULA AND PHTHISIS.

According to *Pediatrics*, August 1, the opinion that tuberculosis in some form or other is an almost universal affection, is getting to be general. It refers to a recent research of Volland who, on examining 2500 school children, found that between the ages of 7 and 9 no less than 96 per cent. had indolent, multiple, engorged cervical glands, which he holds to be a purely tuberculous manifestation. The percentage decreases each year until in adult life the number of individuals who present the symptom is comparatively small. That is to say, the vast majority of children are infected with tuberculosis and present its lesions in a modified form. It is not surprising, therefore, that some of the weaker ones fail to escape it in later life. This goes further than the observation of Kelsch, who found evidence of "latent" tuberculosis in two-fifths of young persons. Blos of Heidelberg, on the strength of these findings of Volland and others, according to *Pediatrics*, scouts at the idea of the diffusion of tuberculosis by inhaling infected air and drinking infected milk, and returns to the old view that gland scrofula almost always precede tuber-

culosis, and that one who develops consumption is self-infected from his own tissues. The editor of *Pediatrics* judges from the agreement of several distinguished pediatricists at the Berlin Tuberculosis Congress, that the best and most certain mode of arresting the spread of the disease would be the treatment of scrofulous children in seaside sanatoria, that they were inclined toward the same views as Blos and Volland. His suggestion that the profession immediately set to work to confirm or disprove these views is one worthy of attention. Its practical bearing on the whole question of tuberculosis is obvious.

IS THE BIRTH-RATE IN THE UNITED STATES DECREASING?

What may serve as food for proper thought, especially for its bearing on the subject of overpopulation in the United States, is that of the birth-rate throughout the land. Aside from its medical status, this question is one which may engage the sober thoughts of wiser heads who come to deal with political economy as it applies to our country. In proving the subject of the birth-rate we have to fall back on that notorious factor of inaccuracy known as "statistics." In a recent editorial in one of our daily papers, a writer endeavors to prove that the birth-rate in the United States is gradually decreasing. This statement is backed by the statistics as obtained from the records of H. T. Newcomb, a statistician in the agricultural department at Washington. First of all it is believed that the population of the United States—not including colonies—in the year 1900 will be 74,480,860, based on the different state censuses. The increase for the past decade has been 18.94 per cent., which is below that of any previous decade. If the population had increased in the past decade in the same ratio as formerly, the population in 1900 would be 77,680,000, yet it is seen that the population will fall short of this number by 4,200,000. Of this loss it is estimated that 1,622,480 may be allowed for decrease of immigration and to children which might be born to them. However, there remains a loss of from 2,000,000 to 2,500,000 in the population if the increase in population is in the same ratio as in that period from 1880 to 1890. This loss of 2,000,000 to 2,500,000 is believed to be due to a decreased birth-rate, in both the negroes and whites. The writer states that in 1890 there were 1,800,000 less children under the age of 10 years than were expected, judging from the statistics of 1880, and it is believed that this decade will show even greater loss. This decennial loss has gone on for the past 100 years. It is claimed that whereas the native white population a century ago was 35.10 per cent. from 1790 to 1800, from 1890 to 1900 Mr. Newcomb claims that it will probably be only 25 per cent. Statistics show that increase for our total population was 30.08 per cent. from 1870 to 1880; 24 per cent. from 1880 to 1890, while it is believed this decade will only show an increase of 18.94 per cent. It is further pointed out that should this decrease in the birth-rate keep up, within twenty years the increase in this country will be only about that of European countries like England and Germany.

Medical News.

BY THE will of the late John Gillespie of Philadelphia the sum of \$10,000 has been left the Methodist Episcopal Hospital of that city.

DR. WILLIAM PORTER has been elected to the chair of physical diagnosis and diseases of the chest in the Beaumont Medical College, St. Louis.

BY THE recent death of Mr. Zephirin Chapleau, Quebec, Notre Dame Hospital receives \$10,000, the Hotel Dieu \$3,864 and the Sisters of Providence \$6,304.

OWING to the appalling loss of life from the storm in Porto Rico, the sanitary condition of the island is thought to be in a dangerous condition and a serious epidemic of disease is feared.

WHEN President Faure was in St. Petersburg, in 1897, he laid the corner-stone of a French hospital to be erected at the expense of the French Government. It is now practically completed and is to be named after the Countess Montebello, the wife of the present French ambassador, as it in great measure owes its existence to her efforts.

PROFESSOR BANDISSINI of Marburg has received simultaneous calls to Berlin and Bonn. . . . P. Kretschmer has accepted a call to Vienna. . . . B. Kader, privatdocent at Breslau, has been invited to the chair of surgery at Craeow. . . . Dr. E. Bennecke has taken Hildebrand's place at the Charité, Berlin.

AN AMERICAN firm wants the land on which the San Francisco Woman's Hospital at Havana, Cuba, is located, and has offered to build a new model hospital in another part of town and pay \$10,000 in cash in exchange for it. *El Progreso Médico* remarks that it is "high time the poor women of the city had a decent hygienic and comfortable hospital."

L' HÔPITAL International, just opened at Paris, rue de Vaugirard 180, by Bilhaut and others, is a small private and independent policlinic and hospital "fatterned after the small American hospitals," patients isolated or at most three in a room, the remuneration proportional to their means. It is practically the successor of the old Clinique Francaise and Péan's polyclinic.

A CLIPPING states that the increase in the number of women students at German universities during the last few years has been remarkable. In 1896 there were only 177 at the ten leading universities, but at the beginning of the present year the number had risen to 414. Most of the women take courses in philology or philosophy. Only 16 have studied medicine, 6 theology, and 6 law in the last four years.

THE N. Y. State Charities Aid Association has acknowledged its approval of the proposed plan for restricting the appropriation of public funds for the support of private charitable institutions. At present New York City gives over \$3,000,000 annually to 282 of these institutions, and, as referred to before in the JOURNAL, the Association recommends that the amount thus appropriated be gradually reduced, and that no institution receive funds until after investigation by a city official.

THE FRENCH Congress of Internal Medicine, held at Lille the first of August, introduced some noteworthy innovations. The addresses which had been printed and distributed beforehand, were not read, and the *rappor-teurs* did not take the floor until all the objections had been raised, a vast saving of time and patience. There was also a fine stereopticon for general use and a couple of dark chambers for members inclined to photography.

EXPERIMENTS, having in view the adoption of a more scientific system than that at present employed in feeding the insane in the New York State hospitals are now being made in that state by order of the State Commission on Lunacy, under the direction of Prof. H. D. Atwater. Prof. Atwater reports that with a dietary representing the best modern opinion on the subject, there can be not only better results as regards the physical condition of the patients, but very considerable saving in the matter of expense.

ANOTHER victory was scored by the Illinois State Board of Health, August 17, when Joseph Skalla, 571 West Eighteenth Street, Chicago, was fined \$100 and costs for violating the medical practice act. The prosecution charged Skalla with making and selling medicinal remedies and treating the sick in violation of the state law. It also showed that Skalla was not a regularly licensed physician, and on his testimony the justice imposed the regulation fine for the first offense. The case was not appealed.

NUMEROUS severe and puzzling cases of intoxication in Italy, especially among the tourists in hotels and boarding houses, have been traced to the custom of preserving the carcasses of the small birds which are killed in numbers for the feather trade, as they alight during their annual migrations. Those intended for the food market are supposed to be kept separate, but mistakes have evidently occurred, and the necessity of refraining from the toothsome "uccellini," as the cooked birds are called, should be impressed on all starting for Italy.

ACCORDING to the *British Medical Journal* of August 12, the plague continues to spread in Poona, India, to an alarming extent. On July 29 and 30, 360 cases occurred there, and 317 deaths. The plague has also reappeared in epidemic form in Bangalore. In Egypt, during the week ending August 2, six cases of plague appeared in Alexandria. Since the beginning of the outbreak in Egypt 37 cases have proven fatal and 39 have recovered, while four cases are still under treatment. Hongkong shows a decrease, there being but 30 cases and 30 deaths officially reported for last week.

DURING the past two weeks the Chicago coroner has been busily engaged in examining into the demise of several members of the Dowie flock. The first victim was a babe of 9 months, which expired August 16, without medical attendance. The death certificate was given by the coroner as pulmonary and intestinal tuberculosis. Mrs. Augusta Schlater died August 18, after a long illness during which she received treatment at Zion. She was sent to her home when it became apparent that she was unable to recover, and died within twenty-four hours. The third victim was a young woman of 23 years who came to Chicago from Iowa, and who died at Zion three days later.

FROM the *Chicago Times-Herald*, August 21, we learn that Dr. Nicholas Senn, who arrived in San Francisco on his return from the Hawaiian Islands, August 15, while in the Islands met with a slight accident during a hunting trip in the mountains of Molokai. The Doctor placed his gun against a rock and was trying to get his horse alongside, to take his gun, when the animal balked and then rolled completely over. In the tangle Dr. Senn was somewhat bruised and had a thumb mashed. Dr. D. R. Brower, Chicago, who accompanied Dr. Senn, while much interested in watching the skinning of a peacock after the hunt, and not noticing his proximity to the edge of the veranda, lost his balance, fell backward down a

flight of steps, turned three somersaults and had two fingers dislocated besides receiving several bruises.

DAWSON CITY continues to be very good in point of health. A letter last week from Dr. J. N. E. Brown, formerly secretary of the Ontario Medical Association, now private secretary to Governor Ogilvie, states that thus far there has been no outbreak of typhoid. The sanitation of the town has been greatly improved of late, but withal the people are anxiously looking forward to August and September and hope to at least escape with a moderate epidemic this year. Dr. Brown is at present spending his holidays 450 miles up the river, north of Dawson.

AN UNFORTUNATE accident occurred in St. Michael's Hospital, Toronto, a short time ago. This Hospital is presided over by the Sisters of St. Joseph, and by mistake a young lady who had been but recently operated on by one of the leading surgeons, had a solution of carbolic acid administered to her instead of a purgative draught. She died; and now the father of the deceased has instituted two suits, in each case for unstated damages, one against the surgeon for, as the plaintiff alleges, performing an unauthorized operation, and the other against the Sisters of St. Joseph.

THE RECENT tuberculosis congress appropriated \$800 to be awarded as a prize for the best or the two best works on "Tuberculosis as a Folk-Disease, and the Struggle Against it." They must be written in popular style, for general distribution, not be longer than three to five printed sheets, and each have a motto. They are to be sent to Prof. B. Fraenkel, 4 Bellevue-Strasse, Berlin, before Dec. 4, 1899. The work obtaining the prize becomes the property of the central committee. The judges are v. Leyden, several other professors and army officers and the Duke of Ratibor.

THE pure food department of Pennsylvania reports that during the past year there has been sold in the United States 87,000,000 pounds of oleomargarin, over four times as much as was sold in 1888. As a result of the large increase in the manufacture of this product it is also stated that there may be a falling off in cows numbering 4,309,000, worth in the aggregate \$12,927,000. Whether this mixture of lard, tallow and coloring material leads to more harm than pure butter must be solved by future generations. If cows are to be displaced by artificial foods, the question of solving bovine tuberculosis is near at hand.

SWIFT retribution has befallen the assassin of Dr. Bondi (See JOURNAL, July 22, p. 235), as within a month of the crime he was sentenced to thirty days' imprisonment, which is after all somewhat of a nominal sentence, as the man is a consumptive who had been in the hospital and applied for readmission. Dr. Bondi told him he must first obtain the necessary permit from the city authorities, which incensed him to the extent that he waylaid and stabbed the Doctor with a long nail, a couple of days later. The lay press is roused to demand the isolation of tuberculous and other degenerates before they commit crimes, instead of waiting till afterward. One of the nurses in the hospital was killed in 1894 by a tuberculous patient, who it seems was a friend of this assassin.

A GERMAN doctor now residing in Buffalo, Dr. Max Breuer, has recently been decorated with the cross of the Legion of Honor by the French Government, says *Prog. Med.*, August 5. It seems that a young French sailor on an oil ship from Rouen to Philadelphia had his arm crushed and gangrene appeared, with no medical as-

sistance on board. An English ship passed without paying attention to the signal of distress the captain raised, but the *Russia* of the Hamburg line hove to, although forbidden to approach within a certain distance of an oil ship. To the signal for a surgeon, the *Russia's* medical officer, Dr. Breuer, 28 years of age, responded with eight volunteers to man the boat in the heavy sea, amputated the arm and saved the sailor. When offered money for his services he replied: "the danger my men and I are facing at this moment can not be paid with money."

BEFORE the medical section of the National Fraternal Congress, held in Chicago, August 21, papers were read by Drs. J. W. Grosvenor of Buffalo, N. Y.; J. T. Craig, Kansas City, Mo.; C. S. Chase, Waterloo, Iowa; O. Millard, Flint, Mich.; S. T. McDermith, Denver, Colo.; C. A. McCollum, St. Paul, Minn.; and A. L. Craig, Chicago. The medical section is composed of the medical examiners in chief of the various fraternal orders. Dr. J. H. Christian of Baltimore presided and delivered an opening address. The following committees were appointed: On statistics of tuberculosis, to report at the congress of next year, Drs. C. A. McCollum, R. E. Moss and J. W. Grosvenor; on statistics of the height and weight of at least 100,000 applicants for fraternal insurance, Drs. R. E. Moss, T. Millman and C. A. McCollum. The following officers were elected: President, R. E. Moss, Port Huron, Mich.; vice chairman, T. Millman, Toronto; secretary, J. T. Craig, Kansas City.

A NATIONAL PARK IN MINNESOTA.—A proposition is being discussed looking to the reservation of from one to three million acres of land in northern Minnesota, for use as a national park. While the matter had been mentioned before, the Minnesota State Medical Society took the matter up at its meeting a year ago and appointed a committee to take preliminary action. The committee consisted of Drs. J. W. Bell, H. H. Kimball, and W. S. Layton of Minneapolis, and Dr. Parks Pitcher of St. Paul. Committees were also appointed from other bodies, and the matter was finally brought before the state legislature at its last session. This body memorialized Congress to withhold from sale for one year the land that it is contemplating to make into the park. Committees from Duluth, Minneapolis, St. Paul and other places are at work developing the scheme, with considerable prospect of success. If the idea of some of the promulgators is carried out, a national sanatorium for consumptives will be established somewhere in the park.

Therapeutics.

Treatment of Whooping-Cough.

In an article on whooping-cough, published in *The Therapist*, Dr. Edward F. Willoughby says: "The drug on which I have for more than twenty years mainly relied is choral-hydrate, of which the youngest infants are very tolerant. In some cases it may be useful to combine a bromid with the choral, and of late years I have found its action greatly aided by combining it with antipyrin—choral, antipyrin and vin. ipeaca, with syrup being now my favorite formula."

Cheny (Keating's Cyclopedic, vol. v) says, regarding the treatment of pertussis: "The patients, of course, should be isolated and allowed to have plenty of fresh air both by day and night, and should be allowed plenty of good nourishment. The drugs to be employed are: 1. Antiseptic agents, the best of which are the vapors of carbolic acid, cresolin and thymol, and quinin, which can be included in this class. It is very valuable, if the child can retain it, given in doses according to the

age of the patient—3/20 of a grain for each month and 1 1/2 grains for each year of the child's age—three times a day. 2. Antispasmodics, of which the most useful is bromoform, which should not be given in solution, but on sugar in a spoon, in doses of 1 drop every four hours, increasing the dose by one drop each day until an effect is produced. Antipyrin in combination with bromid of sodium is also of much value in the treatment, given in doses of 1/2 grain of the former to 2 grains of the latter, for a child of eight months, 1 to 2 1/2 gr. for a child of fifteen months, and 2 to 3 grains for a child of from 2 1/2 to 4 years of age. Belladonna may be given in small doses, repeated until the physiologic effect is produced."

Salophen.

M. Cresle considers salophen as now definitely settled in the therapeutic domain, says the *N. Y. Medical Journal*. It exerts, he says, an incontestable action upon acute and subacute rheumatism, but its effects are less constant than those of salicylate of sodium. In chronic and hemorrhagic rheumatism it has not shown itself superior to other drugs. Salophen possesses a powerful analgesic action, which is exercised even in those cases where this drug can not be looked for to effect a cure. It has given good results in migraine, in various neuralgias and in sciatica. Salophen employed in a medium dose produces no phenomena of intolerance, nor does it occasion headache, buzzing in the ears, or troubles of vision, but tolerance appears to be rapidly induced. In certain cutaneous affections, salophen appears to have some efficacy, but it is necessary to wait for further experience. The medium dose of salophen is sixty grains daily, more or less, according to the gravity of the complaint.

After Removal of Gall Stones.

We quote from a paper by Dr. Hal C. Wyman in the *Western Clinical Recorder*:

"A prescription which I have often used with great advantage to my patients from whom I have removed biliary calculi by a surgical operation is

- R. Podophyllingr. i
- Leptandringr. v
- Phosphate of sodaʒi

M. Div in twenty powders. Sig. Take one with a full glass of water once in three hours.

Another is:

- R. Tinct. taraxaci
- Tinct. enonymi
- Acidi nitrohydrochlorici dil aaʒii
- Elixir simplicis q. s. adʒiv

M. Sig. Take a teaspoonful with a raw egg in a glassful of cold water before each meal.

Another to relieve the pain and distress which sometimes follow operations.

- R. Extracti piscidie erythrinaeʒiii
- Spiritus etheris comp
- Spiritus vini rect. dil. aaʒi
- Syrupi pruni q. s.ʒiii
- Olei cinnamomigtt. i

M. Sig. Take a teaspoonful in wineglass of hot water once in three hours until pain is relieved.

The Use of Alkalies.

There is a curious paradox running through the medical literature of the past few years concerning the local and systemic result of the administration of alkalies. The writers on physiology and on diseases of the stomach have quite generally maintained that alkalies when they reach the stomach, cause an increased flow of gastric juice, the acid of which they say completely neutralizes the alkalies and there remains in the stomach an excess of acid. On the other hand have stood the advocates of the use of alkalies to diminish the acidity of the urine in gout, cystitis and renal affections. It is fairly clear that if the alkali is entirely neutralized in the stomach it can hardly change the reaction of the urine. As it is certain that the acidity of the urine may be changed by the administration of alkalies, the burden of proof is cast on those

who maintain that these salts increase the flow of acid into the stomach. Late physiologic and pharmacologic studies throw some light on this problem. No recent experimenter has been able to demonstrate that placing an alkaline solution in the stomach has any effect on the flow of the gastric juice. So it would seem that the well-established therapeutic uses of the alkalies in appropriate conditions are well founded, while the theoretic objection, that they produce a corresponding increase of the acidity of the stomach, is not well taken. Indeed the common experience of clinicians, that alkalies frequently disorder gastric digestion, indicates rather clearly that when the acid of the gastric juice is once neutralized, digestion may be interfered with because an acid reaction of the stomach-contents is necessary to the proper function of the organ. For this reason it is the general consensus of experienced opinion that the most effective alkali to administer for the relief of gastric acidity is the weakest—magnesium carbonate,—while for the systemic and urinary effect the dilute alkaline mineral waters are the most useful.

A Nerve Tonic.

- R. Asafetidaʒi
 - Acidi arseniosigr. ss
 - Strychnina sulphatisgr. ss
 - Ext. subulʒiis
 - Ferri subcarbonatisʒii
 - Quinina valerianatisʒi
- M. Make capsules No. xxiv. Sig. One capsule after each meal.

—Brown.

Sciatica.

- R. Chloralisʒiii
 - Sodii bromidiʒiii
 - Morphina sulphatisgr. vi
 - Quinina sulphatisgr. liiv
 - Pulveris camphoreʒss
 - Elixir taraxaci comp.ʒvi
 - Tinct. aconitim. xxiv
- M. Sig. A dessertspoonful every three hours until relieved.

—Wilson.

- R. Pulveris opii
 - Pulveris ipecacuanhae aagr. xii
 - Sodii salicylatisʒi
 - Ext. escarce fluidi q. s.
- M. Div. in pil No. xii. Sig. One or two pills for a dose.

—Benjamin Ward Richardson.

[Attention should be called to the full dose of morphia and opium respectively in the above prescriptions, and the danger of producing the drug habit if used very long.—Ed. JOURNAL.]

Sulphate of Sodium in Catarrh of Stomach.

According to *La Medicine Moderne*, Simon, of Vienna, uses small doses of sulphate of soda for the treatment of this condition. He usually gives from ten to fifteen grains of it in about six ounces of hot water, and under these circumstances the catarrhal condition of the stomach, with its hyperacidity, passes away, and the sensations of pain and discomfort in the epigastrium with nausea are relieved. This method of treatment is supposed to do good by improving the motor power of the stomach.

Sodium Chlorate in Gastric Affections.

Gastric affections treated with chlorate of sodium in daily doses of from 75 to 120 grains are said to be usually much benefited, says *Merck's Archives*. Soupault reports that every variety of dyspepsia is clearly improved by it, and in cancer the pains, nausea and vomiting decrease or entirely disappear; the patient eats much more and with less disgust, the hematemesis ceases and the general condition improves. In gastric tumor, however, no benefit was obtained. In chronic gastritis, no matter what the cause or anatomical form, the results were also appreciably good. The action of sodium chlorate is particularly excellent in hypersthenic dyspepsia, or hyperchlorhydria and in the conditions resulting—gastroenterocœcia and gastric ulcer—exercising a lasting result. In the paroxysmic attack so frequent in sufferers from hyperchlorhydria and

ulcers, the effects are particularly brilliant. In asthenic dyspepsia, however, the effect is doubtful or altogether insufficient. In the doses named, no ill effects were ever observed, even though the remedy was given for several months.

Gastric Hyperacidity with Constipation.

- R. Magnesie
 Pulveris rhei aa. ʒii
 Sodii bicarbonatis
 Pulveris sacchari aa. ʒiv
 Olei menthe piperrita q. s.
 M. Sig. Half to one teaspoonful in water two hours after each meal.

Intestinal Fermentation with Constipation.

- R. Ext. aloes gr. vi
 Pulveris rhei gr. vi
 Benzosol gr. ix
 Ext. hyoscyami gr. vi
 M. Ft. caps No. xii. Sig. One after meals.
 —Thomas Hunt Stuckey.

Eczema.

- R. Acidi hydrocyanici diluti m. xl
 Olei cadini ʒi
 Saponis viridis ʒiii
 Olei rosmarini ʒi ss
 Aquæ destil., q. s. ad ʒv
 Misce et fiat linimentum. —Anderson.

OINTMENT FOR ECZEMA.

- R. Pulveris cocci gr. i
 Potassii cyanidi gr. vi
 Unguenti aque rosæ ʒi
 Fiat unguentum. Sig. Rub a little firmly over the itching parts; let none of the ointment remain undissolved on the skin.
 —Anderson.

ECZEMA IN CHILDREN.

- R. Liquoris potassii arsenitis m. xl
 Vini ferri amari
 Syrup tulotani
 Aquæ anethi, aa. ʒi
 M. Sig. A teaspoonful thrice daily after food.
 —Erasmus Wilson.

Eruptive and Simple Fevers.

- R. Vini antimonii ʒi
 Potassii vel sodii nitratis ʒi
 Spts. etheris nitrosi ʒi iiii
 Liq. morphine sulphatis ʒi
 Syrupi acidi citrici ʒss
 Liq. potassii citratis ʒiv
 M. Sig. Take a tablespoonful every two hours.
 —Carson.

Diuretic.

- R. Strychnine sulphatis gr. i
 Caffeine hydrochloratis ʒi
 Pulveris digitalis gr. xxx
 M. Disp. in caps No. lx. Sig. One capsule every three or four hours.

Deaths and Obituaries.

FREDERICK SMITH THOMAS, M.D., died at his home in Council Bluffs, Iowa, August 13. He had been suffering from dysentery for several days, but had recovered sufficiently to be out, when he had a relapse, from which he died. Dr. Thomas was born in Columbia County, New York, in 1845, and was taken to Illinois by his parents three years later. He graduated from what is now known as the College of Physicians and Surgeons of Keokuk, Iowa, in 1870. After practicing in different places in Iowa he went to Council Bluffs, in 1887, where he has since resided.

FREDERICK H. FINCKE, M.D., died in Chicago, August 13, of cardiac disease. His home was in Baltimore, Md., and he had been assigned to duty in the Department of Liberal Arts and Chemical Industries at the Paris Exposition. He was a graduate, Class of 1891, of the University of Maryland School of Medicine, Baltimore.

WILLIAM D. HARTMAN, M.D., University of Pennsylvania, 1830, died at his home in Westchester, Pa., August 16, aged

84 years. He was a conchologist of authority and had written much on his favorite topic, while still in the practice of his profession, which was active for over fifty years.

TENNIS SCHENCK, M.D., College of Physicians and Surgeons, New York, 1865, died at his home in Bath Beach, now of the Borough of Brooklyn, N. Y., August 15, aged 58 years. He was of a well-known family that early settled in that part of Long Island and was a graduate, in the Class of 1859, of Union College, New York State. He early identified himself with the King's County Hospital and continued his relations with it for many years.

Miscellany.

Prophylaxis of Tuberculosis.—The quarrymen of the Rehberg district in Germany, according to *Frankfurter Ztf.*, August 9, have solved the question of the prophylaxis of tuberculosis, which is so frequent and fatal among them, by simply dropping their tools in June and traveling to the coast, where they take service as sailors or herring fishermen for a few months, returning brown and hardy to their quarries in the fall.

Artificial Upper Jaw.—A patient was exhibited at the recent German National Dental Congress, whose entire upper jaw had been removed and replaced with an artificial contrivance, the work of Privatdocent Jessen of Strasburg and the dentist Hahl, with alveolar process and teeth, the two halves connected with springs. It was worn without inconvenience and enabled the patient to speak. Before it was applied articulation was impossible. This Congress, by the way, absolutely refused to receive female dentists as members.

The Pearl a Urinary Calculus.—According to certain naturalists, the pearl is a pathologic product, an attempt to get rid of some foreign body, a grain of sand, fragment of shell or something of the kind, which falls into the genital gland or vicinity, and is thus in fact merely a renal or urinary calculus, and the oyster an unfortunate mollusc victim of nephritic lithiasis. An article in the *Revue des Deux Mondes* describes the efforts that have been made to cultivate pearl development by trephining the shell and introducing a tiny artificial pearl as a nucleus.

Ignorant Midwives in Cheek.—The Illinois State Board of Health has sent the following circular to every midwife in the state, whose address could be found. Good results can already be seen by comparing the advertising columns of the newspapers to-day with those of a month ago:

Madam—Under the provisions of the Act to Regulate the Practice of Medicine in the State of Illinois, approved April 24, 1899; in force July 1, 1899; midwives are forbidden to call or advertise themselves as physicians or doctors, and prohibited from using any drug or medicine and from attending other than cases of labor.

The same law states that any one shall be regarded as practicing medicine, who shall treat, profess to treat, operate on or prescribe for any physical ailment or any physical injury to, or deformity of another.

You are directed, therefore, by this Board, to immediately discontinue all advertisements in the newspapers, in which you are designated as "Doctor," "Mrs. Doctor," "Doctress," or as "Physician," or in which you offer to treat human ailments; and to remove from your office, residence, or place of practice, all signs advertising you as "Doctor," "Mrs. Doctor," "Doctress," or "Physician." You are directed further to confine your practice to midwifery alone, as you are licensed as a midwife and as such are authorized to attend cases of labor only. You have no authority whatever to treat, or profess to treat, diseases of women, or to treat or profess to treat any physical ailment of another.

If you wish to advertise in the newspapers, or otherwise, you must do so as a midwife.

A violation of the above regulations, will subject you to prosecution by this Board, and will be deemed a sufficient cause for revoking your Certificate.

A Plea for the Outcast.—Dr. Denslow Lewis of Chicago, in response to the request of Dr. Isadore Dyer of New Orleans, the representative for the United States to the International Conference for the Prophylaxis of Syphilis, etc., to be held next month in Brussels, has written to the secretary-general and desires the publication of his reply, which is as follows:

Your conference is the most important gathering of medical men the world has ever known. The matters you will discuss are of vital interest to the individual and to society in general. The tendency of your deliberations is altruistic and philanthropic. You will consider the consequences of a God-given instinct improperly and injudiciously applied. You will treat, in no illiberal manner, of practical methods best calculated to preserve the health of our youth and to protect the best interests of society.

In consideration of the prostitute I beg that no inconsistent spirit of assumed superiority prevail. I trust it will be remembered that she is a victim of man's ill-directed obedience to a dominant instinct. She is the creature of our civilization and not a criminal. She is entitled to care and not punishment. She is a citizen who should receive the protection of our laws. She is an outcast from certain grades of society only. She is still a woman and at one time she was a pure and innocent child. She is now what she is not, because of innate depravity, but because our sociologic conditions fail to solve the problem the solution of which would make her existence impossible. She is of special interest to the hygienist and practitioner of medicine in so far as she serves as a disseminator of disease. Her care should consist in restrictive measures against the spread of disease and only to that extent should she be the object of police surveillance. Facilities for diagnosis and treatment of venereal disease should be multiplied. Measures which infringe on the personal liberty of the prostitute are inconsistent with our civilization except so far as they bear on the prophylaxis of disease.

Nature and Cause of Yellow Fever.—The Commission appointed by the U. S. Marine-Hospital Service, to investigate the nature and cause of yellow fever, has made its report. Drs. Wasdin and Geddings claim to have found that the bacillus *icteroides* of Sanarelli is the true parasite of the disease. This conclusion is based on the study of twenty-two cases diagnosed by native physicians as yellow fever, and in fourteen of these the diagnosis was confirmed by the Commission. In thirteen of these the bacillus *icteroides* was isolated by Drs. Wasdin and Geddings, and in the other it was also found by another observer to whom tube cultures made at the autopsy had been given. The Commission also isolated the organism in 83 per cent. of the cultures made at autopsies at New Orleans, from cases occurring in the yellow fever epidemic in 1897, thus identifying the Cuban and the Louisiana bacilli. The blood from a number of patients suffering from other disorders failed to reveal the germs, though taken in the same way, and tested in the same manner. Similar tests were made with thirty-one bodies of patients dead from various diseases, but in none was this bacillus found. The Commission therefore assumes that the organism of Sanarelli is found only in bodies sick with, or dead from yellow fever, conceding at the same time that in many of the sick the blood may not yield the germ. Experiments were also made to ascertain the natural history of the organism, its mode of entering the body, its colonization therein, its toxic possibilities, and its distribution in the organs post-mortem. They found it pathogenic by artificial inoculation to various animals, but the effects were also the same with other germs, the bacillus X, Havelberg's bacillus, bacillus coli, etc. Then placing these animals under condition of natural infection, they found that the bacillus *icteroides* was specific as compared to those mentioned above, and that it should be classed with bacilli cholerae, and bacillus typhosus, as a true infection organism. The Commission also claims to have determined that the route of infection is through the lungs, and that from there it passes to the general circulation. Their conclusions are:

1. That the micro-organism discovered by Prof. Giuseppe Sanarelli, of the University of Bologna, Italy, and by him named "bacillus *icteroides*," is the cause of yellow fever.

2. That yellow fever is naturally infectious to certain animals, the degree varying with the species; that in some rodents local infection is very quickly followed by blood infection; and that, while in dogs and rabbits there is no evidence of this subsequent invasion of the blood, monkeys react to the infection the same as man.

3. That infection takes place by way of the respiratory tract, the primary colonization in this tract giving rise to the earlier manifestations of the disease.

4. That in many cases of the disease, probably a majority, the primary infection, or colonization in the lungs, is followed by a "secondary infection," or a secondary colonization of this organism in the blood of the patient; this secondary infection may be complicated by the coexistent passage of other organisms into the blood, or this complication may arise during the last hours of life.

5. That there is no evidence to support the theory advanced by Prof. Sanarelli that this disease is primarily a septicemia, inasmuch as cases do occur in which the bacillus *icteroides* can not be found in the blood, or organs in which it might be deposited therefrom.

6. That there exists no casual relationship between the bacillus "X" of Sternberg and this highly infectious disease; and that the bacillus "X" is frequently found in the intestinal contents of normal animals and of man, as well as in the urine and the bronchial secretion.

7. That, so far as your Commission is aware, the bacillus *icteroides* has never been found in any body other than one infected with yellow fever; and that whatever may be the cultural similarities between this and other micro-organisms it is characterized by a specificity which is distinctive.

8. That the bacillus *icteroides* is very susceptible to the influences injurious to bacterial life; and that its ready control by the processes of disinfection, chemical and mechanical, is assured.

9. That the bacillus *icteroides* produces *in vitro*, as well as *in vivo*, a toxin of the most marked potency; and that, from our present knowledge, there exists a reasonable possibility of the ultimate production of an anti-serum more potent than that of Prof. Sanarelli.

London.

(From Our Regular Correspondent, August 1).

INFANT FEEDING AND HOT WEATHER.—Owing to the hot weather during the last six weeks, the diarrhea rate among children in the large cities has gone up by leaps and bounds. 98 deaths one week, 204 the next and 466 last week. But our profession has reason to be proud of the results of its work and teaching, for in spite of the unprecedented length and severity of the heat wave, the diarrhea rate has not even yet reached the "normal" for this week of the year. This must be attributed to the more general use of milk and the better preserved and sounder condition of both it and other infant foods, thanks to vigilance and sanitation authorities. But there is room for much improvement in this respect yet, and we Americans may feel honestly proud of the example we are setting to the British brethren. The best of English dairies are not equal to the average of our own in respect to scrupulous cleanliness and skill in handling their product. Scarcely any of them use ice in any form, or cool their milk before it is sent out, and 90 per cent. of all milk and cream is still delivered in small black and battered tin cans with brass mountings, in place of glass jars. A few dairies use bottles, but the usual "Rhine-Wine" shape with small necks and rubber corks, and the suggestion of the use of glass jars is received with horror! "Why, they would be broken in a week!" It is hard to get milk which does not deposit the ancient and familiar black sediment on standing and, as a consequence, most of it will hardly keep for twelve hours, even in a fairly cool place. Our climatic extremes, aided by the more general intelligence of our people, have driven us to a higher plane in these matters.

UNIVERSITY OF LONDON.—Another welcome development in medical education in England has been inaugurated in connection with the proposed University of London. This is a meeting of the teachers of anatomy, physiology and medical chemistry from the various hospital medical colleges of London, for the purpose of trying to arrange either a central teaching institution or a uniform curriculum for the first two years, or scien-

tific portion of the medical course. The conference was a stormy one and ended in something approaching a split, with the appointment of two separate sets of committees, one to devise means by which the improvement could be brought about and the other how it might be prevented. But to get the meeting held at all and the subject on the tapis was a great advance. As it stands at present, the anatomy and physiology teaching of London's few hundreds of junior medical students is divided up among eight or ten complete staffs of teachers, nearly all of whom are so poorly paid that it is hopeless to expect an adequate life income from their work. Consequently they teach in the good old antediluvian fashion until such time as they can get "promotion" to surgical and medical positions, working up a practice meanwhile. As was brought out with painful distinctness in the recent loss of London's only physiologist of international reputation, Prof. Schaefer, to poor, but intelligent little Edinburgh, there is scarcely a chair of anatomy or physiology, or for the matter of that, of any branch of scientific medicine in London, which has a decent salary attached to it. One promising young student after another has started out in original research work, only to sink back into the slough of practice, after eight or ten years of genteel starvation. If the Jenner Institute and the University of London would only establish half a dozen chairs in scientific medicine, between them, with salaries, which are by themselves a guarantee of a responsible life income, such as a man could live on and keep his own self-respect, they would, by giving this class of eager workers some reasonable hope for the future, do an incalculable service to English medicine. There are scores of brilliant young fellows in the English profession, who love their chosen work and would be glad to devote their whole lives to it, if they only had a guarantee of bread and salt in return. It is precisely in giving young men of this sort the mere pittance that they require, and a chance to win by original work, positions of moderate competence in later life, that the secret of Germany's wonderful strides in the march of scientific progress lies, not merely medical but general.

VACCINATION.—An interesting vaccination situation has developed, and is still developing, at Leicester. This town has long been one of the head-centers and banner-bearers of the "antis," as owing to the intensity of popular prejudice against "blood-poisoning" vaccination there has been almost completely suspended for some time. Every member of the Board of Guardians is a rabid antivaccinationist, and as prosecution for non-conformity to the law rests with this body, the statute has been a dead letter for years past. However, they still had a vaccination officer, whose salary was paid under protest, although his occupation was like Othello's. A short time ago he died and some massive intellect on the board conceived the daring gallery-play of refusing to appoint another. This was too good an opportunity of making spectacular idiots of themselves to be missed, and, moreover, it would restore the "anti" propaganda to that place in the popular eye, which it is rapidly slipping out of since the conscience clause was passed. The government remonstrated with them without effect. A writ of mandamus was applied for before the Queen's Bench, and this was resisted by the Guardians who came up to London in a body, attended by brass bands, obsequious local M.P.'s, cheering crowds of fanatics, and all the accessories of martyrs for the cause. The writ was of course issued, ordering them to at once appoint or be imprisoned for contempt of court, whereupon they pranced back to Leicester and are now holding ghost-dances and working themselves up to the sublime pitch of suffering for the faith and going to jail, when the time given in the mandamus expires. Their clap-trap stage-play has succeeded beyond their hopes. They have attracted the widest attention, but not of the kind they desired. On all hands one hears only words of disapproval and disgust, and the episode is going to do yeoman service in the cause of science and com-

mon sense. It is the most convincing demonstration imaginable of what a besotted relic of barbarism and ignorant fanaticism the antivaccination movement is.

EPIDEMICS OF POISONING.—The two "epidemics" of food poisoning are still mysteries. Nothing has been discovered by the analyst, in any of the cherries, milk or other food eaten by the eighty children at Blackheath, (see JOURNAL, August 12, p. 433) nor can any cause be discovered for the poisonings among the guests at the Inns of Court Hotel a few days before. Another of the guests attacked has just died and several are still seriously ill with symptoms of ptomain poisoning. We may, however, breathe easier on this side of the Atlantic, for samples of the "tinned American apricots," which were at once blamed for the entire episode, by the scientists of the daily press, as soon as discovered on the bill of fare, have been tested and found perfectly sound and wholesome. The Blackheath episode has however given the irrepressible idiot who "writes to the papers" one of the chances of his life, and alas he signs himself "An American." He gravely informs the admiring British public that he can explain the mystery, as "no well-informed American would think of eating cherries and milk together, knowing that in combination they form a deadly poison," and President Tyler is alleged to have died in consequence of imbibing this unhallowed mixture, there being, presumably, "no well-informed American" within shouting distance to warn him of the certain consequences. What does our alleged compatriot mean by keeping priceless toxicologic truths like these buried in his bosom until they are too late to be of any use?

WATER FAMINE.—London is threatened with a water famine, as she always will be in summer until she gets some other source of supply than the charming little brooklet, disguised under the name of "Father Thames."

Canada.

(From Our Regular Correspondent.)

TUBERCULOSIS IN CANADA.—The antituberculosis crusade is being placed on a firm footing in Canada. So far, no great national movement has been inaugurated; but the enlightened and public-spirited physician-citizen is again giving evidence of what true philanthropy there is in our own profession. In June last, the Ontario Medical Association took up a whole afternoon on this one topic. The symposium on tuberculosis was opened in an admirable paper on the "Sanitarium Treatment of Pulmonary Tuberculosis," by Dr. Vincent Y. Bowditch, of the Sharon Sanitarium, Boston, which was followed by Dr. N. A. Powell, Toronto, chief consulting physician to the Gravenhurst Sanitarium, in a talk on "The Earliest Diagnosis and Selection of Cases for Sanitarium Treatment." "Home Treatment and Prevention" was the subject of Dr. T. F. MacMahon's (Toronto) paper; while Dr. Charles Sheard, medical health officer, Toronto, spoke on "Care and Prevention." Montreal and the lower provinces have been by no means idle. Dr. H. A. Lafluer has contributed a readable paper on "The Recognition of Incipient Tuberculosis in Man;" while Dr. McEachern, dean of the faculty of comparative anatomy, McGill University, and chief inspector and veterinarian for the Dominion, has ably dealt with the "Prevention of Tuberculosis in Animals, with special reference to prevention in the Dominion." Speaking of his experience with the tuberculin test and its results in animals, he stated that over 10,000 cattle, within the past twelve months, have been tested at government expense, from the Atlantic to the Pacific. In the large number of post-mortems made, there was scarcely a failure to discover the tubercle reported. Before the Montreal Medico-Chirurgical Society, Dr. A. J. Richer read a paper on "Sanatoria—Locality and Cure." He told of the Gravenhurst Sanitarium in Muskoka, situated at a height of somewhat less than 800 feet above sea-level, and emphasized the good and excellent work that institution had been doing the last two years. He thought Kamloops, B. C., at an altitude of 1100 feet, with as dry a climate as Colorado and a mean temperature of 5 degrees above that of Montreal, and more uniform at that, offered

exceptional advantages for a sanatorium. It is the day for the sanatorium and open-air treatment, and Canada promises not to be very far behind in this regard.

THE DISPENSING PHYSICIAN.—Another question rapidly coming to the front, more especially among physicians in cities and towns, is that of the "dispensing physician." From Mr. L. J. Melius, a member of a well-known Halifax drug firm, has emanated an article on this topic, which that gentleman read at the summer meeting of the Pharmaceutical Association of Nova Scotia. Mr. Melius can probably speak with some authority on the subject, as his firm has the reputation of dispensing more physicians' prescriptions than any other single drug firm in the Dominion. Especially in the maritime provinces has this article attracted attention; but elsewhere the profession is gradually becoming alive to the fact that it will be more profitable for the doctor to do his own dispensing; better results in some cases will also accrue. Mr. Melius, however, puts the case strongly for the druggist and puts it well. Flagrant violations of ethical customs between physicians and chemists are all too common on the part of the latter; and the druggist will only have to thank his own covetous propensities for it, when the physicians do all their own dispensing. In Toronto, a pharmaceutical firm has recently been established, whose whole business patronage comes through physicians, and their aim is to supply the dispensing doctor with everything needful. We are glad to see Mr. Melius, however, calling on his fellow wielders of the pestle to discourage "counter prescribing," with all their might. He might go still further and denounce disgraceful substitution, "repeats," the placarding on their walls and store-fronts of ephemeral nostrums and the filling of prescriptions for others than for whom originally intended.

HEALTH OF LEGISLATORS.—The long session of the Dominion House of Commons, just terminated, in its effects on the physical health of members is worthy of both comment and a passing notice. How frequently during the lifetime of this parliament (elected in 1896) have the two leaders on both sides of the house been called on to pronounce an eulogium and give expression to their sorrow, at the departure of some fellow member at the hand of death, is instanced from the fact that fifteen times they have had to perform this duty. The effects of long hours and late sittings, and very often all-night sessions on a house composed of 215 members is truly startling. The assembly hall is notoriously deficient in point of ventilation; and combined with this, the fact that our public men are known to take very little systematic exercise, all seems to militate against them. Public life is not all a bed of roses. Our statesmen should go in for more sport and exercise, abandon these late sittings and all-night sessions, and no doubt reap the reward in a greatly reduced death-rate.

HUMANIZED MILK.—Dr. LaBerge, city medical health officer, Montreal, has lately received an important letter from Dr. D. Gilbert of Brussels, which deals with the system of sterilized milk in vogue in that country, known as "maternized" or "humanized" milk. Parliament and the health authorities in that city have been taking a keen interest in the various branches of the pure milk question. He describes the process for "humanizing" milk, and concludes by showing how infants can be fed on this fluid, until they reach 8 months of age, at a nominal cost. Dr. LaBerge has already interested himself in the formation of a company or association which will supply this "humanized" milk, prepared on the scientific principles on which many countries are now supplying it.

"CHRISTIAN SCIENCE" IN B. C.—British Columbia has so far as known supplied the latest victim to "Christian Science" cussedness. "Evangelist" Eugene Brooks tried to cure a child of Captain McCoskie of Victoria, by the method, with fatal results. The child was taken with a serious illness and Dr. Duncan sent for. This was the only visit of the Doctor, and was made a month prior to the lad's death. Brooks is a disciple of George Armour Fair's sect, Chicago. The father is naturally very much incensed and talks of taking proceedings against the imposter, as it was contrary to his expressed wishes that his son should be treated in any such manner, he himself being away from Victoria on a sea voyage and the imposition being practiced on his invalid wife.

Queries and Minor Notes.

INTERNATIONAL MEDICAL CONGRESS.

CLEARFIELD, PA., August 17, 1899.
To the Editor.—Will you let me know who is chairman of the section of genito-urinary surgery at the next meeting of the International Medical Congress? When and where is it to be held?
 J. A. M.

ANSWER:—Paris, 1900, Prof. Chauffard, General Secretary.

ETHICS AND PREVENTION OF CONCEITON.

WILKESBARRE, PA., August 21, 1899.
To the Editor.—In the JOURNAL of AUGUST 12, I notice among the (Current Medical Literature) articles an article (No. 1) by John C. King. Will you please inform me where I can obtain a copy and price? G. F. L.

ANSWER:—The original paper was published in the *Southern California Practitioner*, Los Angeles, Cal., July. Send ten cents to the publisher, for a copy.

PAROTID EXTRACT.

CHICAGO, ILL., July 19, 1899.
To the Editor.—I note that parotid extract is highly recommended in the JOURNAL of July 12, 1899, as a cure for ovarian troubles. Will you kindly inform me where it can be procured, and the dosage? I have a case which that description fits exactly.
 W. G. H.

ANSWER:—The parotid gland extract used by Malletti, in the cases noted in the article abstracted, was from the Phospho-Albumin Co., Chicago, and was put up in three-grain capsules. In the cases where he mentions the dose given, it was usually 3 grains, three times a day. Parotid extract is also prepared by Armour & Co. and others.

ASCITES IN CHILDREN.

HILLSBORO, N. D., August 4, 1899.
To the Editor.—In *Pediatrics* July 5, 1899, there is an article headed, "Radical Cure of Ascites in Children," referring to the production of "Anastomosis of Vessels of Liver and Abdominal Wall," and some cases of Professor Talma. What did Professor Talma do? Did he operate to join these vessels successfully?
 T. M.

ANSWER:—Talma's patient was operated on by opening the abdomen and fastening the greater omentum and the gall-bladder to the abdominal wound, thus setting up a collateral circulation. In a later operation the spleen was similarly treated. This case is reported in the *Berliner Klin. Woch.*, 1898, pp. 835-836. The case is briefly described in this JOURNAL, May 27, 1899.

TREATMENT OF DEAFNESS IN THE PNEUMATIC CHAMBER.

EVANSVILLE, IND., August 7, 1899.
To the Editor.—In the JOURNAL for June 10, p. 1311, you give a short extract from the *Muenchever Med. Woch.*, of May 16, concerning deafness treated by means of the pneumatic chamber. Will you call this number of the *Muenchever* journal be had, or could you publish the article in full?
 T. W.

ANSWER:—The article referred to can be obtained from the publisher J. F. Lehmann, Henstrasse, 20, Munich, Bavaria (*Muenchever Medicinische Wochenschrift*, xlv. 20, May 16, 1899). It states that the most complete study of the subject is a pamphlet by Dr. J. Hovent of Brussels, published two years ago by Aug. Bernard of Liège, Belgium: "A Treatment of the So-Called Incurably Deaf People." Among his tabulated observations are five women with simple deafness of five to thirty years' duration entirely cured with one to fourteen sittings. Menstrual pseudomembranous agglutination or catarrh had preceded the deafness in three cases. Five other cases, duration five to nineteen years, were cured with one to eleven sittings, although there was more or less discharge from the ear. His record for 1893-1896 included 128 persons who, with five exceptions, had all been declared incurably deaf by specialists in Belgium and France.

FOR SALE TO THE HIGHEST BIDDER.

—ILL., August 10, 1899.
 We can hardly believe that there are men in Chicago, who are willing to sacrifice their professional honor as is indicated in the letter printed below. Evidently there is one, but there certainly can be no others. If there are, then of course it is good business sense on the part of those who have patients to sell, to sell them to the highest bidder. The letter was written to a well-known surgeon of Chicago, and as a similarly worded letter was sent to at least one other surgeon, by the same writer, it is probable that he will get the best terms that can be had.

—ILL., August 10, 1899.
Dear Doctor.—It so happens that I have occasion to refer operation cases to the city for treatment. I have been sending them to a gentleman who has recently treated me in a way I don't like, and I am therefore desirous of making arrangements with some one else for the portion of the fee do you usually give the doctor who brings the case? I am free to say I have always had 50 per cent. This is not too much, because I always know just what the patient can stand, and have never, unless worked up for a good fee beforehand. This is a rich farming country, you know. An early answer will oblige, as I have several cases that ought to be operated on very soon.

The Public Service.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., to and including August 17, 1899:

LEWIS S. ANDERSON, lieutenant and asst.-surgeon, 29th Inf. Vols., having tendered his resignation is honorably discharged August 14, 1899.

Fred D. Barney, acting asst.-surgeon, from New York City to San Francisco, Cal., for duty in the Department of California.

William C. Berlin, acting asst.-surgeon, previous orders revoked; he will report for duty at Fort Snelling, Minn.

Rufus D. Boss, acting asst.-surgeon, from Fort Armistead, Md., to temporary duty at Fort Myer, Va.

Robert Boyd, acting asst.-surgeon, leave of absence granted, with subsequent assignment to the Department of California.

Alfred E. Bradley, major and surgeon Vols., from the hospital ship *Relief* at San Francisco, Cal., to his proper station, Fort Yellowstone, Wyoming.

Earl S. Bullock, acting asst.-surgeon, from Fort Collins, Colo., to Fort Bayard, N. M.

Henry J. Combel, acting asst.-surgeon, from Bay St. Louis, Miss., to Fort Sam Houston, Texas, to accompany the 33d Inf. Vols. to Manila, P. I.

Edward T. Comegys, major and surgeon, U. S. A., to close the medical supply depot at Atlanta, Ga., and assume charge of the general hospital and supply depot at Savannah, Ga.

Calvin DeWitt, lieutenant, and deputy surgeon-general U. S. A., now at Fort Monroe, Va., to take charge of the Josiah Simpson General Hospital.

Douglas F. Duval, lieutenant, and asst.-surgeon, U. S. A., former orders revoked; he will report at Brooklyn, N. Y., for duty on the hospital ship, *Mosier*.

Robert M. Embers, Sr., acting asst.-surgeon, from Little Rock, Ark., to Fort Leavenworth, Kansas.

Thomas E. Ervin, acting asst.-surgeon, from New Brighton, N. Y., to temporary duty at Fort Crook, Neb.

Albert P. Fitzsimmons, acting asst.-surgeon, from Tecumseh, Neb., to San Francisco for duty in the Department of California.

Robert J. Galt, major and surgeon, from Angel Island, Cal., to Manila, P. I., for duty with the 8th army corps.

Herman W. Gross, acting asst.-surgeon, from Brookline, Mass., to Plattsburg, Barracks, N. Y., to accompany the 26th Inf. Vols., to Manila, P. I.

Andy Hall, acting asst. surgeon, from Mount Vernon, Ill., to San Francisco for duty in the Department of California.

D. B. Hartinger, acting asst.-surgeon, from New York City, to Middleport, Ohio, for annulment of contract.

Philip F. Harvey, major and surgeon, U. S. A., from Fort Snelling, Minn., to the presidio of San Francisco, Cal.

John Sturgeon Hill, acting asst.-surgeon, from Allegheny City, Pa., to the Department of California.

Deane C. Howard, captain and asst.-surgeon, U. S. A., from Fort Columbus, N. Y., to temporary duty at West Point, N. Y.

D. J. Johnson, acting asst.-surgeon, member of an examining board in session at Fort Terry, Plum Island, N. Y.

Verner Kenerson, acting asst.-surgeon, from Fort Myer, Va., to Buffalo, N. Y., for annulment of contract.

Matthew Leeper, acting asst.-surgeon from Louisville, Ky., to Fort Crook, Neb.

William F. Lippitt, Jr., captain and asst.-surgeon U. S. A., member of a board in Washington, D. C., to examine persons designated for appointment as second lieutenants in the army.

Robert J. McAdory, acting asst.-surgeon, from duty in the Department of California to the hospital ship *Relief*, now at San Francisco, Cal.

J. H. Milrick, acting asst.-surgeon, from Baltimore, Md., to San Francisco, Cal., for duty in the Department of California.

Edward B. Moseley, major and surgeon U. S. A., from the Presidio of San Francisco, Cal., to post duty at Angel Island, Cal.

Edward L. Munson, captain and asst.-surgeon U. S. A., member of a board in Washington, D. C., to examine persons designated for appointment as second lieutenants in the army.

Charles D. Noble, acting asst.-surgeon, to accompany recruits from Columbus Barracks, Ohio, to San Francisco, Cal., thereafter to return to his station.

Harry O. Parley, major and surgeon, U. S. A., from the Army and Navy Hospital, Hot Springs, Ark., to San Francisco, Cal., to take command of the hospital ship, *Relief*.

Junius L. Powell, major and surgeon, U. S. A., from Fort Riley, Kan., to temporary duty in the Department of California.

Gilbert L. Pray, acting asst.-surgeon from Webster City, Iowa, to duty in the Department of California.

John J. Reilly, acting asst.-surgeon from the transport, *Iogon*, to the hospital ship, *Mosier*.

Charles Richard, major and surgeon, U. S. A., from the Josiah Simpson Hospital at Fort Leavenworth, Kansas.

Henry D. Snyder, captain and asst. surgeon, U. S. A., member of a board on clothing at Savannah, Ga.

Dwight B. Taylor, acting asst.-surgeon from the Division of Cuba to Columbus Barracks, Ohio.

George H. Torrey, major and surgeon, U. S. A., from Fort Leavenworth, Kan., to command the Army and Navy General Hospital, Hot Springs, Ark.

Cornelius D. Van Wageningen, acting asst.-surgeon, from the hospital ship *Relief*, now at San Francisco, Cal., to New York City for annulment of contract.

Isaac F. Ware, captain and asst.-surgeon, U. S. A., ordered for examination before an army retiring board in session in San Francisco, Cal.

J. Samuel White, acting asst.-surgeon, from Washington, D. C., to the Department of California.

Robert H. White, major and surgeon, U. S. A., (retired) resignation accepted to take effect August 18, 1899.

A. W. Williams, acting asst.-surgeon, from New York City, to Camp Meade, Pa., to accompany the 27th Inf. Vols., to Manila, P. I.

Compton Wilson, acting asst.-surgeon, from New York City to report to the surgeon-general, Washington, D. C., for instructions.

Charles E. Woodruff, captain and asst.-surgeon, U. S. A., former orders revoked, to proceed from Benicia Barracks, Cal., to Fort Riley, Kan., for duty.

Movements of Navy Medical Officers.—Changes in the medical corps of the U. S. Navy for the week ending August 18, 1899:

Asst.-Surgeon F. B. Bagan, detached from the *Wabash* and ordered to the *Scorpion*.

Asst.-Surgeons G. D. Costigan, M. S. Elliott, F. L. Plensdwell, D. N. Campbell, and J. C. Roy, promoted to the rank of Lieutenants, junior grade, from July 1, 1899.

Surgeon L. B. Baldwin, ordered to be examined by the naval retiring board, Washington, D. C., September 12, and then home and to wait orders.

Surgeon L. W. Atlee, detached from the *Bennington* and ordered to the *Solace*.

P. A. Surgeon H. D. Wilson, detached from the *Castine* and ordered to the *Solace*.

Asst.-Surgeon W. M. Wheeler, detached from the *Baltimore* and ordered to the *Solace*.

Asst.-Surgeon J. C. Thompson, detached from the *Baltimore* and ordered to the *Cataraugus*.

Asst.-Surgeon D. G. Beebe, detached from the *Monadnock* and ordered to the *Bennington*.

Asst.-Surgeon T. M. Lippitt, detached from the *Solace* and ordered to the *Bennington*.

Asst.-Surgeon F. M. Furlong, detached from the *Solace* and ordered to the *Oregon*.

Marine-Hospital Changes.—Official List of Changes of Station, and Duties of Commissioned and Non-Commissioned Officers of the U. S. Marine-Hospital Service, for the seven days ended August 10, 1899.

Surgeon S. D. Brooks, to proceed to Augusta, Maine, for special temporary duty.

P. A. Surgeon Rupert Blue, to proceed to Columbia, Washington, for special temporary duty.

Asst.-Surgeon L. D. Fricks, to report to P. A. Surgeon A. C. Smith for duty.

Acting Asst.-Surgeon W. C. Todd, granted leave of absence for seven days.

Hospital Steward S. W. Richardson, to report to Washington, D. C., for assignment to special temporary duty; to proceed to Norfolk, Va., and report to P. A. Surgeon A. C. Smith for temporary duty.

Hospital Steward Frank L. Gibson, relieved from duty at the Delaware Breakwater Quarantine Station and directed to report at Washington, D. C., for temporary duty.

Hospital Steward N. C. Comfort, to proceed to Hampton, Va., and report to Surgeon J. H. White for temporary duty.

PROMOTIONS.
P. A. Surgeon G. M. Kniguder commissioned as surgeon.
P. A. Surgeon J. J. Kinyoun commissioned as surgeon.

APPOINTMENTS.
Charles A. Warhanik of Illinois, to be junior hospital steward.

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended August 18, 1899:

SMALLPOX—UNITED STATES.

Florida: Jacksonville, July 29 to August 12, 9 cases.

Kentucky: Louisville, August 3 to 10, 3 cases.

Massachusetts: Everett, July 29 to August 5, 1 case.

New York: New York, August 8 to 12, 1 case.

Ohio: Cleveland, August 5 to 12, 4 cases.

Pennsylvania: Altoona, August 5 to 12, 2 cases.

Washington: Spokane, July 29 to August 5, 1 case; Tacoma, July 29 to August 5, 1 case.

SMALLPOX—FOREIGN.

Arabia: Aden, May 1 to 3, 1 death.

Belgium: Antwerp, July 22 to 29, 3 cases.

Brazil: Rio de Janeiro, June 30 to July 7, 39 cases, 27 deaths.

China: Hongkong, June 24 to July 15, 2 cases, 1 death.

Greece: Athens, July 22 to 29, 11 cases, 3 deaths.

India: Bombay, July 4 to 15, 15 cases.

Mexico: Mexico, July 23 to 30, 9 cases, 7 deaths; Progreso, July 13 to 22, 2 cases, 1 death.

Columbia: Panama, July 21 to August 1, 3 deaths.

Russia: Moscow, July 15 to 22, 7 cases, 4 deaths; Odessa, July 22 to 29, 4 cases, 1 death; Warsaw, July 8 to 29, 3 deaths.

Settlements: Singapore, June 25 to July 1, 2 deaths.

Turkey: Smyrna, July 15 to 23, 1 death.

Uruguay: Montevideo, July 8 to 15, 1 case.

YELLOW FEVER.

Brazil: Bahia, July 16 to 21, 9 cases, 1 death; Rio de Janeiro, June 30 to July 7, 3 deaths.

Columbia: Panama, August 1 to 8, 2 cases, 1 death.

Cuba: Havana, July 27 to August 3, 9 deaths; Santiago, July 22 to 29, 8 cases, 3 deaths.

CHOLERA.

India: Bombay, July 4 to 15, 1 death; Calcutta, July 1 to 8, 4 deaths.

Japan: Yokohama, July 15 to 25, 1 death.

China: Amoy, July 8 to 15, 275 deaths; Hongkong, June 24 to July 15, 306 cases, 305 deaths.

Egypt: Alexandria, July 1 to 16, 17 deaths.

India: Bombay, July 4 to 16, 115 deaths; Calcutta, July 1 to 8, 7 deaths.

CHANGE OF ADDRESS.

Beebe, S. C., from Surprise, Neb., to David City, Neb.

Bird, J. H., from 1407 to 102 So. Ewing Ave., St. Louis, Mo.

Batts, E. L., from Galveston to 602 1/2 Main St., Houston, Texas.

Carl, J. H., from One to Six S. Third St., Clinton, Mo.

Chehran, C. C., from Hamilton to 218 1/2 E. State St., Jacksonville, Ill.

Children, G. A., from Hospital for Insane to Yankton, S. D.

Caldwell, W. S., from Vancouver, B. C. to care Hongkong and Shanghai Bank, Hongkong, Yokohama, Japan.

Guiteras, R., from 23 W. 53d to 63 W. 54th St., New York City.

Kimball, A. L., from Ann Arbor, Mich., to Gen'l Del., Boston, Mass.

Lewis, T. H., from St. Luke's Hospital to 340 Oak Ave., Evanston, Ill.

Madden, J., from Sentinel Bldg to 316 3/4 Goldsmith Bldg., Milwaukee, Wis.

Nickerson, T. S., from 18 Maple St., to 219 Hampden Court B., Chicago.

Noble, R., from 116 to 1715 E. 5th St., Dayton, Ohio.

Norton, C. D., from Greeley, Colo. to Pompano, Cal.

Norton, C. F., from 61 Stouton St., El Paso, Texas, to 1104 Guadalupe St., Dallas, Texas.

Norrick, J. H., from Pensylvania, to Fredricktown, Knox Co., Ohio.

Pickett, W. H., from 6th and M Sts. to 642 Preston St., Louisville, Ky.

Raub, J. F., from 421 B St., N. E., to 225 First St., N. E., Washington, D. C.

Suarez, J. M., from care Mr. Romer, Milberg to 1220 Louisa St., New Orleans, La.

Wright, John B., from Coharie, Sampson Co. to Granite Falls, Caldwell Co., N. C.

Werner, C. A., from Harcourt, Iowa to 249 E. 9th St., St. Paul, Minn.

The Journal of the American Medical Association

VOL. XXXIII

CHICAGO, ILLINOIS, SEPTEMBER 2, 1899.

No. 10

Original Articles.

MANAGEMENT OF PREGNANCY, COMPLICATED BY ABDOMINAL TUMORS.*

BY RUFUS B. HALL, A.M., M.D.,
CINCINNATI, OHIO.

The subject of abdominal and pelvic tumors, associated with pregnancy, including as it must malignant growths, being so large a subject, I will confine myself entirely to the discussion of the management of ovarian and uterine tumors complicating pregnancy.

One of the gravest problems ever presented to a physician is the satisfactory settlement of this question. We not only have the interests of the mother to conserve, but the interests of one that is wholly unable to protect itself. On the satisfactory settlement of this question much depends, not only to the patient and her friends, but to the good name of the physician in charge and, indirectly, to that of the whole profession. While these cases are not common, they occur frequently enough to make this subject one of exceeding interest to every man engaged in the special work of this Section. I think I voice the sentiments of my hearers when I say that no class of cases coming under observation excites so much interest and anxiety as these. Little has been published in text-books on this subject. What little knowledge is to be gained is found in medical journals and society transactions. The present opinion of the profession on the subject is hard to obtain. I am inclined to the opinion that a large percentage of operators favor operation during pregnancy, in properly selected cases, rather than take the additional risk of complications arising in the tumor during the pregnant state. I am disposed to speak from personal experience, rather than quote the views of others, giving a short history of cases illustrating certain phases of the condition under discussion.

The danger of abortion or premature labor, following the removal of ovarian tumors, has been very much exaggerated. It is impossible before operation to have an intelligent idea whether or not any given patient will abort. Some of the most severe operations coming under my observation, where the greatest amount of trauma has been done in the pelvis and the pregnant uterus was most handled, have not had the least indication of abortion and have gone on to full term of gestation without any inconvenience. In other cases, with very much less injury and less handling and with everything more favorable so far as the patient and operation were concerned, the patients have aborted promptly. These facts should be thoroughly recognized and taken into consideration in every instance before advising an operation. In a large percentage of these cases the tumor is not recognized until several weeks after pregnancy oc-

urs. The rapid increase in the size of the uterus and the increased blood-supply to the tumor favors its rapid growth in all uterine as well as in many ovarian tumors. The first knowledge that the physician has of the presence of the tumor is coincident with the knowledge that the woman is pregnant. He then finds himself in the embarrassing position of deciding the very grave question before us. I am strongly inclined to believe that the danger to the mother is not markedly increased by the fact that she is pregnant so far as the operation relates to the removal of ovarian tumors. Yet we must grant that no one would select the pregnant state as an ideal condition for operation. But if we see the patient, after she has been suffering several days from peritonitis, with a tumor holding a gallon or more of fluid and she is three or four months pregnant, and, at the time of our visit, extremely ill, the responsibility of advising for the patient becomes much greater and the danger of abortion is markedly increased, as illustrated in the following case:

Mrs. H., aged 35, was seen in consultation in January, 1890, with Dr. Fishburn of Cincinnati, Ohio. The patient herself had been conscious of the presence of a tumor for several months. She had been ill four days, from general peritonitis, at the time of my visit. Physical examination revealed the presence of an ovarian cyst and pregnancy at 4½ months. The diagnosis was ovarian cyst with twisted pedicle and general peritonitis. A further consultation was held the same day with Drs. Edwin Ricketts and C. A. L. Reed, and an immediate operation was decided on and made at once, Jan. 20, 1890. The diagnosis was confirmed. The patient did fairly well for thirty-six hours, at which time she aborted and died twenty-four hours later from her pre-existing peritonitis.

The case with which patients recover after the removal of an ovarian cyst in uncomplicated cases is illustrated in the following case: Mrs. H., aged 36, mother of three children, referred by Dr. Burnett of Greenville, Ohio, was operated on Sept. 23, 1893. The tumor had increased rapidly in size for several weeks. She was already suffering from dyspnea, and was greatly alarmed at her condition. She had a thin-walled ovarian cyst holding some two gallons of fluid and was five months pregnant. An immediate operation was advised. In five hours after operation uterine contraction came on. It was necessary to keep her fully under the influence of morphia for four days. Excepting this she made an uninterrupted recovery and was delivered of a healthy child at full term.

We are not always so fortunate as in this instance, as illustrated in the case of Mrs. W., referred to me by Dr. Sylvester of Wellston, Ohio, in June, 1894. She was suffering from a pelvic tumor the size of a cocoanut, which had greatly inconvenienced her for four or five weeks. She had been pregnant twelve weeks. The tumor occupied the true pelvis and the enlarged uterus was above and to the left side. The tumor could not be lifted

*Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

out of the pelvic cavity. I advised an immediate operation because of the thin-walled ovarian tumor occupying the pelvis as it did. The operation was made June 16, 1894. On opening the abdomen I found that the pelvic tumor was an ovarian cyst that had developed from an adherent ovary on the right side. A portion of the cyst wall was adherent in such a manner that the tumor could not be lifted out of the pelvis until these old adhesions were separated. The operation necessitated much manipulation of the pelvis and handling of the uterus. The patient had always been an exceedingly nervous woman and was greatly excited before operation, which she dreaded very much. Within twenty-four hours after the operation she developed acute mania which continued several days, requiring restraint to keep her in bed. This, however, was transitory, and at the end of a week she was perfectly rational and otherwise had a smooth and easy convalescence; 6½ months later she was delivered at full term of a child which is now living. I advised immediate operation in this case because of the fact that the location of the tumor was such that she could not be delivered.

As emphasizing an assertion made earlier in my paper, that some patients abort exceedingly easily after these operations, I will briefly narrate a case coming under my observation recently.

Mrs. C., aged 25 years, was referred by Dr. I. W. Hall of Camargo, Ill.; married four years, one child 2½ years old. For three months she had suffered great pain from periodic obstruction of the ureter caused by a movable kidney. These attacks were becoming more frequent and more severe, necessitating the use of morphia for their relief. She also had a thin-walled ovarian cyst just large enough to block up the pelvic cavity thoroughly. The uterus was enlarged and lifted out of the pelvis above the tumor. The tumor could not be lifted out of the pelvis. The patient was seven weeks pregnant. On account of the frequency of the attacks of pain referred to, I advised an operation for fixation of the kidney and at the same time removing the ovarian cyst. The operation was made May 17. The kidney was anchored by the usual incision in the loin and the ovarian cyst removed by median incision, without difficulty. There was with thin-walled cyst a long pedicle. I placed the ligature fully an inch from the uterus. There was no manipulation of the uterus whatever. The wounds healed without a drop of pus. Her highest temperature was 99 and pulse 90 during her convalescence, yet she aborted at the end of forty-eight hours. The membranes were expelled within three hours after uterine contraction commenced. Otherwise the patient made an easy and perfect convalescence.

The case emphasizes the fact that in spite of all our care and every precaution that is possible, some of these patients will abort after similar operations, and my experience leads me to believe that when they do abort there is great danger of losing the patient. For this reason we should differentiate carefully as to which case should be advised operation. Every case should be law unto itself and be studied individually before any conclusion is reached.

The question of operation for fibroid tumors of the uterus during pregnancy is a much graver subject than that of operation for ovarian tumors. As a rule it must be considered that an operation for the removal of fibroid tumors means hysterectomy and therefore the sacrifice of the child. Fortunate it is for these patients that on account of the presence of the tumor they rarely become pregnant, yet there are instances occasionally

coming before us, of a woman suffering from fibroid tumor of the uterus, who becomes pregnant and within a few months her suffering is greatly intensified and she seeks and demands relief. The question of the advisability of an operation must rest entirely on the conclusions in the individual cases. In a large number of those who do become pregnant the tumor is situated in the upper segment of the uterus, and there is a reasonable hope that the patient can be delivered of a living child in safety. These cases should be watched carefully, examined frequently, and the attempt made to carry them through the pregnant period so as to operate for the removal of the tumor at some more opportune time. We are aware of the fact that there are some cases suitable for enucleation of the tumor, and that if it be a suitable case for that method the child might be saved, yet it must be granted that it is not within the power of man, before opening the abdomen, to say positively that he could carry out such a procedure and he must always be prepared to do a hysterectomy if necessary.

A very interesting case came under my observation through Dr. Halderman of Portsmouth, Ohio, in September, 1897. Mrs. W., aged 32, no children, had been conscious of the existence of a tumor for many months. She was then about five months pregnant and suffered greatly from pressure. I saw her in reference to the advisability of operating at that time. I could then determine that the fibroid tumor occupied the upper segment of the uterus. There was no danger of it obstructing the passage of the child and I advised against operative interference for that reason. By extreme care she went to the full term of gestation and was delivered of a healthy child which is now living.

In contrast to this case I have a vivid recollection of another one: Mrs. J., a colored woman, pregnant with her first child, consulted me in 1891. The woman had a multinodular fibroid in the lower segment of her uterus. She was five months pregnant. An operation was advised and declined. She went to full term. After a protracted labor, lasting many hours, I was asked to see her with her physician. On arriving at the house we found our patient dead from ruptured uterus and internal hemorrhage.

In July, 1898, Mrs. C., of Portsmouth, Ohio, was referred by Dr. Rardin. She had been the subject of fibroid tumor of the uterus for many years. She was then pregnant four months for the first time, although she had been married six years. Since her pregnancy she had suffered greatly from pressure. She was unable to empty her bladder on account of pressure, and it was necessary to catheterize her for relief. The bowels could only be moved after giving her large quantities of physic and liquefying the contents. A portion of the tumor occupied the pelvis so as almost to present at the vulva. The pregnancy occupied the upper half of the uterus. There was no possibility of her being delivered through the natural passage. Her condition was so desperate that it demanded immediate relief. She was subjected to an operation as soon as the necessary preparations could be made. A part of the tumor occupied the left broad ligament. A hysterectomy was made without great difficulty. The patient excreted seven ounces of urine the first twenty-four hours and five ounces the second twenty-four, after which she had complete suppression and died in uremic coma on the fourth day. No autopsy could be secured. This was a case in which no choice was left for the operator other than an operation, unless he deserted his patient without making an effort to relieve her. The conclusions which may be

drawn from the cases reported can be briefly summarized.

The case with which some cases recover, following removal of ovarian tumors, should not mislead us into the belief that there is no danger from abortion and its complications following the operation. Abortion at this time is attended with more risk than at any other and not a few of these patients die afterward, yet this fact should not deter us from advising and making the operation in all those cases where it is deemed advisable to do so after all the facts have been placed before us, even if the case is a desperate one. An operation promises something. We should not refuse to operate on any one where there is the slightest chance for recovery, if there is no chance for recovery without an operation. It is a duty that we owe to our patients to operate and give them the only chance, even if that is but one in a hundred.

I would advise operation for the removal of ovarian cysts in all cases where the tumor is small and fixed in the pelvis below the uterus; where the tumor cannot be lifted out of that cavity.

We should operate in all cases where there are any complications in the tumor itself, such as twisted pedicle, or ruptured cyst. Patients with inflammation in the abdomen, caused by the tumor, should be operated on.

I would hesitate to advise operation during the pregnant state for an ovarian tumor of moderate size that was above the uterus and where the tumor itself was too large to occupy the pelvic cavity, if the woman had not suffered from the tumor and there was no indication of any complication.

In fibroid tumors of the uterus, I would advise operation in all cases where the tumor occupied the lower segment of the uterus and it was in such a position that it would interfere with or prevent delivery at full term. The question as to when the operation should be made, as to the period of gestation, must depend on each individual case.

If the woman has passed four or five months of gestation and it is possible to carry her to or near the full term of pregnancy, the question as to saving the child must be discussed.

If the patient can be placed in good surroundings and operated on just before the full term, or at the time of the commencement of labor we could save both mother and child. But in many of these cases seen at three and one-half to five months of gestation, their condition becomes so intolerable that we are obliged to sacrifice the life of the child to save that of the mother. Their condition will not tolerate deferring the operation even for a few days. The long-continued pressure of a solid tumor in the patient's pelvis, damming back the urine on the kidney by pressure on the ureters, as it must in many of these cases, should have much weight in favor of immediate operation. Even if the patient should go to the full term of gestation and then be subjected to an operation, she would be in great danger of afterward dying from urinary complications. This is more likely to occur if the tumor develops in one of the broad ligaments; but, unfortunately, there is no choice in the matter in many of these cases; we must operate and accept the situation if we are to do anything at all for our patient. A man would be a coward to temporize in the face of such difficulties.

The question of what operations should be made should be left with each individual operator to use his best judgment at the time of the operation. The question of enucleation of fibroid tumors and saving the

uterus is being favorably discussed by many operators, but whether or not that operation would often be selected in the pregnant state remains to be seen.

DISCUSSION.

DR. M. ROSENWASSER, Cleveland, Ohio.—I agree with Dr. Hall as to operation for ovarian tumors complicating pregnancy; the operation should be done just as soon as it is possible. But with fibroids complicating pregnancy that is a difficult question, one in which each individual case must be judged by itself. It is not only the delivery that must be considered, but the tumor above or below, but also the consequences after delivery. A woman that is pregnant is liable to miscarry in the presence of a fibroid tumor; following miscarriage she may have severe hemorrhages and sepsis, conditions which are not the best for immediate operation. The same complications may arise at the end of full term, when again there is liability to severe hemorrhages in the presence of interstitial or intramural fibroids; consequently it is well to consider the advisability of operation while a woman is in good condition and to keep in mind these additional risks, besides the dystocia. Within the past year I had a case in which the fibroid tumor was located above the child. The woman was confined at term; a severe postpartum hemorrhage occurred; within a few days she became septic. She was finally taken to the hospital. I had not seen her in the interval; she had become deeply septic; her condition would not warrant operation. I gave her medical treatment as offering the better chance, and she finally made a good recovery; the tumor has hitherto caused no trouble and she has not been operated on. This is, however, an exceptional case. Many cases die from sepsis. Two years ago I operated and lost a similar case. The point I wish to make is that in considering the proper procedure in fibroids complicating pregnancy, we must not only study the mechanical relation of tumor to delivery, but also the possible serious consequences that may follow a safe delivery and jeopardize the life of the patient.

DR. WILLIAM H. HUMISTON, Cleveland, Ohio.—This is an interesting subject, and, briefly, my position is this, that where we have ovarian tumors complicating pregnancy and they are not of enormous size, and do not encroach on the pelvic cavity, we can treat the case conservatively and allow the woman to go to term, and then remove the tumor or tumors after delivery. When we have multiple myomas, and some of them involve the lower segment of the uterus, and the woman becomes pregnant, the only safe procedure is to operate as early as possible.

DR. EDWIN RICKETTS, Cincinnati, Ohio.—I recall the case of a woman who, a number of years ago, suffered from an ovarian tumor and was delivered of three living children, she refusing to undergo an operation for the removal of the ovaries. The three children were born within five years. My friend, Dr. Hall, asks whether they were triplets. Under the management and treatment of the late Dr. C. Hall, of Marion County, contrary to all expectations, while this tumor was increasing, these three children were delivered and all saved.

As to fibroid, I recently had a woman who had a small fibroid in the upper segment of the uterus; I carried her to full term and delivered her, but came near losing her on account of postpartum hemorrhage. I had everything in readiness to do a hysterectomy in that case. While it is true that in ovarian tumors complicating pregnancy many women can be carried to full term, yet it is a dangerous procedure. I saw a woman not long since in whom at full term an ovarian tumor was present. The child was delivered dead and the ovarian tumor was punctured per rectum. Nine days after that the patient was crying aloud for abdominal section and begging for relief. The abdomen was opened, but no promises were made. What was the result? Two deaths. Dr. Rosenwasser has expressed the matter in a few words, that each case is to be judged by itself, and the physician should be ready to act in connection with the surgeon who may be called in consultation.

DR. G. B. MASSEY, Philadelphia.—An element of danger can be avoided where it is decided not to operate for a fibroid complicating pregnancy, by having a battery at hand. It is impossible for a postpartum hemorrhage to continue if you have a primary faradic current at hand after the birth of the child. You have a contractile uterus; it is not a question of the arrest of hemorrhage as it would be in a hemorrhagic fibroid, but of something to contract, a highly contractile muscular body, quick contraction of which would close the open blood-vessels. A piece of wire and rubber tube can be turned into an electrode, insulated, and thrust into the uterus, and in five minutes you can prepare the instrument. You can put one pole in the uterus, the other on the abdomen, spreading out the external electrode if you had a small ordinary desk by means of a wet towel to increase the efficiency of the contraction by lessening the resistance. While I speak of this in a theoretic way, I ven-

ture to assert that not one case would be lost from hemorrhage.

DR. EDWIN RICKETTS.—The postpartum hemorrhage in this case occurred in three minutes after the birth of the child.

DR. MASSEY.—By previous arrangement the five minutes I spoke of could be dispensed with; a second or two would be enough to stop the hemorrhage by turning on the current suddenly. It is not necessary to give a shock.

DR. J. HENRY CARSTENS, Detroit, Mich.—The question has always been, is a woman who is pregnant in a good condition to be operated on, and will she stand an operation as well as another woman? In my early experience I was a little timid, but in the course of time, with increased experience, I finally came to the conclusion that a pregnant woman can really stand an operation as well, if not better, than a non-pregnant one. I have been fortunate perhaps in my cases; in fact, I have gone so far as to say that a pregnant woman can stand almost anything. One day, however, I was sadly disappointed and had a patient die.

There is one other point to be considered, and that is the mental influence. When a woman knows she is pregnant and has a tumor, it has a very depressing influence on her mind. She is continually thinking and worrying about it, and I am inclined to favor an operation, other things being equal, because we relieve her mind, and her chances for recovery are just as good as when she is not pregnant. We can enucleate fibroids just as well when women are pregnant as when they are not pregnant, and, in my experience, I must say they seldom abort, if we simply handle the tissues carefully and give them what we do when they are not pregnant—morphin after the operation, to quiet the nervous system.

DR. WALTER B. DORSETT, St. Louis, Mo.—This discussion as to the advisability of operating on fibroid tumors complicating pregnancy before term or afterward is an interesting subject from many standpoints. It brings to my mind a case I had while in charge of the St. Louis Female Hospital, several years ago, the woman having been admitted at about term. The tumor was not recognized at the time, although a careful examination had been made. It was not recognized until labor had fairly set in, when it was discovered that there was some obstruction to efforts at delivery with forceps. The traction on the forceps made matters worse, when the woman was placed in the knee-chest position and delivered in that way. It was a case in which a thick-walled cyst got down behind the promontory of the sacrum and obstructed the passage of the child as well as the delivery by means of forceps. The woman was delivered in the knee-chest posture and an ovariectomy was done afterward.

One thing in regard to what Dr. Massey has said deserves some attention. In the presentation of the paper, as well as in the discussion that has followed it, it has been clearly brought out that a uterus with a fibroid tumor is prone to rupture. How does rupture take place? Is it not by the violent contractions of the uterus? If so, and if we apply the faradic current for the purpose of contracting the uterus, are we not much more liable to rupture the organ by electricity than if we were to use other means. Stoppage of hemorrhage is due to contraction of the muscular fibers of the uterus. If we apply electricity, it seems to me the uterus is very much more apt to rupture than otherwise.

DR. CHARLES P. NOBLE, Philadelphia—It seems to me that the question of what to do with an abdominal tumor complicating pregnancy has passed the experimental stage, and that we have had enough experience on the subject to act from knowledge rather than from inference. I agree with what Dr. Carstens has said concerning operations done during pregnancy; we have most excellent results from them. Medical literature is full of cases in which tumors have been removed during pregnancy, and the results have been fully as good, if not on the whole better than the general average of patients that have undergone abdominal operations. The reason is obvious; these patients are not septic. If they had septic trouble they would seldom become pregnant; therefore, they are a class to themselves, and the results of operation are favorable. As to my own experience in dealing with ovarian tumors complicating pregnancy, if promptly removed, all of them have recovered. None of them have aborted. I believe this is the experience in the hands of others. Certainly, up to the eighth month, if I were consulted as to an ovarian tumor complicating pregnancy, I should advise taking it out, and I would most likely take it out if it were the ninth month. My experience in operating in the presence of the pregnant uterus is favorable. In the beginning I have felt it would be difficult to do the operation, but the situation practically settles itself, and the operation is scarcely more difficult than when the pregnant uterus is not present. I recently removed an ovarian tumor complicating pregnancy at the fifth month. This woman has had two ovarian tumors removed during pregnancy. It is very important to

remove dermoid tumors during pregnancy, and others which happen to be adherent in the pelvis, because after labor takes place the tumors become inflamed and gangrenous, and no class of cases is more serious and more difficult to deal with satisfactorily than a gangrenous tumor after labor. If for any reason a small tumor has been overlooked during pregnancy and has been discovered during labor, I feel it is our duty to remove it at the conclusion of labor, because bruising sets up inflammation, if not gangrene, and the only time to deal satisfactorily with such a tumor is immediately after labor has been completed, and before gangrene sets in.

As to fibroids, I feel differently. I think the conditions must be extreme to make it advisable to remove a fibroid tumor during pregnancy. If we have a fibroid tumor of the cervix, it is possible to remove it per vaginam. It is quite possible to remove tumors of the fundus, of the corpus, but it is a question as to whether it is advisable. Dr. Carstens' experience in the matter of operating on fibroids during pregnancy is exceptional. The literature shows that the majority of these cases abort, and on this account, unless the size of the tumor plus the pregnancy interferes seriously with the patient's well-being, I myself believe the patient should be allowed to go into labor. So far as fibroid tumors are concerned, then, the conditions must be exceptional to make it wise to interfere during pregnancy.

DR. W. D. HAGGARD, JR., Nashville, Tenn.—With reference to the remarks of Dr. Noble concerning ovarian tumor complicating pregnancy and the wisdom of removing them after labor has terminated, I wish to speak of the case of a woman in her seventh labor, in whom there was noticed, immediately after labor, a small tumor in the left side about the size of one's fist. It began growing and was attended by elevation of temperature. At the end of six weeks after labor I saw her with a temperature of 104 degrees, and the tumor in the left side, roughly speaking, was about the size of a small Georgia watermelon. A diagnosis of ovarian cystoma was easy, but the complication that caused the elevation of temperature was not so plain. Abdominal section revealed, however, that the cyst contained pus, and there was considerable adhesion evidently at the point of leakage, to the posterior abdominal wall. The patient did nicely, and the case simply goes to accentuate the necessity for the early removal of these tumors. The only point of interest in the case was the remarkably rapid growth of the tumor in six weeks. The point of leakage and adhesion, the infected site, was up on the psoas muscle, so that the ordinary glass drainage was too long, and it was too high up for vaginal drainage. I cleaned out the cavity with peroxid of hydrogen and free irrigation, introducing a strip of gauze down to the point for drainage, and the point I wish to make now is one that we often notice, that gauze drainage does not drain. At the end of twenty-four hours, when pulling out the gauze, at least six or eight ounces of clear serum welled up out of the incision. I instituted gauze-in-gutta-percha drainage and the patient recovered.

DR. C. R. REED, Middleport, Ohio—If the statement made by the gentleman who has just taken his seat, that the majority of pregnant women who have tumors complicating pregnancy abort, is true, it is important to consider the question of instituting abortion or premature labor. This is an important matter for the physician to consider and will always come up where tumors complicate pregnancy. Let us suppose, for instance, that we have a woman who is from two to five months advanced in pregnancy; that her life is endangered by the presence of a tumor. In order to save her life and prevent the fatal results or dire consequences, would it not be well to consider the practicability of inducing premature labor? I do not think that question has been raised in the discussion so far.

DR. RUFUS B. HALL, closing the discussion—I regret not having had time to finish reading my paper, as it would have made clear some points that were apparently not clear to some of those who have discussed it. I am very glad that some of my hearers feel that the time for the experimental stage of operating in these cases has passed. I do not agree with them. One of the speakers said that he never had a case abort; that does not tally with my experience, even in ovarian tumors. In one case narrated the woman aborted within forty-eight hours; there was not a single sponge put inside of the abdomen; no handling of the uterus. There was a non-adherent tumor, firmly imbedded in the pelvis, which was easily removed. She did not die. But if you have a case that has some complication you are called in three or four days after the patient is ill from peritonitis, and there may be some condition in the tumor that causes the peritonitis. Should you operate on such a patient she is very likely to abort; in fact, they almost always abort. These patients are very ill when you operate. If they did not abort they would have a hard fight for existence, and many of them die from the operation alone. If we knew what patients were going to develop some complication we could select the

operation when they are well, and there would be very little danger of aborting. Every one of these women with pre-existing peritonitis, in my experience, some four of five of them, have died. The fact that we cannot differentiate which patient is going to abort makes us cautious about advising operation in cases that can be delivered with the tumor present. I would hesitate in advising an operation on a woman with an ovarian tumor that gave no symptoms of trouble during pregnancy, believing that it would be much safer to wait until after she was delivered. As mentioned in the paper, we are often placed in a position where we have no choice of whether to operate or not, being governed by the conditions present. If the tumor is a fibroid of the uterus, and is situated in the lower segment of that organ and large enough to block up the pelvic cavity, the woman can not be delivered, and if such a woman has been under your observation for some time and is in the fourth or fifth month of pregnancy, you are compelled to operate to relieve her. Now let us reverse this condition: Supposing the tumor to be the size of a coconut, or four times that size, and there is no obstruction in the lower segment of the uterus, no obstruction to the delivery of the child, we do the patient an injustice to do either hysterectomy or myomectomy. We talk about patients not aborting when a myomectomy is done; they are fortunate if they do not. Many of them do, and such should not be operated on if they could be delivered with the tumor. I have seen them abort with a tumor not larger than an orange. Some of the patients abort on the second day and die a few days later.

PROPHYLAXIS OF UTERINE CANCER.*

BY W. W. GRANT, M.D.
DENVER, COLO.

Cancer of the body of the uterus, as a primary condition, and independent of the cervix, is not common.

I assume that there can now be no discussion as to the proper treatment of uterine cancer, when the opportunity for early operation is presented. The field of preventive surgical disease is as interesting a study and imperative a duty as preventive medicine is to the general practitioner and sanitarian. Knowing the cause, we will in time discover and apply the remedy. In this day of perfected surgical technic and brilliant operative achievement, we are prone to overlook and underestimate the great work we can or may do, in preventing disease. In no respect can this interest us more than in reference to those diseases the inevitable tendency of which is to a fatal issue.

A more complete operation for carcinoma is more certain of attainment and more satisfactory, if performed early; hence, the mortality should steadily decrease. It would not be surprising if this generation witnessed a mortality not exceeding 25 per cent.

Cancer of the uterus is rare in virgins. Its common site is the cervix and its common victim the child-bearing woman. Observation and experience justify the belief that, as a lesion is such a common precedent condition to the development of cancer, it deserves to stand in a causative relation. There are few cases, if seen before being obscured by pathologic action, that will not show evidence of traumatism. Neither can it be regarded as inconsistent with the parasitic theory now under investigation. Recognizing that the injury is manifested in contusion and laceration of cervical tissues, we are in position to deduce more rational conclusions. The first is to give to Nature a freer hand in the dilating stage of normal labor, and the use of all possible care and gentleness, to limit traumatism, in operative procedures. Failing in these, the question occurs: Will timely repair of these tissues arrest retrograde metamorphosis and restore normal circulation, innervation and nutrition to the uterus? It certainly will, though

this effect is manifestly influenced, in some degree, by the general condition of the patient.

The significance of such considerations must appeal to the conscience and judgment of every competent gynecologist. To restore the integrity of an organ is the first step in the prevention of more serious disease.

To emphasize the matter of causation and prophylaxis, I will reproduce recent statements of two distinguished authors only—Dührssen and Kelly. The former, strongly recognizing the great mortality in all countries, from cancer of the uterus, and the special danger of the climacteric from this disease, and accepting the belief of German pathologists that cancer develops only in epithelial elements, advises as a preventive measure, entire excision of the uterine mucosa, by a "T" incision through the anterior vaginal vault and body of the uterus, and, in some cases, high amputation of the cervix. These measures of prevention are new and seem needlessly harsh, if not dangerous, to be used for a mere suspicion or fear of malignant disease; and would prove inadequate in most cases of actual disease. Besides, as the aim is to destroy the epithelial tissues beyond regeneration, simple vaginal hysterectomy would seem a more feasible and desirable operation.

The desirability of medical supervision during the climacteric, and even before, must be admitted by all, in order to meet certain diseased conditions promptly. Kelly advises, as a measure of prevention, that every child-bearing woman of 30 should be examined by a competent physician and the performance repeated every few months, for the purpose of treatment if the lips do not appear sound; and that when the lips of a lacerated cervix are thin, uninfiltated and lie together, no treatment is required; but, if the lips are thick and everted, with endocervical catarrh, they should be repaired or amputated; that every woman of 33, or over, who has a tear of the cervix, should be examined once a year for ten years, or longer, if the cervix does not appear perfectly healthy.

The importance of the condition in relation to cancer is unquestionably manifest. I hope it will be considered a fair attestation of my desire for more light, if I question the entire safety and wisdom of the admonition given, as *not* being a full and logical deduction from admitted premises. Is it the best service we can render, to permit a lesion to continue, that requires so much watching, care and attention for so long a time, and whose existence is a constant menace to the health and life of the woman?

My own belief is that the only safe course is to repair every appreciable lesion of the cervix, without waiting and looking for evidence of either benign or malignant disease. It is the only certain way to overcome the just apprehension of the physician, and to anticipate, with reasonable assurance, a constant danger to the lives of many women,—a danger that will not be met by a temporizing or tentative policy.

When will the time come that the general practitioner will see the necessity, or be able to convince women of the necessity, when feeling perfectly well, of submitting to periodic examinations, because of a threatened danger to health or life at some future time? It will be easier to convince both of the significance and importance of a safe operative procedure, both as a precautionary measure and to cure or to prevent a disease that is so frequently fatal.

Regardless of the existence of a cervical lesion, the necessity for unusual vigilance and care, as a preparation for and during the climacteric, must be conceded, and

*Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

the propriety of inculcating it is a duty every physician owes to his patient. But, as an essential to substantial progress, the profession must be convinced as to the facts, before women will have even the opportunity of securing the benefits claimed.

The influence of a persistent, chronic irritant in ultimately causing malignant disease, is well known. Would a thorough surgeon treat the primary condition by the application of means that are chiefly provisional, or would he radically remove the offending agent, and the conditions that so frequently end disastrously? There should be no doubt as to the answer.

I removed the uterus for carcinoma of the cervix by vaginal hysterectomy, on January 13, last, from a patient 68 years old, who had been so well for twenty-two years that she had not consulted a physician for any purpose whatever. She had given birth to two children before the age of 40; and, while the case illustrates the necessity of early examination, yet what would an examination, even at 50 have revealed, beyond a probable unilateral laceration as indicated by the ulcerated condition? The body is small and not diseased.

If the cervix had been infiltrated or thickened with endocervical catarrh, would it not have been manifested in the intervening years? With the laceration repaired, would not the chances for carcinomatous development have been diminished?

Trachelorrhaphy is not a dangerous operation. With all cicatricial and diseased tissue removed, the lips well adjusted and united, the most common pathologic condition antedating cancer of cervix is eliminated. If there is a predisposition to malignant action, cicatricial, which is always unhealthy, tissue, invites it. If there is no such tendency it often excites it. I feel convinced that, with all abnormal tissue removed, and the integrity of the organ restored, the mortality from uterine carcinoma will be still further reduced; and more certainly than by provisional methods, for delay is dangerous, and the trained sentinel is not always on duty.

It may be claimed that, in the young, active, child-bearing period, the operation for laceration, when no apparent disease exists, is not so urgent, but a strong plea for prophylaxis exists, if it is not done before the climacteric begins or is concluded. No one need be deluded because some women with cervical laceration go through life without serious trouble. This gives no immunity to others, and no safe line of discrimination is practicable, if possible; and there is no satisfaction to the physician or surgeon who fails to give the patient, in time, the benefit of every known measure of relief.

JUSTIFIABLE ARTIFICIAL ABORTION AND INDUCED PREMATURE LABOR.*

BY W. C. BOWERS, M.D.

DECATUR, ILL.

After a number of years of observation and study I am led to believe that abortion, both accidental and criminal, is frightfully common in all grades of society. Justifiable artificial abortion is not comparatively common, neither should it be, but seems sometimes required to save the life of a woman. Induced premature labor is as likely to be required in the interest of the child as of the mother, and in some conditions may be done in the interest of both. Neither should be decided on without honest consultation and serious consideration. "If thorough antiseptics be practiced, therapeu-

tic abortion adds little to the risks of the mother if carefully done. Otherwise it is often more fatal than the disease from which it seeks to deliver her."²

In any disease of a woman which is aggravated to so great a degree, because of pregnancy, as to endanger her life, and which can not be remedied so that she may live after labor, induced abortion should be considered in her interest; or, if late enough in pregnancy, in the interest of both mother and child. The possibility of waiting for the viability of the fetus should always be thought of if such a thing is possible without jeopardizing the woman's chances. The reasons for premature emptying of the uterus are many, but fortunately very few of them act with any degree of frequency, and the indications are rarely absolute.

It may be necessary to consider the procedure in a number of diseases and conditions. In nephritis, where eclampsia will probably occur if gestation proceeds or the woman's life be shortened by irreparable damage done, the kidneys as a rule, if albuminuria cannot be lessened and the general condition made better by milk diet, tonics and diuretics, an artificial abortion should be performed³. In advanced tuberculosis, in many cases, a woman's chances of recovery or longer life might be jeopardized by pregnancy, which in selected cases should usually be terminated as soon as discovered⁴. Aneurysm, unless superficially located, is an indication for prompt interference⁵. In the valvular lesions of the heart "success can only be expected if the pregnancy is terminated before the onset of serious symptoms."⁶ L. Demelin²¹ says that all depends on two grand conditions: 1, the anatomic-physiologic state of the myocardium; 2, the anatomic-physiologic state of the large emunctories—liver and kidneys—and that artificial abortion should be done in the gravest cases. In chorea gravidarum there is a marked tendency toward anemia, prostration and insanity⁴. A number of observers have reported favorably and a few unfavorably on the results of artificial termination of pregnancy, and "much after all must be left to the judgment of the individual observer as applied to the requirements of the individual case."²² Peripheral neuritis of pregnancy, which is probably due to autointoxication, occurs as a rule late in pregnancy and may prove fatal. "One must be prepared to induce labor before the disease has advanced too far, for as soon as the uterus is emptied there is naturally a tendency to recovery."⁷

Goiter depending on pregnancy is usually very vascular⁸, and if constantly increasing in volume may cause death from suffocation, by compressing the trachea.⁷

Since treatment of goiter is so unsatisfactory, and intraglandular injection of tincture of iodine, the surest treatment, is so dangerous that it should now be entirely discarded²³, and since some time must elapse before symptoms are relieved, the goiter should not advance too far in size before ligation of the thyroid arteries is performed or the uterus is emptied. Both may be required. Pernicious anemia is a rare disease, but should pregnancy supervene, artificial abortion is justifiable if the anemia deepens in spite of good treatment. This is also true of leucocytosis. Diabetes mellitus in the pregnant is exceedingly rare, but not especially changed in its manifestations. The prognosis is unfavorable to the child and, from this fact and for the reason that many recover after the labor terminates, one should induce labor if the mother's condition prompts it.

*Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

In eclampsia the indications for emptying the uterus are not always plain, as in not half the cases do the convulsions stop after the uterus is empty²³. An old rule followed by many is to deliver immediately under an anesthetic, on the appearance of a fit. Some say that eclampsia depends on a disease of the kidneys peculiar to pregnancy, and for its prevention labor should be induced as soon as any considerable amount of albumin is found in the urine or the case gets progressively worse²⁷, because after the fits have commenced and the urine is solid with albumin the course of the disease is not affected by delivery.²⁴

In cancer of the uterus, which is exceedingly uncommon in pregnancy, termination of pregnancy by artificial means is restricted to the later months of pregnancy⁶, when if a vaginal hysterectomy is determined on an abortion should be done two or three weeks beforehand.

Melancholia, hystero-epilepsy and insanity require close study in each individual case to determine how much the trouble depends on the pregnancy or is aggravated by it before radical measures are adopted. There is a strong tendency in these later days to interfere with the increase of idiots, profound degenerates, and habitual criminals, so much so that castration²⁹ or reaction of the vas deferens²⁰ in males, and ovariectomy or tying³⁰ of the Fallopian tubes in females have been advocated. While interfering with pregnancy in these classes has not been openly advised, yet it has been suggested and is certainly to be thought of in properly selected cases.²⁰

Irreducible displacement of the uterus, particularly if uremic symptoms are manifest⁸, and old adhesions among the viscera above the pelvis⁹, causing retroversion and retention of the uterus in the pelvis, are positive indications for interference.

Anteroposterior contraction of the pelvic inlet to approximately 2.36 inches, and occlusion of the genital tract by tumors, cicatrices, etc., call for interference unless the woman elect Cesarean section.⁸

Unavoidable hemorrhage is a sure occurrence in placenta previa, and abortion is almost without exception necessary, and by means that will control the hemorrhage at the same time¹⁰. In accidental hemorrhage, if the symptoms of loss of blood are considerable and not promptly relieved by rest and opium, pregnancy should be interrupted in the interest of the mother². The membranes should be ruptured and ergot² and strychnia given. Marx¹¹ has lately reported a case in which repeated attacks of profuse epistaxis constituted the indication for the induction of abortion. The bleeding from the nose had occurred every three or four days for ten weeks and the woman was intensely anemic and in collapse. Medicine and plugging the nose had done no good. Accouchement forcé was done and a favorable result obtained.

In missed abortion, dead twin⁶, and vesicular mole¹² the uterus should be emptied as soon as the condition is positively determined. Polydramnios calls for active interference if symptoms of overdistension persist or grave disturbance of the mother's heart supervene³. J. C. Cameron mentions as indications, jaundice with diarrhea, general edema and edema of the vulva, but these would surely be symptoms rather than diseases with rare exceptions. A premature labor might be induced in the interest of the child rather than do a post-mortem Cesarean section where the mother had a fatal malady from which she would be liable to die at any time; also if the children had perished in previous labors because of great size or because of dis-

proportionate size. Probably the most common reason for interrupting pregnancy is hyperemesis gravidarum, which should not be allowed to proceed to "extreme exhaustion, pain beneath the sternum, and coffee-ground vomiting."²⁷ Klein¹³ says that it is especially important that these cases are not allowed to become severe before pregnancy is interrupted. To be pathologic, the "nausea must persist after the patient has arisen or be experienced when the patient is in the recumbent position."²⁷ Bacon¹ says that vomitus gravidarum may be defined as vomiting during pregnancy due to a variety of immediate causes acting on the abnormally irritable nervous system of the pregnant woman. Nausea and vomiting being only symptoms, the physician should not conclude that they are due to the mere condition of pregnancy until able to exclude all other diseases. My cases have been mainly those of hyperemesis, but show interesting features.

Mrs. V., aged 22, American, spare but well proportioned, was neurotic and a bad feeder; general health has been good, but has had "nervous spells" occasionally for years, and at times some dyspnea from no apparent cause; always had dysmenorrhea and constipation. I saw her in one of her nervous spells in May, 1893, when she was pale, very restless, and had dyspnea, and intermittent extreme weakness. Her heart and lungs were normal and no serious disease of any organ was found. Aromatic spirits of ammonia and Hoffman's anodyne relieved her promptly, and it was reasoned that the trouble was a manifestation of hysteria. Following this, sulphate of soda and tonics did her much good. A week after this sickness she menstruated, with pain as usual, but her general condition improved until some time after she missed her monthly, in June, 1893. Constant nausea and vomiting of white or greenish slime, with restlessness, poor sleep, loss of appetite, became a part of her symptoms and steadily increased until signs of exhaustion showed themselves. Chloral and bromid were carefully tried by mouth and rectum, morphia and atropia hypodermatically, bismuth and carbolic acid by the mouth, counterirritation, nitrate of silver to the cervix, and many other remedies. Cocain was given in lemonade, the only thing she could swallow and retain, but as soon as she learned that there was medicine in it, she promptly vomited lemonade. A. S. and B. pills stayed down and induced proper bowel movements. The sight of food or medicine or the smell of either and of perfume would bring on terrific vomiting. The urine was normal and passed properly and there was no pain nor headache, but she ached all over all of the time, and had a slight rise of temperature daily, was in motion day and night, although confined to her bed; and when apparently asleep, which was rarely, she was cognizant of all passing events. July 12, her condition was so alarming that counsel was called in and the cervix moderately dilated with steel branched dilators, carbolic acid applied within the cervix and pure nitrate of silver lightly applied to the vaginal face of the cervix. The vomiting became less for a few days but no other improvement appeared and the vomiting returning as bad as ever by July 20 an antiflexed uterus was dilated and curetted under ether. Plenty of decidua was removed, but no signs of a fetus could be found. Uterine douching followed the curetting, and careful cleaning of the genital tract preceded it. Vomiting and nervousness was relieved for three days, when it started up again as did also some fever. The modest use of the dull curette, removing a few fragments of

decidua, and a rather free intrauterine douche stopped the nausea and moderated the fever. No medicine was given and no food could be taken because of the anorexia. A sip of lemonade taken frequently seemed to be retained, but water, iced, cool, or hot, was vomited the same as anything else. July 28 a relapse of vomiting with severe pain in the abdomen came on with increasing fever. A few small pieces of decidua were again removed with the dull curette and douche, and a rectal suppository of belladonna and opium gave prompt relief, and she sat up some after two days. From the first curettement she had an insatiable desire for iced lemonade and a loathing for every other form of food and drink, but constipation being troublesome and as severe stomatitis showed itself, iced drinks and especially lemonade, were forbidden, and milk and lime-water or animal broths were to be drunk whether vomited or not. Two 5-grain doses of calomel were given two hours apart. A moderately strong solution of chlorate of potash was used to keep the mouth constantly moistened, and a little swallowed every three or four hours. Constant improvement started in, interrupted at times by attacks of acute indigestion, which were always relieved by moderate purging with calomel, placed dry on the tongue, as it in any other form or any other drug was promptly vomited. Carbonized vaginal injections were used daily from the time of the first curettement. She drove out at the end of the third week, when she weighed 72 lbs., her average weight being 115 lbs. She was in fine health four months later and has had easy monthlies ever since. She is yet troubled at times with nervous dyspepsia and hysteria near menstruation time, relieved by correcting indigestion and especially by the free and prolonged use of the tincture of *asafoetida*. She has had two fine children since 1893, with only moderate disturbance, and to-day has excellent general health.

Mrs. F., aged 31, married ten years, never pregnant, sometimes constipated a week at a time, which was often followed by diarrhea, had always slept well, worked hard on a farm, and always had good general health, but for the past year had leucorrhœa, and menorrhagia with clots. On Feb. 25, 1896, she suddenly stopped flowing midway in the monthly, without apparent reason. April 1 she became nauseated, dizzy, and slept only half the night. She was partially relieved by general treatment, but on April 18 nausea, loss of appetite, inability to sleep, and a general decline forcing themselves on the scene, a careful search for local trouble was made. There was no tenderness in the genital tract or pelvis; but in the wall of the uterus, apparently at the junction of the right Fallopian tube, and the uterus was a goose-egg-sized tumor which was sensitive. The uterus was freely movable, somewhat enlarged, and the cervix softened, and some endocervicitis with erosion manifest. My suggestion of pregnancy was laughed at by the woman and her friends. I applied pure carbolic acid to the os, tincture of iodine to the cervix, placed a glycerin tampon and dusted the vagina with boric acid. Bismuth before meals, bromid after meals, laxatives, warm carbolized vaginal injections with the one local treatment relieved her very much for a few days. On April 20 severe nausea and vomiting with bad diarrhea was much relieved by calomel by the mouth and chloral and bromid by the rectum. Following this daily hypodermics of morphia and atropia relieved her some, but not being under any positive control, as she was not in a hospital, and thinking herself not pregnant, she attempted to stay up and about the house, but an error

in diet brought her down again. The morphia and atropia held the vomiting to a moderate amount, but the condition of the patient by May 1 was so serious owing to rapid anemia, debility and slight fever, that a consultant was called who verified my diagnosis of pregnancy and advised therapeutic abortion unless debility ceased to increase. For the next week the wasting of the body and the increasing exhaustion was alarming. On May 9, after thoroughly cleaning the field of operation, I dilated the cervix three-fourths of an inch with a two-bladed steel dilator, and on May 10, morning and evening, to about one inch each time, which was followed by slight pains through the day, while on May 11 there was sharp pain for an hour, followed by a gush of blood and terrific vomiting. In the evening I introduced a sound and found the uterus five inches deep. She slept well most of the night, except for a few spells of vomiting. She took nothing but ice and her vomit was a greenish slime. On May 12 I dilated the cervix one inch, and at noon sharp pains came on for an hour, the patient felt something give way in her side and nearly fainted. The pains ceased, there was no hemorrhage and she rested well until evening, except for two hard vomiting spells. May 13 I found the uterus more rounded and fuller and the tumor gone from the original site. The cervix was dilated to $1\frac{1}{4}$ inches, followed by regular labor pains and at 9 p. m. a live fetus was born by breech presentation. The length was $3\frac{1}{2}$ or 4 inches, the cord 3 inches and not much twisted. The time of pregnancy was about three months. The membranes and placenta were removed by the large dull curette and finger, under chloroform, followed by a copious hot creolin douche. The woman had a ravenous appetite the next day though she vomited once, and recovered slowly but completely with but little flow, no pain and no fever, and to-day is in excellent health.

This must have been a tubo-uterine or an interstitial pregnancy, and had the nausea moderated or vomiting ceased after the tumor changed its place, I should have made a great effort to have saved the conception. This case shows that the treatment of dilating the cervix for pernicious vomiting is not a certain remedy; the reason for the repeated dilatations was that each time they neither stopped the nausea nor caused sufficient irritation to bring on the pains.

I saw the following case Sept. 11, 1898, with Dr. W. P. Davidson of LaPlace, Ill., and obtained the following history and conditions. While an abortion was not induced I have often regretted that I did not commit one as soon as she improved some, and thereby give her the best chance for her life as the ending of the case seemed to show. Mrs. F. G., an American, aged 32, was the mother of four children, who were perfectly well, except the oldest, who is 12 years old and has a bifid lumbar spine with complete paraplegia. The mother had a miscarriage the first year of her marriage and in the spring of 1896. The last miscarriage made her have irregular, painful and profuse monthlies for about a year, when she was curetted with complete relief. In 1897 she had severe subacute rheumatism, which disabled her right hand for six months. With the exception of these troubles she had good health. She always vomited when pregnant, amounting to hyperemesis with the fourth pregnancy only and was relieved by one hypodermic of morphia and atropia followed up with chloral and bromid of potash and by hygienic attention. In May, 1898, she had three days' hemorrhage like a monthly, in June two days, in July one day at

two different dates, and in August a few hours. She commenced being sick by having a severe diarrhea about two days in each week. Some blood was seen in the stools three different times about the first of August. In the last week in August she commenced to feel nausea and vomited almost incessantly day and night, had thirst, but loathed food, and got but little sleep and at night only. September 11 her weight was 120 lbs., having lost 20 lbs. in two months; pulse 100; temperature 99.5; respiration 32. The urine was normal sclerotic yellow. The tongue had a blackish coat. She had unquenchable thirst, retained no food and did not want any, and kept down a little whisky and water and limewater. The uterus was movable, normally situated, and enlarged to two or three months' pregnancy. The vaginal and cervical mucosa was red, soft, eroded and bled easily.

A mixture of iodine and carbolic acid was applied, and a creolin and glycerin tampon was placed against the cervix, and if it had any effect it made the erosion worse. Nitrate of silver, 40 grains to the ounce, was applied several times with no benefit. Alum and carbolic acid injections were used with probably some local benefit; most of the general remedies for such a case had been tried with but little benefit. Therapeutic abortion was talked of, but the danger of sepsis seemed so great in this case and the probability of some serious disease, not determined, complicating the pregnancy, and the family desiring to try other means first, this treatment was postponed. Morphine $\frac{1}{4}$, atropia 1-150, was given hypodermically, and she vomited only five times in the next forty-eight hours. Nutrient enemata were given, as were also saline enemata at irregular intervals, and the morphia and atropia depended on twice a day to give relief from the horrible nausea. After ten days the jaundice was less and the other symptoms had moderated, but ability to take food was not better and the morphia was being constantly, though not rapidly, increased, as is usual when it is given in such cases, and she had in the meantime vomited blood and passed blood in the stools. About October 1, stomach feeding was impossible, anemia was severe, there was pain under the sternum, the pulse increased to 140 and the thermometer showed rise of temperature. She also complained of blindness but the cause could not be determined. Other consultants about this time concurred in the opinion of probable pregnancy and believed it complicated with malignant disease. A post-mortem examination was not obtainable, so the correctness of our conclusions could not be known.

In view of the difficulty of making a certain diagnosis of cancer in any particular case, and from the fact that many pregnant women recover with astonishing rapidity after abortion or labor in what appear to be desperate cases, it is possible that this woman could have recovered had an abortion been induced at the time or her improved condition.

Mrs. A. H. B., an American, aged 39, robust looking, weight 125 lbs., low in stature and neurotic, gave a history of having had headache all her life, diphtheria at 18 years of age, and stomach trouble ever since. Her appetite was usually good, but starchy foods often caused belching and sour stomach, but she was never constipated. She has had painful monthlies since her first child was born, though about normal before then. Three living children have been born to her by slow, hard labors, and she has had no miscarriages. Nausea was quite troublesome with all pregnancies, and especially so with the last one about 1893.

A trachelorrhaphy was done for her in 1889, and benefited her, as her uterus was heavy and prolapsed at that time. In 1892 a moderate prolapse must have been mistaken by some physician for an elongated cervix, for he had cut it off at the utero-vaginal junction and left it to cicatrize without suturing. Her last monthly, before this sickness, occurred the last of September, 1898, and the first nausea about the middle of November. The uterus was retroverted, not freely movable because of its position and its moderate enlargement. No unusual tenderness was felt anywhere and the peculiar round scar with the cervical opening in the center, unlike a normal os, was felt in the upper part of the vagina close to the pubes. The nausea and vomiting of some mucous and greenish fluid was often repeated and awful. An intense pain was felt in the stomach on swallowing anything; and anorexia was complete. Every form of treatment was tried without avail except that chloral and bromid by the rectum gave her some sleep at night, though it did not relieve the nausea and vomiting. The uterus could be replaced without much force, by dragging down the cervix with a tenaculum and pressing up on the fundus through the posterior cul-de-sac, but could not be retained by the meatus tried as it was easily displaced by the force of vomiting. She had pleasant surroundings and good and efficient care, but the consultant and myself decided that in view of the fact that no manner of treatment seemed to benefit her, the difficulty of keeping the uterus from becoming retroverted was so great, and because she was needed in her family, they being wage-earners could ill afford to have her so sick for a long time, a therapeutic abortion was a reasonable procedure. This was done under chloroform, Nov. 25, 1898, by dilating with steel branched dilators and curetting with the sharp curette, removing much decidua, but no part of the fetus was found. Thorough douching was done with hot 2 per cent. creolin solution and an occlusion dressing put on. She got better rapidly but much care in diet and medication was necessary for some time, and chloral and bromid by the rectum was needed several times to relieve severe insomnia. At present she is in good health.

While no operation was done on the following patient, the case is one which illustrates the symptoms, principles of treatment and desperate condition into which these patients sometimes get and yet recover; also from the fact that the hyperemesis occurred late in pregnancy only.

Mrs. J. E. H., an American, aged 42, small, spare built, nervous, active, plucky and not hysteric, as a child suffered considerably with night croup, and later had typhoid fever and was always spoken of as a sickly girl. Her first monthly occurred at the age of 16, was very profuse and accompanied by epistaxis. She had no more monthlies until after marriage, at the age of 19, when a menstruation occurred within the first month, and was painful. She had no more, as she became pregnant. Of late years she has been more nearly normal with her menstruation. She had two children from her first marriage and no severe nausea during these pregnancies; from the second marriage, three children, all these pregnancies showing a considerable nausea. There has also been one molar pregnancy which terminated without unusual disturbance. The last menstruation preceding this sickness occurred April 2, 1898. Nausea and vomiting developed about a month later and kept up until by September it became so severe that a homeopathic physician was called in to prescribe for

her. The vomiting was so terrific and the case looked so desperate that his nerve soon gave out and he was glad to have the patient go to someone else. My colleague, Dr. E. J. Brown, took charge of the case about the last of September and gave her some good rest and sleep by using morphia and atropia by the hypodermic method.

She had not been able to keep food down but for a few minutes at a time for several weeks, but under the influence of hypodermic injections twice a day no vomiting occurred for several hours each time, when butter-milk could be drunk by icing it, although there was a loathing of all forms of food. The ease fell into my hands through the Doctor's courtesy, he being obliged to leave home not long after taking the case. The vomit was greenish, resembling chewed spinach, enormous in quantity, but at times a smaller quantity resembling coffee grounds would be thrown up. There finally appeared a constant pain in the stomach and under the sternum. This pain was for a time relieved by the morphia, as was also the nausea and vomiting, by increasing doses but for shorter and shorter intervals. She had a severe and constant pain in the left arm and some sores on her right hand, which refused to heal completely. Premature labor was talked of, but the woman's condition was so desperate, owing to the extreme reduction of flesh and strength and the almost certainty that either cancer or ulcer of the stomach existed, that the risk of her promptly dying from the operation was considered too great. About November 1 the liquor amnii drained away slowly, but after a week, labor not coming on and in view of the seriousness of her condition, I urged her to have her will made out lest something grave happen depriving her of any chance so to do. On November 7, 1898, two lawyers made out her papers, by giving her plenty of time. Her voice was thin and feeble, her pulse weak and running about 140 to the minute and her features pinched and haggard. Strange to relate, labor set in on the morning of the 8th and was over normally in three hours; vomiting ceased when the os was half dilated, and never returned. The child weighed about 5 lbs., and both mother and child have done very well from that day to this.

Providing no accident had occurred as a result of the operation, an induced premature labor would have yielded a brilliant result. The ending of the case shows that an interruption of the pregnancy had not at any time been necessary, yet almost any one would have considered the case so serious that interference would have been gladly undertaken by all parties concerned could there have been given a promise of the woman's recovery.

In my sixth case the most noticeable and distressing symptom was hyperemesis, but the interesting feature of the case was the pathologic condition of cystic degeneration of the chorionic villi. This condition consists of a hypertrophy of the villi of the chorion and their conversion into cysts. This change is essentially in the endochorion, and is an overproduction of the mucous tissue within the villi.¹⁵ There is no well-established single cause, but it seems a certainty that it never occurs except after impregnation. The manifold causes are given as diseases of the uterine walls or lining, death of the fetus, absence of blood-vessels in the allantois, and stenosis of the umbilical vein. It occurs hardly more than once in two thousand pregnancies and, unless vesicles escape, which is rare, the condition might not be suspected before the third

month, when the rapid enlargement of the uterus, absence of fetal indications, and the history of irregular uterine hemorrhages would indicate hydatidiform mole. Pernicious vomiting may accompany this condition and be as severe and persistent as in natural pregnancies. Relief is finally obtained only through natural expulsion or artificial abortion, and complete emptying of the uterus. Great care is required in using artificial means of removing all cysts and decidua, lest perforation occur through uterine walls made thin²⁸ by vesicles permeating them. If some portion of the blighted ovum remained and seemed hard to detach, probably it were best to leave it to come away, or be removed at some future time when it had loosened or signs of septic danger arose. Well-established rules of asepsis and antiseptics should be rigidly observed in these cases.

Mrs. W.³¹ aged 42 years, robust, stout, belonging to that class of people known as "Pennsylvania Dutch," had a few irregular monthlies in the spring of 1891. She had never aborted, was always regular, and the mother of eight children, the youngest 3 years old; always had easy labors but considerable post-partum hemorrhage after the last confinement, seemingly due to failure of tonic contraction of the uterus, because of too rapid delivery of the fetus. When the case came under my care, about the middle of July, there was a history of absent monthlies from May, with pyalism, morning sickness and other symptoms indicating a probable pregnancy of about two months' duration. For the past two weeks the nausea and vomiting had been increasing so much that apparently no food was now retained, thirst was most distressing, pyalism was troublesome and gushes of blood, dark and watery, from the vagina, were frequent though intermittent and unaccompanied by any marked pain. She had a distressed look continually, loathed food, everything "tasted bitter," bowels were regular, had lost flesh rapidly since hemorrhage and vomiting became severe, and the bladder was irritable, but the urine contained no albumin. She slept fairly well and the nausea was not so bad when lying down, but a sick child kept her up. Calomel was followed by black draught; bismuth and bromid of potash gave considerable temporary relief.

July 29 she took her bed continually, temperature 100, pulse 108, general symptoms severe, and could not urinate except when on her hands and knees; nausea and vomiting horrible. A vaginal examination showed the os a transverse slit and high up behind the pubic bone; the uterus, apparently the size of an average child's head at term, was retroverted and almost pushing out an unusually large ostium vagina, and not felt in the hypogastric region. No evidence of tumor or cancer was noted and the uterus was partially replaced while the patient was in the genupectoral position, and this position ordered to be taken several times a day and the vulva opened to allow entrance of air. Popular remedies were used and rectal alimentation, but with no relief, except that the fundus, in about a week, could be felt in the hypogastrum, and the difficult urination ceased. The family being of the homeopathic faith, would consent to hypodermics only as a last resort. August 4, a hypodermic injection of $\frac{1}{4}$ gr. of morphia and 1-150 gr. atropia was used, giving complete relief for twelve hours. Morphia $\frac{3}{8}$ and atropia 1-100 was given hypodermically from this date for two weeks with suppression of the symptoms and ability to take food. The woman becoming more and more exhausted, and the symptoms returning promptly on attempting to stop the treatment, an abortion was decided to be about

The only promise of relief from the pernicious vomiting. On stopping the hypodermic injections violent vomiting came on in twenty-four hours, the cervix was partially dilated by the fingers, active hemorrhage and pains occurred and an abortion was the consequence. The severe hemorrhage, preceding the abortion, was held in check by fingers and part of the hand in the cervix. The vesicles came away in small masses and felt like blood clots slipping through the hand. There was about a quart of them and blood and clots in a basin, presenting a striking appearance, likened by Dr. Gooch to "white currants floating in red currant juice." Some decidua in the shape of membranes was found, and no embryo. Great care was used in cleansing the uterine cavity, lest a wall made fragile by vesicular penetration be ruptured. A piece of decidua came away the next day. At no time had there been a rapid enlargement of the uterus nor an appearance of vesicles in the discharges, leading me to a diagnosis of the true condition. The woman made an uninterrupted and complete recovery, but hypodermic injections were necessary at 5 a. m. each day for a week, to keep down the nausea and violent vomiting. She has had good health since, and has never been pregnant.

BIBLIOGRAPHY.

1. Bacon, C. S.: Vomiting of Preg. Am. Jour. Med. Sci., June, 1898
2. Davis, E. P.: Treatise on Obstetrics, 1896.
3. Ashton, W. E.: Essentials of Obstetrics.
4. Grandin and Jarmin: Obstetric Surgery, 1894.
5. Rosenburg, Julius: N. Y. Med. Jour., Jan., 1896.
6. Hirst and Dorland: Am. Year Book, 1898.
7. De Soyre: Archiv. de Tocologie, Jan. 30, 1897.
8. Cameron, J. C.: Am. System of Obstetrics, Vol. II, Hirst.
9. Pinard and Vanier: Ann. de Gyn., 1896.
10. Föth: Centralbl. f. Gyn., 1896.
11. Marx, Simon: N. Y. Acad. of Med., Sec. on Obstet. and Gyn., Feb. 22, 1896.
12. Playfair, W. S.: System of Obstetrics. Sixth Edition.
13. Klein: Zeitsch. f. Geburtshilfe und Gyn., 1898, B. 30, H. 1.
14. Hodge, Hugh L.: System of Obstetrics, 1891.
15. Hare, H. A.: System of Practical Therapeutics, Vol. IV.
16. Carter, J. M. G.: Trans. Ill. State Med. Soc., 1898.
17. Year Book of Treatment, 1897.
18. Englemann, Geo. J.: Am. System of Obstet., Vol. I, Hirst.
19. Anders, J. M.: Practice of Medicine.
20. Ochsner, A. J.: Surgical Treat. of Habitual Criminals. JOURNAL, April 22, 1898.
21. Dermiin, L. L.: Obstet., Jan. 15, 1896.
22. Lloyd, Jas. Hendric: Am. System of Obstet., Vol. I, Hirst.
23. Metzger, S. J.: Hare's System of Prac. Therapeutics, Vol. IV.
24. Herman, G. Ernest: International Clinics, July, 1897.
25. Virchow: Cellular Pathology.
26. Boal, Robert: Trans. Ill. State Med. Soc., 1894.
27. DeLee, Joseph B.: Ibid, 1899.
28. Black, Carl: Case of Vesicular Mole, Ibid.
29. Wingate, U. O. B.: Etiology Prevalence and Treatment of Hysteria, Medicine, May, 1896.
30. Dewey, Richard: Contagion and Infection in Nervous and Mental Diseases and Degeneracy, and Measures of Prevention. Medicine, May, 1899.
31. Vesicular Mole. N. Am. Practitioner, Oct., 1891.

TYPHOID FEVER.

NOTES ON TWO EPIDEMICS IN THE IOWA HOSPITAL FOR INSANE.*

BY GEORGE BOODY, M.D.
INDEPENDENCE, IOWA.

Previous to 1896 there had never been more than two or three cases of typhoid fever in the hospital for insane at Independence. Early in September of that year it made its appearance for the first time as an epidemic, and within three weeks twenty-eight cases, all males, were taken down with the disease. It was not confined to one ward, but after its advent it broke out at intervals of a few days in widely separated wards or in the cottages; sometimes one case a day, and at others

two or three would be stricken with it on the same day and in the same ward. It ran its course within twelve weeks and disappeared, leaving the institution apparently free from the contagion until August 6, 1898, when it was visited by a second epidemic, which spread quite rapidly and in much the same manner as the first, continued over about an equal period of time, and subsided as suddenly as it came. About the time of the beginning of these epidemics there were a number of cases of typhoid fever in the surrounding country within a radius of ten miles.

Source of Infection.—Since the organism is conveyed most frequently through the medium of water, attention was turned at once to the condition of the water-supply. It comes from dry points, thirty feet beneath the surface in a sand-bed, and the city near by receives its supply from the same source. These points are 80 to 150 feet from the river and located in a depression about which there are a number of dwellings, barns and vaults, there being no sewerage system in that part of the city, hence drainage by means of seepage tends toward the drive wells from three directions. There was no typhoid fever in the city, as might be expected if infection came through the water, yet specimens were collected and careful examination made by Professor Beirring of the Iowa State University, with negative results. Then it was thought it might come through the milk, but this was all produced on the farm, and investigation showed that it could not be the source of the contagion, except through one channel of introduction—into the milk first, as will be seen later on. Then it seemed that fruit and other foods which were shipped in from different parts of the country might have become infected by coming in contact with the hands of those who had engaged in preparing them for shipment, and who may have come from homes in which there was at the time, or recently had been, typhoid fever. There was nothing about any of these to indicate infection, and to positively demonstrate its presence or absence seemed a hopeless task and was not attempted. There were a number of cases of fever in the country adjacent to the hospital at the time of the beginning of each epidemic, and this fact revived the old theory that flies carry the organisms upon or within their bodies, or both, and in their migration, deposit them upon the general food supplies, or more likely upon the food after it has been placed upon the tables. They were very numerous, and this led to the belief that they were the carriers of the disease germs, they having first come in direct contact with the sick, or having sipped from that portion of the cup which had been in contact with the patient's lips, or after having walked about upon and eaten some of the dejecta, had flown across the country to the hospital and there deposited their dangerous burden upon food or vessels wherein food was prepared. That the poison was disseminated in this way there seems no reasonable doubt, since it has already been proven that flies walking about upon dejecta or on prepared cultures and then lighting upon a culture-medium inoculate it with the typhoid bacilli; and it is the belief of the writer that both epidemics originated in this manner, yet it was not demonstrated except by partial exclusion.

The prodromal symptoms in each of the twenty-eight cases of the first epidemic were unusually well marked. There was general malaise, severe pains in the head, posterior portion of the neck and back; very marked rigor in nearly all and nausea and vomiting in a number; roseola over the abdomen of all but one, and in one half

*Presented to the Section on Practice of Medicine at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

they extended over the chest and thighs as well. They all had the typical markings of the tongue, the curving fever, with pulse and respiration in corresponding ratio, except when there were lung and heart complications; the bowel disturbances, diarrhea and tympanites and enlarged spleen, delirium in a few and typhoid expression in all; epistaxis in three, and in one of these there was also hemorrhage from all of the mucous surfaces and severe hemorrhages from the bowels of two others; albumin in the urine of sixteen and casts in four. Of the fifteen cases in the second epidemic not a single one had distinct chills, one had the typhoid rash, but it was not nearly so well marked as in the first, except in one patient, whose entire body was so uniformly covered with it that it was impossible to put the tip of the finger upon the skin anywhere without placing it upon a rose spot. They appeared over the abdomen first and gradually spread over the rest of the body. Albumin was present in the urine of all but one, in amounts varying from a mere trace to .5 per cent. in quantity; casts were present in two. With these exceptions the clinical symptoms were the same in both epidemics, and these in the first, together with the diazo reaction, which was found present in a few cases tested, and the isolation of the typhoid bacillus, completed the chain of evidence upon which the diagnosis was based. The writer was not yet familiar with the steps required nor with the technic in making Widal's blood-serum test, or else the last and most perfect test necessary to complete the chain would have been added and the diagnosis still further confirmed. In the last epidemic the diazo test was applied to the urine of every patient and the reaction found to be positive in all but two. Widal's blood-serum test gave a positive result in eight cases within seventy-two hours after the onset of the disease; one was negative until the ninth day, when the result was positive; one until the fifteenth day, when reaction was very positive, four tests in all being made; two negative on the first and also on the fourth days and reaction perfect on the seventh day; a fifth was negative on the first and positive on the seventh day; a sixth negative on the first and positive on the seventh day, and a seventh negative the first and only time the test was made. These confirmatory tests are of exceedingly great value, and without the latter one would always be in doubt as to whether an inverted case of typhoid fever was typhoid or not unless all the clinical symptoms except the fever, pulse and respiration were very well marked. Then, too, one is not justified in relying upon one test unless the reaction is positive, but trials should be made every few days until a reaction is obtained. There is a time in every case of typhoid fever when sufficient toxin has been developed in the blood to cause a clumping of the bacilli.

Of the first twenty-eight cases seven died. One epileptic, 21 years of age, died in status epilepticus after convalescence was well established, and a second, 17 years of age, was taken with tuberculo-pneumonia just as the fever had begun to decline, and perished within a few days. He also had a number of severe epileptic seizures, and the second a typical pneumotubercular lung. A third, a patient 69 years of age, with organic dementia, died at about the tenth day; a fourth, aged 53 years, a case of dementia, and a fifth, 43 years of age, died within ten days, and a sixth and seventh, one 19 and one 30 years of age, both of whom had been unusually strong and healthy, died early in the disease. The findings at the autopsies were typical typhoid

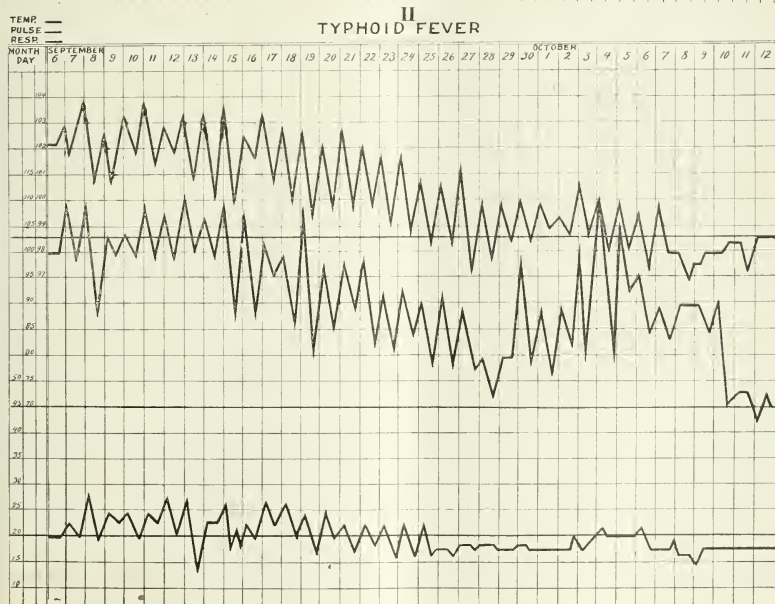
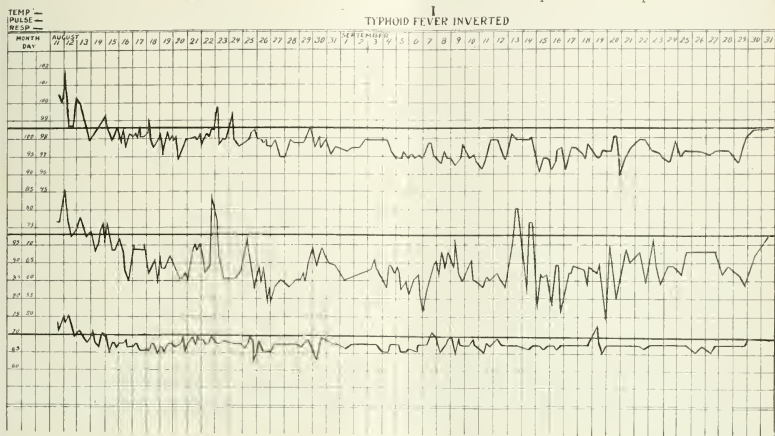
lesions, with a perforation in one of the last two, and in another there was in addition marked brown degeneration of the heart, and a third had softening of one parietal lobe of the brain. Microscopic examinations of sections from the spleen of all the cases examined showed typhoid bacilli. They were stained with aqueous fuchsin, but much difficulty was experienced in staining them. The death-rate was 25 per cent., but it must be remembered that only four of these cases went into the disease with any hope of withstanding its ravages. Of the fifteen cases in the last epidemic not one died, but they were with few exceptions better fortified, and there was no serious physical complication.

The treatment in general was absolute rest in bed, which also included the case of inverted fever to be described later on, careful nursing, dieting, baths, and the administration of medicine with a view of antiseptics as far as possible, and a use of such drugs as seemed best to meet the indications and for tonic effect when needed. During the first epidemic intestinal antiseptics were given all the way through, and the diet consisted chiefly of milk, alternated now and then with beef-tea and broths; water was given when called for. Sponge-baths, tub-baths and ice-packs were given as seemed best suited for the case in hand, the former being used most frequently. In the last fifteen cases little attention was given to drugs as intestinal antiseptics, but instead pure cold water was prescribed in quantities ranging from 100 to 150 c.c. to be given every three hours throughout the twenty-four unless otherwise instructed, a little listerine being added in order to make the patients feel that medicine was being given, and water was also given if the patients called for it in the meantime, the chief aim being to flood the digestive tract with from one to three liters of liquid, including milk and other liquid foods, in twenty-four hours, with the hope of increasing the blood volume, and of thus diluting the toxic elements and hastening their elimination. The diet consisted of milk alternated with Mellin's food and Horlick's malted milk; broths, beef-tea and raw egg were given when a change from the prescribed diet was desired. Tub-baths were given except to patients much emaciated, or where there was unusual weakness, or where it was feared they might be followed by shock and collapse. Some of the patients dreaded very much to be placed in a cold bath, and in order to avoid both mental and physical shock they were immersed in tepid water which was then cooled down to the required degree of coldness. It seems only just and right that heed should be given to the appeals the patients usually manifest in mental or physical shock, if not by verbal request, for more appreciable, and at the same time more humane, methods in the administration of hydrotherapy—the sheet anchor of our hope in the treatment of this dread disease.

The subject of typhoid fever is an old one, and in these days it is next to impossible to express a new idea, one that has not already originated in the minds of physicians everywhere, or to meet with an unusual case, one which has not been observed and carefully studied by every regular practitioner. Hence, when it is said that this paper would not have been thought of had it not been for one case among forty-three reported which differed from the ordinary—and that a case of inverted typhoid fever—each one may be able to call to mind a similar case, yet not many of these cases have been reported. Many authors speak of a low type of fever. Early in winter Goltman gave an excellent report of a case together with

a tracing of the temperature curve; the case was as near like the one here pictured as it is possible for two to be, and nearly the same steps were taken to prove it. It appeared in the *Medical Record*, and was reviewed in the December number of *Medicine*.

This is the first case which it has been my fortune to observe and to study from the onset of the disease to its close. The patient was a male, 57 years of age, and a melancholiac, with marked mental depression and lowered vital functions previous and up to the time he was



taken sick. There was general malaise but no pain, the tongue was coated and the tip and border red but there was no tremor; slight tympanites was noticed, especially in the right iliac fossa, where, upon pressure, faint gurgling could be elicited and also some tenderness. For a time the stools were thin and characteristic in color, and over the abdomen were rose spots, but they were far less numerous than in any of the other cases, yet quite typical. The temperature was 101.2 on the day it was discovered that he was sick, and it rose to 102.8 on the second, then fell below normal, remained there with the exception of a few times, when it reached a point slightly above normal, but remained so only for a short time. The pulse and respiration curves as indicated by Chart 1, which is an exact copy of the temperature, pulse and respiration variations as recorded and accurately traced from the time the patient was taken sick until his recovery, show a very marked relation to the fever curve, being either above or below the normal line and sliding up and down at about the same time. Accurate tracings of the temperature, pulse and respirations in all the other cases, all of which were of the ordinary type of fever, were made, and Chart 2, a copy of one, is typical of all of them. All the clinical symptoms previously mentioned in this special case were very like those in ordinary cases, except they were not so well defined; but when the last three points are taken into consideration there is found to be a vast difference. This difference is better illustrated than told as shown by comparing the two charts. With all these symptoms there was yet much doubt as to whether or not it was a case of typhoid fever, and there yet remained two tests which, if applied at short intervals throughout the course of the disease with negative results, would have classed the case with some low form of fever or toxic condition not typhoid. The first of these—the diazo test—gave a positive reaction during the fourth week, and the second—Widal's blood-serum test—gave a positive result on the third day of his sickness, thus showing that the blood at this early date was sufficiently charged with the toxin to cause agglutination of strong twelve-hour-old cultures of the bacilli within twenty minutes, thus leaving no question as to the diagnosis.

The value of the microscope has been fully demonstrated in these epidemics: 1, in the differentiating between albuminuria so often present in fever and actual structural changes in the kidneys, nephritis; both of which were present in the above cases, the latter in only a few; and in determining the condition of the bladder; 2, in confirming the diagnosis by aiding in demonstrating isolated organisms to be typhoid bacilli and later making it still more positive by proving the presence of the same bacilli in the spleen after death; 3, without it, the most valuable of all the confirmatory tests—Widal's blood-serum reaction—could not be nearly so well made, since the agglutination process must be observed under a high power. The report of this or any case of inverted fever would be of little moment if the diagnosis was based only upon the clinical symptoms, since the latter may be almost entirely wanting, as happened in a case seen in consultation by the author only a few days ago, since this paper was begun, and which was positively demonstrated with those two last named aids to be a case of inverted typhoid fever. Three weeks previous the patient had visited in a district where there was an epidemic of typhoid fever at the time, and the source of infection was contaminated water, of which the patient had also drunk; a second person visiting in the same place was taken with ordinary typhoid

fever shortly afterward. The microscope is one of the most valuable aids the physician has. It enables him to be positive in many cases where there would be much uncertainty without its use; and best of all, the methods and technic in making any and all these examinations are so simple that any physician can easily make them.

Effect on Mental Status.—Of the total number there were two cases of paranoia, two of alcoholic insanity, five of melancholia, four of terminal dementia, six of katatonia, five of organic dementia, five of epileptic insanity, thirteen of dementia precox and one a nurse not insane. Nine of these showed a marked gain in flesh and muscular strength. This change was rapid, and hence nutrition must have been very greatly improved. All the others except the fatal cases regained their former weight and strength but progressed rather slowly.

The changes in the mental status were even less pronounced than the physical, but this is due largely to the fact that the prognosis from the beginning was favorable in only four cases. Two cases of dementia precox became much brighter during the fever, but complete relapse took place immediately after convalescence; one case, delirious during the fever, brightened sufficiently after convalescence to be able to relate the names of his relatives; tell of events that had taken place while he was yet at home; could write a little, but imperfectly; became more interested in his immediate surroundings, kept himself fairly neat, and even took part in and enjoyed in a measure simple sports with the other patients; but in the course of a few weeks he relapsed completely to his former condition. One case of katatonia began to improve very rapidly early in the disease, and at about the time convalescence was fully established, mental recovery was complete, and a second made slight improvement but soon relapsed. Two cases of melancholia improved slightly but soon relapsed, the third continued so well that he was able to return home, where he is now assuming the ordinary duties of life. The only case of acute mania was very much emaciated at the beginning of the fever; there was still great mental exaltation and motor restlessness, a rush of ideas and incoherence, all of which symptoms had continued for a period of three weeks, and because of this he was wholly unprepared to battle with the fever. Within five days he became oriented and being a very intelligent and well-educated man, it was thought best to acquaint him with his physical ailment which had come in as a serious complication. He was told the nature of the disease, that it would be absolutely necessary for him to control himself and remain perfectly quiet in bed or his chance for recovery would be very poor. He seemed to grasp the situation at once, and said, "Doctor, I'll do it." He recovered from the fever, nutrition improved, the gain in weight and muscular strength was remarkable, the recovery from the mental disturbance was complete, and in four months he was taken back into the employ of the government, in the post-office, where he now is.

The conclusions to be drawn are as follows:

1. Cases of inverted typhoid fever are comparatively quite rare, and the subject is deserving of thorough investigation as often and wherever an epidemic occurs, with the object in view of determining the relative frequency of the disease; and in doing this all the methods for confirming the diagnosis should be rigidly applied in each suspected case. In these two epidemics it occurred but once in forty-three cases.

2. Of the patients who recovered 25 per cent. showed marked improvement in nutrition and muscular strength while the remaining 75 per cent. only reached their for-

mer condition in these respects. Compared with previous observations it would seem that insane patients with typhoid fever do not show such a degree of improved nutrition after recovery as do those without the mental complications. The patients who improved mentally showed a corresponding favorable change in nutrition, and those whose mental status returned to normal made the most striking changes in this direction. This may not be true, except for these two epidemics, but in them is beautifully illustrated the profound influence that the mind exercises over the processes of nutrition and assimilation.

3. Of this number 16.6 per cent., all dementias, seemed brighter mentally but relapsed as soon as convalescence was completed, except one case which continued on some little time longer; 2.77 per cent., all melancholias, made partial recovery and one is just fairly able to resume the ordinary duties of life; 5.55 per cent., one a case of katonia and one of acute mania, regained completely their former mental status. The behavior of the cases of dementia would lead one to think the fever had some slight influence upon the mental condition, but it is of no value, since the relapse occurred so soon. Such cases are always beyond the possibility of recovery. The prognosis in melancholia is favorable for some improvement, and it is only fair in this one case to assume that the fever played no important rôle in the partial recovery, since the change was no more than was predicted previous to the fever. The prognosis for recovery in acute mania is generally favorable; and in this case it was regarded as specially hopeful some time before the attack of typhoid. The recovery was rapid and complete and took place at about that period in the course of the mental disturbance at which a change might be expected had he not had the fever, hence one would not be justified in giving to the latter any prominence as a curative factor in connection with the insanity.

TYPHOID FEVER.

A QUARTER OF A CENTURY'S EXPERIENCE THEREWITH,
WITH SPECIAL REFERENCE TO SOME
UNSOLVED PROBLEMS.*

BY JAMES L. TAYLOR, M.D.
WHEELERSBURG, OHIO.

The territory in which I have been located continuously for a quarter of a century is in the Ohio River valley—a region of low hills and valleys, with excellent natural drainage and exceptional freedom from swamps and sloughs, with a permeable soil, an abundant water-supply, furnished mainly by wells and springs, and occupied by a farming population of more than ordinary thrift, intelligence and sobriety. During nearly all of this period I have had more or less cases of typhoid fever to treat, and thus have had opportunities to observe the disease under circumstances quite different from those presented in hospital practice, or surrounding the busy practitioner in large cities.

Speaking generally, I may say that the type of the disease which has prevailed here has been mild, with a tendency to assume endemic conditions. The whole region was formerly intensely malarial, but in conformity with what has been observed in so many other parts of the world, malarial fevers have well-nigh disappeared, and the various forms of typhoid have succeeded. For many years now, I have hardly seen a

case of intermittent fever—ague being one of the rarest diseases that I encounter. Still the germ is not extinct, because only this spring, after the thaw following the unprecedentedly cold weather of -33° in February, I had a few cases of old-fashioned shaking ague of the quotidian type—a fresh reminder of a form of sickness that few were fortunate enough to escape in my boyhood. Now, why has ague disappeared in a region which once seemed to be its congenial home? Men continue to clear land, to turn over the virgin soil—to a less extent than formerly, it is true—but the conditions of heat, moisture, decaying vegetation, and all the alleged circumstances favoring ague still exist. And the plasmodium is still here. But, instead of intermittents we have typhoid—a disease of a very different nature—domiciled now as an endemic. Has Eberth's bacillus run out, so to speak, the plasmodium of malaria? Or by virtue of what bacteriologic law does the one microdeme become diffused, abide and prevail, to the exclusion of another microdeme already in possession of the field, more widely diffused and seemingly more active in its development than the former?

The summer of 1875 in the Ohio valley was an unusually wet season, and was followed, on August 5, by an overflow which destroyed all vegetation on the lowlands. For many days after the flood subsided, the stench from the fields of corn and other vegetation rotting in the August sun was almost intolerable. Added to this was the saturated condition of the surface soil, and every low place filled with standing water evaporating during dog-days in a humid air. Very naturally there was a general apprehension, both among the profession and the laity, of serious sickness to follow such an ideal condition for the generation of a pestilence. Quinin sprang into sudden local demand—to say nothing of whiskey as an assisting antidote. But, strange to say, the following autumn—although somewhat dry—was the most salubrious I have ever known in my practice. I had almost no cases of any kind of fever to treat before cold weather. How many theories concerning the genesis of fevers such experiences completely overthrow! Here the plasmodium of malaria, in one of its aforesaid favorite haunts, with the conditions believed for centuries to be favorable to its activity, reproduced, yet it seems to have lost the energy necessary to its continued propagation, or some physical cause external to the human organism forbids its further multiplication and growth. In our zeal to hunt out, identify and isolate the specific microdeme of each infectious disease, are we not in danger of losing sight of the far greater problem as to what kind of energy it is that determines whether the specific germ shall abide or disappear, remain malignant or grow benign?

In my territory, as I have said, typhoid fever since 1872 has been endemic, and its type in general rather mild, my mortality list rarely attaining to 5 per cent. But it was not always so. While malaria held the field, the incursions of typhoid were epidemic in character and most violent in form. Local tradition has preserved the memory of the first visitation, which occurred in 1823, and which was for many years afterward referred to as the "sickly season." Whole families were then stricken down at the same time, and the population being yet sparse, there were in some cases not enough well ones to minister to the sick, and the records of the neighboring church-yards still attest the unusual mortality of that epidemic. Doctors were then scarce, and medical attention that year difficult to obtain. But, strange to

* Presented to the Section on Practice of Medicine, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

say, the impression lingers yet in that territory, that an unusual fatality everywhere marked the doctor's pathway; which means that the aforesaid treatment of fevers was unsuited and damaging to the type of fever in that epidemic. It was the identical complaint set up in Europe years before, according to Dr. Rutty, who observed regarding the fever epidemics of his day, that "the mortality was great among those who were best attended to, and that the poor—those who were left to God's providence and got nothing but cold water—recovered." Other epidemics have since appeared, as in 1848, but were less widely diffused and not so malignant. Since 1872, when I began to observe and treat the disease professionally, I have seen nothing resembling an epidemic invasion, judging from descriptions of epidemics elsewhere. Take this from Trousseau: "A boy 12 years of age, cowherd to the mayor of Bièves, whose wife and daughters successively had had typhoid fever, contracted it, and brought it with him to his village, Orgeval, distant three kilometers, and where there had been no case of the kind. He there communicated it to a female relation who waited on him and she gave it to another female relative who came from the other end of the village to assist her. From that time typhoid fever spread in the village. Nor was that all; a young man employed as a servant in the house at Orgeval, took the disease, was sent to his home, a distance of six kilometers, whither he carried the disease, which became epidemic in that place." In the sense in which the word is here used, I have certainly never seen an epidemic of typhoid fever. Frequently the disease has infected several members of the same family after one of their number had brought it in, perhaps from some distant locality. Or it has adhered to one side of the street in my village or at one end of it while developing over a limited area. Or it has gradually embraced nearly all the dwellings in some small neighborhood out in the farming districts, with one or more cases in each, and continued for a season, the next year to appear in a different and widely removed locality. But though scarcely a year has passed without more or less cases to treat, many of them so mild that they would not be diagnosed as typhoid, were they not associated with or followed by graver forms of the disease that were unmistakable. In the same or closely related families—yet nothing resembling a wave of epidemic typhoid contagion has yet come under my observation.

Almost every type described in the literature of disease has at one time or another prevailed here, but, as a rule, each year has been characterized by a particular form. Thus, while throughout one year the bronchial form has prevailed, almost every case partaking more or less of this impress, perhaps the next year it would be the cerebrospinal form, and another year the hemorrhagic form, and so on. According to my notes the year 1881 was marked by a tendency to abdominal hemorrhage. This was a dry, hot season in Southern Ohio, there being almost no rain in my neighborhood from April to November, while the thermometer sometimes registered 107 in the shade. We had a touch of the "hot winds," so well known in the Western states, and a consequent failure of crops very unusual in the Ohio valley. That year I had some twenty cases of typhoid fever, the majority of them being hemorrhagic, and one patient dying from the immediate effects of an enormous intestinal hemorrhage. Why the first appearance of a disease in a country should be especially malignant and destructive, and why, after becoming domiciled, it

should gradually become milder, and take on such diverse forms in different seasons—forms so unlike in its mode of invasion and subsequent course that no untrained observer would imagine that the same germ was the common cause of them all—these are questions upon which science has yet shed no light—not even to the extent of offering a plausible theory, but certainly they present features of the most absorbing interest to every observant mind.

Where the disease has prevailed in the country districts over some limited area. I have studied its rise and development with special reference to the water-supply or surface drainage of that territory, and I have long since become convinced that neither the water-supply of individual families, nor the course of drainage of a locality was adequate to explain why the disease should hover over that particular neighborhood for a season and then disappear. The farm houses, as I have said, are supplied with water from their own springs or wells, and it is inconceivable that these sources—widely separated from each other—should become contaminated from some single focus of infection. Nor has the extension of the disease after its first appearance always been in the direction of the surface drainage. On the contrary, I have seen the first case in a new locality appear at the mouth of a hollow, and extend perhaps in an irregular march toward its head, and over the divide, in the most capricious manner possible, omitting some families and visiting others at one side of the direct path, in a way wholly independent of any connection with the surface drainage, or any recognizable focus of infection. My contention is that the disease in its endemic form is propagated, extended and continued according to obscure and indirect methods wholly unlike those employed in its more contagious, aggressive, irruptive character. This aspect of the disease is entirely different from malaria, which clings with tenacity year after year to certain localities. It rather resembles cerebrospinal meningitis in selecting spots apart from each other for its invasion, and then disappearing for a time after prevailing for variable periods.

One great difficulty in tracing the origin of any local development of the disease lies in the fact that a very mild case may be the precursor of other cases of great severity. Frequently my severest cases have come home from a temporary residence in a neighboring city—especially the Ohio River cities, where typhoid is likewise endemic, whether from the use of water from the river, the great sewerage channel of scores of towns and cities in six states, or from some other cause. I know not. But certain it is that the disease is more prevalent in these cities than in the country, and assumes there a form of greater severity. Such cases often come home to the country, and are apt to be troublesome to manage. When properly attended, however, they seldom the starting point of a new infection. Again and again I have seen malignant and fatal cases go through the disease after being brought in, without a single member of the family or other families contracting it. It is the mild cases, where the diagnosis is uncertain, and precautions do not seem to be called for, that are most likely to cause infections, and when once propagated are most difficult to trace to their origin. Now, this explains sufficiently the diffusion of the disease throughout the family after its first introduction. But how shall we explain its gradual extension, sometimes even its almost simultaneous appearance, over a limited area and its restriction, perhaps for that season, to the inhabitants of a single neighborhood?

There are other circumstances connected with the endemic prevalence of typhoid in this region worthy of mention, such as the singular absence of some diseases that are commonly met with almost everywhere. One of these is erysipelas. I do not remember to have met more than three cases of idiopathic erysipelas during my term of practice. Another affection equally rare is puerperal septicemia. Very little of this has appeared in my territory, and I look for twin births, or placenta previa, or postpartum hemorrhage, or hydrocephalic crania, more than I do for puerperal septic infection. Tubercular disease also has greatly diminished in frequency of late years in comparison with its former prevalence. Excluding cases that have contracted the disease elsewhere, tuberculosis has come to be a comparatively rare disease in my territory. Whether all these circumstances are merely coincidences without any etiologic significance or dependence on physical conditions, I am unable to say.

Although typhoid has ceased to exhibit an epidemic tendency here, yet we are not immune to other epidemics by any means. The influenza visitation of 1889 was as general here, as severe, and as fatal, as it was anywhere. And it has shown a disposition to cling to this region, appearing and reappearing with considerable frequency. Typhoid fever for the past few years is much less frequent than it was before, and what is most singular—the type of the disease has undergone a very extraordinary change. I first began to notice this about five or six years ago. Patients would come to me complaining of indefinite ailments—especially loss of appetite, slight headache, chilliness, constipation, coated tongue, and great prostration. I began by labeling it “typhoid ambulans,” usually prescribing some placebo, and assuring them that in a few weeks they would likely be well. But much to my surprise they did not get well, as such cases had been in the habit of doing for so many years past. They called for more treatment, and grew weaker and worse. As I began to study these cases and compare them, I found that they had almost uniformly a slow pulse—sometimes as low as forty—and a sub-normal temperature, ranging from 96 to 98. I left thermometers with the families with instructions to take repeated observations. But at no time during twenty-four hours did it register any fever. These cases went on for months and months, and no sort of treatment availed anything. Some of them were absolutely without pain of any kind, while others complained only of ill-defined aching of the muscles, with cold sensations and numbness. The tendency to sweat, sometimes only over portions of the body, was marked in some cases, even the taking of food being attended with profuse perspiration, though this was not a constant symptom. The most constant phenomenon was the lack of definite symptoms except anorexia and great prostration. I repeatedly interrogated every organ of the body to detect a cause for this condition, with negative results. I plied them with stimulants and tonics to no purpose. I exhausted every resource in the therapeutic calendar without effect. Even generous, well-selected diet often made them feel worse. All the vital forces persisted in remaining below par. Sometimes the patient would be up and down, but oftener in bed. One patient was able to be about the room for two months, then was in bed three months, and after that was five months in convalescing. Emaciation took place slowly—very slowly—but never to the extreme degree of a typical case of fever.

I quickly learned that it was unwise to call these strange seizures by the name of typhoid fever—first,

because they hadn't any fever, and second, because no one, myself included, had ever seen walking typhoid, or any other form of typhoid, act in that way. So I labeled it “nervous prostration.” The patient and family were more easily managed under that caption. I can conceive of no more difficult position for a physician to occupy than to have such indefinite ailments to treat, where there seems to be so little the matter that neither the patient nor his friends can understand why he doesn't get well. As time goes by, the impression is apt to grow that the doctor doesn't understand the case. At first the physician may worry lest the patient should call for a change of doctors. But later on, this feeling subsides and is replaced by the fear that after all, perhaps the patient will not want to change doctors.

I have often racked my brains to conjure up some treatment that would induce a reaction, maybe some fever—a blessed fever—to bring on a crisis of some kind to terminate the suspense. And I have sometimes wondered while treating these interminable cases, notwithstanding our belief in and use of cold packs and antipyretics for the elimination or reduction of fever, whether after all, the dreaded fever, according to the old contention, might not be a great and valuable factor in the unseen armamentarium of the *vis medicatrix naturae*.

It may seem incredible, but my books show that in 1893 I treated one of these cases—a young man at some distance in the country and at no time critically sick—for a period of eleven months. Then he decided to be removed to the city, where he had relatives, in order to be under the more immediate care of a physician. For a time he tried one doctor, and afterward a second one, who told him finally to leave the city and go back to the country where he would likely get well more quickly. It may be of interest to state that he finally did get well, and is now strong and robust again, notwithstanding that his father thought for a long time that the boy looked like “death upon wires.” I have two similar cases in hand at this time, robust men in middle age, who gradually sickened last October, and without having at any time been bedfast, are yet unable to resume their usual vocations.

Now how do I know that this strange form of sickness—never observed here prior to the late epidemic of influenza—is due to Eberth's bacillus? Of course, I do not absolutely know it to be typhoid in character, because I have seen no deaths from it and no post-mortems. I have not punctured the spleen in search of the microdeme. I have submitted blood specimens to Widal's test, but with negative results. Indeed, who would expect the characteristic reaction in cases without antecedent fever, when some undoubted cases with fever fail to respond to it? So that the failure of Widal's test in these cases I regard as inconclusive. But I am inclined to consider it as essentially typhoid, because I fail to see how it can be influenza, since in most cases, there is no history of an initial attack of that disease. Its mode of invasion, too, is so like ambulatory typhoid that at the outset no one would likely give heed to any points of distinction. Besides, these cases have repeatedly developed in dwellings where, at no long time previously, there had been typical typhoid fever. Certain of these cases also have developed in their progress a train of nervous symptoms identical with typhoid, such as insomnia, distressing dreams, intolerance of light and every kind of noise, forgetfulness of much that transpired through the sickness—in one patient insanity requiring temporary restraint in an

asylum—and other nervous symptoms commonly found in the typhoid category. And, finally, some cases have exhibited abdominal tenderness of a persistent character, one case at least being attended with profuse intestinal hemorrhage.

Whether this algid, subnormal type of disease is a simple or a multiple typhoid infection, or indeed, a wholly new form of infection, it is not to be doubted that we now have in this region a very marked change of type in existing diseases. Formerly, as we all know, this question of change of type was a great battleground among physicians, the majority insisting strenuously on this fact which they characterized by the phrase "epidemic constitution," while others of high authority declared that "such changes existed only in the imagination of physicians." But here under my own eyes I think I am witnessing a decisive transition. For five or six years now the old familiar forms of typhoid have been diminishing in frequency until they have almost disappeared, and a new form entirely unlike anything seen before for a quarter of a century holds the field. This sequence of phenomena has the appearance of a demonstration, and one must doubt the clear evidence of his senses not to believe that diseases do undergo marked changes of type. Graves, in his "Clinical Lectures," given in 1835, argued in favor of this doctrine with great force and clearness, showing that certain approved methods of combating a given disease under one form, were simply destructive when applied to the same disease prevailing under a different phase of the so-called epidemic constitution. And in proof, he very felicitously cites the example of Dr. Bateman, who had always opposed blood-letting in his practice, but who was obliged, on account of the inflammatory constitution prevailing in 1810, in opposition to his former views, to prescribe venesection in fevers. Graves also asserts that "in Europe the reign of typhus—the word typhoid at that time not being distinctive—appears to have closed with the influenza of 1804, when a new constitution began, at first more remarkable for the disappearance of nervous, we would say typhoid, fevers and other contagious diseases, than for any peculiar character of its own." For a time what he calls the gastric constitution held sway, but the gastric constitution had scarcely established itself when a new character, viz., the inflammatory, appeared upon the stage, and with its appearance venesection, which had previously fallen into disrepute, became once more a favorite remedy.

Possibly history is repeating itself, because following our own epidemic of influenza, the old familiar type of typhoid has well-nigh disappeared, as nervous fevers did, according to Graves, at the beginning of this century. Of course, I speak only for my own locality, but if I am correct in my observations, and we are now in a transition stage intermediate between types, may we not look for new conditions, new "constitutions," that may possibly modify our nosology and call for wide departures from former methods of treatment? I think I have already seen intimations of the advent of new characters on the stage which may possibly be the precursor of changes as unlooked for and unfamiliar as those described by the physicians of antiquity. For instance, last fall I had a run of laryngeal croup in children—without a single grave case of pharyngeal diphtheria—which carried off more children in the space of ten weeks, than I had lost before with that disease in the course of my practice. Some cases were preceded by a distinct scarlatinous eruption—although scarlatina was not epidemic—while others gave no history of an exanthem. In

nearly all these cases I was called too late in the disease for antitoxin to be of any service, although I injected it in several instances. And these cases developed in widely separated localities, so that there could not have been a focus of contagion. To be sure, this unusual run of bad luck might have been due to a chance coincidence. But why, in the space of ten weeks, I should thus lose so many cases from membranous croup, when neither diphtheria, nor scarlatina, nor any other contagious disease was epidemic, seems unaccountably strange.

Whatever that influence may be which the phrase "epidemic constitution" has been used to describe, to my mind it is a species of morbid energy as powerful and controlling as it is mysterious and ill understood. While the specific germ may determine the kind of disease which its invasion shall produce, the "constitution" stamps that disease with a potency to become mild or severe, sporadic, endemic, epidemic or pandemic, and imposes laws for varying methods of treatment, which even the highest professional skill may not at first distinctly recognize and apply. But if typhoid fever in this country shall follow a course at all similar to its developments elsewhere in the past, under the varying so-called constitutions which from time to time have appeared, I very much doubt whether the semi-expectant plan of treatment which so many of us have successfully employed for nearly a life-time, will then fulfil the requirements of changed conditions and indications.

TYPHOID FEVER.

THERAPEUTIC PRINCIPLES ESTABLISHED IN ITS TREATMENT.*

BY L. F. ROUSCH, M.D.

NEW HAVEN, W. VA.

While the fatality from typhoid is not so great as it was at all times previous to 1870 or 1875, and a better understanding and treatment of the disease is gradually being brought about, still there is a large percentage of deaths, and no uniformity in the management and medical treatment of the same, and as a consequence great disparity of results follows.

When I was a student of medicine at the college, and for a long time following, there was no treatment advocated and none practiced which had any, or at least very little, specific influence to modify its progress or abridge its duration.

Furthermore, I am satisfied that the majority of physicians at the present time, including among the majority men high in the councils of the profession, who do not believe for an instant in abridgment, much less its abortion by medical instrumentality.

Quite a large number of the profession who have used the Brand method of treatment believe and know that the disease is modified, its duration lessened, and the percentage of death-rate made very low—they think lower than by any other method of treatment. Against this way of treating I have not a word to say, but for a long time I was at sea as to how this curative influence was brought about, but after the investigations of Robin, in which he proved that a much greater quantity of waste matter existed in the blood in fevers than in health, and that the quantity was proportional to its severity, and that through the influence of cold baths a greater quantity of oxygen was inhaled, a better oxygenation took place, at the same time the urea was in-

*Presented to the Section on Practice of Medicine, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

creased to 20 per cent., I could begin to see and know something of its *modus operandi*.

But after the experiments of Roque and Weil established the fact that certain toxins were found in the blood in typhoid-fever patients, and that after or during the bath treatment, the excretion of the kidneys increased five-fold until convalescence occurred, then it was plainly enough seen how this method had its influence. I knew it could not be due to the temporary influence of reduction of temperature alone, but must be due to some change produced upon the system by effect upon some organ or organs.

In the hospitals and in the cities where you have all the facilities, as bath-tubs, trained nurses, etc., this treatment certainly should be advocated and practiced, as any treatment should which reduces the mortality to as low as 9 and sometimes to 2 per cent.

But this treatment can not be carried out in private practice in the country. It is simply impossible to use the full bath treatment. Just think of it for a moment—not one bath-tub to every 1000 inhabitants, not one trained nurse in a county in some of the counties of West Virginia, and no money to buy one or hire the other; and sometimes but little to pay the doctor. What are we going to do about it? We will exercise common sense and do the best we can under the circumstances, and of this I am going to treat. Now, as to therapeutic principles, what are they? I will explain as I go along, but I might say in advance in one word they are eliminative and antiseptic—the identical principle established and brought about by the cold-bath treatment, but to some extent through different organs and by a different way.

I know the common opinion that the drug treatment is of no avail; that it has long been tried and found wanting; that a great many agents have been heralded to the world as having specific influence, and they have been tried in the crucible of experience, and not found to answer the expectations raised by their advocates. I have tried many of these myself, and have been sorely disappointed more than once, but an experience founded on the treatment of 143 cases in the last four years has taught me the value of certain remedial measures about which I cannot be mistaken.

First Therapeutic Principle.—The bowels must be acted upon by cathartics. Calomel is the best; two to six grains once a day for the first six or eight days. Give it, diarrhea or no diarrhea; if no diarrhea to prevent it, if diarrhea to cure it. The typhoid stool must be changed to a bilious stool, or at least to a stool with little odor. Always give it at any stage for the diarrhea which has the typhoid stool, but be observant enough to know when you have the action of your medicine, and not confound the free action from the calomel with diarrhea, or the diarrhea with the action of the calomel. You can combine soda bicarb. or salol with the calomel if you desire.

The second agent is salicylate of ammonium or sodium. I prefer the ammonium, as it agrees better with the stomach, and is probably more of a stimulant to the heart, and possibly to the secretions and excretions. Five grains every two hours is the average dose, continued night and day, while fever remains above 102 in the evening; when it falls below, then only during the day. This is continued from first to last. If it disagrees with the stomach, add aromatic spirits of ammonia or spirits or compound tincture of cardamon. Sometimes it disagrees at first, but it will not continue to disagree after the first three or four days.

What is the effect of this combined treatment? In four days, usually, but scarcely ever later than the end of the fifth day, the fever is permanently lessened, the patient comfortable, the pulse full and not fast, no tympanitis, the skin and tongue moist; he sleeps at night, is not sick; you would scarcely know he had fever if you did not use the thermometer. He goes on in the same way to the tenth, twelfth, fourteenth, sixteenth, and sometimes to the twenty-first day, but rarely so long, and is free of fever, is convalescent. This usually comes along about the eleventh to the sixteenth day.

But some other measures are to be mentioned. All the water the patient wants, all the tea or coffee he may wish to have should be given. Sponging the surface once, twice, or even three or four times a day with water is agreeable to the patient. If fever is very high, when at its hyperpyrexia, use cold water. The higher the fever the more sponging is necessary; it always helps the patient. All the foregoing measures are for reduction of fever and elimination and destruction of germs and toxins.

Second Therapeutic Principle.—Do not give food at first, unless the patient desires it. As a rule he needs no food until we have eliminated from his blood, tissues and urine the greater portion of the toxins. It is useless, worse than useless, it is injurious to give food during the first week of the disease; besides all this, it is unphysiologic. The patient is living upon himself. Let him live that way. It is Nature's way, and do not burden him with material, which further disorders the digestive, assimilative and excretory powers. Nothing is gained, but a great deal is lost, and what is the sense in forcing food on a patient who loathes the very sight of it. Nature never speaks in louder tones than she does in this way, but we do not listen. We are governed by an idea, a theory, and it must be carried out.

Time and again I have seen more diarrhea and more fever produced by the improper use of food at an improper time, and my rule is very little food during the first eight or ten days, as I know from observation, he is better off without it, and will convalesce sooner.

Third Principle.—No patient has been treated exactly right who has or continues to have tympanitic bowels. It is the worst symptom, aside from events like hemorrhage or perforation, that the patient can possibly have, even if the tympanitis is only moderate, or especially if very great. Nearly every patient that dies has tympanitis, has had it nearly all if not all the time. Why is it a bad symptom, a dangerous symptom? Because it greatly lowers the powers of life. The pulse gets weak and quick. The patient is restless, can not sleep; delirium and unfavorable symptoms supervene.

I said that no patient was treated properly who has it. How and what are the causes that bring about this condition? Continued typhoid stools, intoxication from same, lessening the powers of the whole nervous system, but especially the great sympathetic system. Gas is generated in the bowels, distension for want of muscular power from the innervation; continuing, they get beyond the power of the muscular coat of the bowels to contract; result peritonitis and death.

This is no fancy sketch; we have all seen it take place dozens of times in all probability. If, unfortunately, we have this condition, what is to be done? Administer small doses of calomel and salol frequently repeated, and large doses of strychnin; also equal parts of turpentin and camphor liniment to the bowels. This will likely overcome it, if it has not gone to that stage where

too great distension has taken place, or peritonitis has not supervened.

After the tenth day I usually give strychnin and continue to convalescence and during the same, then dilute hydrochloric acid in place of salicylate of ammonia in three or four days after fever disappears.

Administration of food begins after the sixth, eighth or tenth day; the first choice is always milk—sweet milk, or good fresh buttermilk; fruit juices from first to last. The patient will often relish some kind of fruit juice at the first. It is not a food in one sense, but every one knows its beneficial influence in sickness or health. It does not derange the stomach or bowels; it refreshes, makes the stomach better, and helps the patient in ways that we know nothing about, physiologically. It ought always to be given as a rule with but few exceptions. Do not use a bedpan. Let the patient get up. My patients get up themselves; they know what they are about; they are not too weak. Do not let that bugbear, perforation, scare you out of your wits. It does not often occur; I practiced thirty-two years with two cases only. It helps the patient to get up, gives him an airing, changes his position, and he feels better afterward. I am satisfied that it arouses his vital energies, and is a factor in preventing his getting into that dormant state which I saw so frequently in my early practice.

Now for the results: The thirty-first case died from overeating and eating improper food on the fifth day of convalescence. The patient was a young woman with her first child, 10 months old, and had poor health from the time of its birth; was anemic. Overeating caused indigestion, sick stomach, vomiting, diarrhea, prostration and death, but no return of fever.

The sixty-second case died on the twenty-second day, from hemorrhage. Pneumonia ensued on the fifteenth day. The patient was a young man, 22 years old.

The seventy-third case was a young man who was convalescent on the fifteenth day; got up, went to the cupboard, ate too much, and had a relapse. On the twenty-first day, when he was better again, perforation took place on the evening of that day, which caused his death. In the ninetieth case, the patient had a relapse three weeks after the first attack, with perforation on seventh or eighth day of relapse. He had been treated by another physician, but I treated him after the relapse.

In the one hundred and tenth case I was not called until the eighth day. The patient was unconscious, and death took place three days afterward. I did not have a chance to even commence treatment. It is hardly fair to count this case, but I have done so.

The sixth and last case was a married lady, about 45 years of age. She was the tallest and most slender woman I ever saw. She seemed overcome by the disease from the start, and did not have any rise of temperature but one day. She was really the weakest mortal I ever treated, and the sequel showed she really had no vital resistance, as she died on the eighth or ninth day with typhoid fever, when she had no fever.

Leaving out the one hundred and tenth case, which it is surely not fair to count, so far as treatment is concerned, this would show 3.5 per cent. of deaths.

Now, while I might have occasion to revise my statistics in the future in a way which would not make so favorable a showing, my opinion is that I could make a more favorable percentage even than I have made.

Of three things I am certain: that the treatment will greatly mitigate the symptoms, will shorten its duration, and greatly lessen the danger of death.

Whoever will may deary the medical treatment of typhoid fever as much as he pleases. I am sure of its influence, and look upon it as an established fact in medical science, and when called to a case, undertake the treatment without any apprehension as to the result. Whenever we can arrive at this state of mind in a disease like typhoid, which carries off its thousands of the youngest and fairest, with the highest hopes and the brightest prospects, then we have accomplished something for ourselves and for humanity of which we may well be proud.

ACETANILID IN TYPHOID FEVER.

WITH A REPORT OF SIX CASES.*

BY EDMUND C. BRUSH, A.M., M.D.
ZANESVILLE, OHIO.

The physician who has been in active practice for twenty-five years and followed the current medical literature has read of many cures for consumption and of methods of aborting typhoid fever. He has also read of many methods of treating typhoid fever and perhaps has tried some of them. I have never believed that typhoid fever could be aborted; I have never seen it aborted. Long ago I settled down to the idea that good nursing, judicious feeding and medicines to meet symptoms, as they arise, is the best plan of treatment. As you all know, some cases defy any and all methods of management and run a vicious and seemingly unmanageable course.

My home is in Zanesville, Ohio, situated in the Muskingum River valley, where typhoid fever is with us always; varying in frequency in different seasons of the year and also in different years. The severity of the type also varies in the same way.

The prime object in any plan of treatment is to control the fever; the severity of a given case and its outcome depending largely on the height of the temperature. It is not proposed to mention even the many plans, past and present for accomplishing this end.

The purpose of this paper is to report six cases in which acetanilid was used to control the fever. These are not the only cases in which I have used that drug, but the six in question were treated in a hospital, where records could be kept. They occurred at the same time, and all originated at Camp Thomas, Chickamauga, Ga., during the latter part of August and early in September, 1898. The patients were soldiers belonging to one organization and of an average age of 22 years. They were sent home from camp with the disease in various stages. Two had rose-colored spots, and all had either diarrhea or a tendency to it, when admitted to the Zanesville Hospital. One had a persistent cough with sore throat. Three suffered at times with epistaxis. All had distended abdomens, but in only two cases was it pronounced. Not one had any hemorrhage from the bowels. The shortest run of the fever was twenty-four, the longest thirty-five, and the average thirty days.

In addition to the six cases reported, I saw ten others among the same body of men. These were taken care of in their respective homes by home people. I think it is generally known that the typhoid fever in the camp mentioned was not of a mild type. One of the ten cases, seen by me outside of the hospital, died in the fourth week of the disease, from persistent and violent hemorrhage from the bowels. All the others recovered.

CASE 1.—Longly, aged 17 years, was probably in the

* Presented to the Section on Practice of Medicine, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

tenth day of disease when received. He had rose-colored spots on the abdomen, and diarrhea when admitted. There was no delirium and but slight distension of the abdomen. He had fever for fourteen days after admission, the average morning temperature being 99.6; average evening temperature, 101. At noon on the day after admission his temperature was 104.

CASE 2.—Tucker, aged 25 years, was probably in the eighteenth day of disease when received. The rose-colored spots disappeared soon after admission. He had epistaxis on the twenty-second and twenty-eighth days of disease and a troublesome cough throughout, with mild diarrhea and slight distension of the abdomen. He had fever for twelve days after admission, average morning temperature being 99.2; average evening temperature, 100.4. The highest temperature was 103, on evening of the twenty-third day. This patient had a decided yellow tinge to his skin and conjunctiva during the whole course of the fever.

CASE 3.—Trump, aged 21 years, was probably in the seventh day of disease when received. The rose-colored spots were well marked, and there was considerable delirium with subsultus tendinum when admitted. He had some diarrhea, and abdomen was distended. On the sixteenth day, after using acetanilid, his temperature at 6 p. m. was 98, and he complained of feeling chilly. He had fever for twenty-four days, average morning temperature being 100; average evening temperature, 101. The highest temperature was 103.2, on the evening of the eighteenth day. This patient had a pronounced yellow tinge to his skin and conjunctiva throughout his sickness.

CASE 4.—Rambo, aged 22 years, received about the ninth day of the disease. He had a troublesome cough and a persistent sore throat; was nervous, delirious and could not sleep; had subsultus tendinum. Some diarrhea and vomiting occurred at times, with well-marked distension of the abdomen; severe epistaxis on the thirteenth, eighteenth, twentieth and twenty-sixth days of disease. In the fourth week he had severe conjunctivitis, and had fever for twenty days after admission, the average morning temperature being 100.8; average evening temperature was 101.8. The highest evening temperature was 103.4, on eleventh day.

This was the only case in which acetanilid was used in doses larger than three grains. For the first three days after his admission this patient's temperature was hard to control, so that the dose was doubled and six grains was given, and on several occasions during those three days, this dose was repeated in one hour because the first dose did not produce any perspiration or reduction of temperature. After the third day of his admission and the twelfth day of the disease, the temperature was controlled with three-grain doses.

CASE 5.—Worham, aged 25 years, was received near the beginning of attack. He had diarrhea all through sickness, but easily controlled, and had some cough and nausea at times. Late in the disease he suffered from insomnia; this was relieved with sulphonal. This man had a relapse due to tobacco brought in surreptitiously. He had fever thirty-five days, including relapse, the average morning temperature being 99.4, average evening temperature 101. The highest evening temperature was 103.4, on the eighteenth day.

CASE 6.—Hahn, aged 21 years, was received on the third day of the disease. He had well-marked abdominal distension, with diarrhea, followed in the second week with constipation; had epistaxis on twelfth, thirteenth and fifteenth days. He had no delirium when awake,

but talked a good deal when sleeping; had fever for twenty-eight days, the average morning temperature being 100.8, average evening temperature 101.8. The highest evening temperature was 103.4 on the twelfth day. This man was raised in our Children's Home, and during his sickness was home-sick. Frequent visits from the matron of the Home helped the nostalgia.

On several occasions he complained of feeling chilly after taking acetanilid. Calomel followed by castor-oil was given for the constipation and had to be used a number of times. Whenever this patient's bowels did not move almost daily he complained of distress. This distress was always relieved by a laxative, and the patient said he felt better after it. As the pulse and respiration in all the cases were in ratio with the temperature, they are omitted.

The foregoing report shows that the cases were typically typhoid and not of a mild character. Three of them were in the first week, two were in the second week and one in the third week of the disease when they came under my charge. All had diarrhea at times, of more or less severity. Milk with lime water formed the chief article of diet, varied with malted milk, beef broth, whites of eggs, ice cream and corn-meal gruel. Ice and water were not restricted. The distended abdomens were freely anointed with turpentine. Antiseptic mouth washes were used. For the diarrhea, a tablet consisting of opium and camphor each $\frac{1}{4}$ -grain, ipecac $\frac{1}{8}$ grain and acetate of lead $\frac{1}{6}$ grain was given. Bismuth or essence of pepsin generally relieved the nausea or vomiting. When a laxative was needed, calomel was administered, followed by castor-oil with a few drops of laudanum.

As many of the comrades of these men suffered from malarial troubles, it was deemed best to use some quinin in these typhoid cases. This was given in two-grain doses three times a day, or with the acetanilid. No whiskey was used. All were given a cold sponge-bath every morning.

Acetanilid was the antipyretic used, and it was efficient and effective. The directions given the nurses were to give three grains of acetanilid every three hours whenever the temperature was over 101, until it fell to that point or below. If, after giving a dose, the temperature showed a decided tendency not to fall, a second dose was given in two hours.

As an illustration, the following is taken from the record of one of the cases reported. At 5 a. m. his temperature was 102.6. Three grains of acetanilid was given at once and this was followed by free perspiration. In two hours the temperature was 100.6 and only one dose had been given. At 2 p. m. the temperature was up to 103; acetanilid was again given and in two hours the temperature was 101, and did not go above that point that evening.

Nearly all patients broke out into a good perspiration after the first dose, and the temperature began to decline; the second dose made the perspiration more free and the decline in the temperature more decided. In every case there was comparative ease in controlling the fever by the method given. There was no effort to reduce the evening temperature below 101. It often went below that point, and the patients would only complain of being chilly. There were no bad effects noted from the use of the drug. It was not given in large doses, it was not given often. Frequently two doses in one day were all that a patient required. When, however, a high temperature persisted, the drug was used until the fever gave way. The nurses showed apti-

tude in administering the acetanilid as soon as the idea of its use was explained; instructions were carried out carefully.

It is to be remembered that these patients were robust young men, that the feeding and care given them was systematic, and they never questioned what was to be done.

I do not present this paper because I think that I have found the treatment for typhoid fever, but because in using acetanilid, I had success, and I believe that, used with judgment, it is a valuable remedy in treating typhoid fever. Please observe that no attempt was made to produce a sudden fall in the temperature by using large doses. I preferred to give small doses and by repeating them produce a gradual decline in the fever. Excepting one case, three grains was the largest dose given.

Furthermore none of the remedies used were given unless their need was clearly indicated. The whole idea was not to medicate, but to pilot the patients through the rapids of the disease and to land them on the shore of recovery.

DISCUSSION ON PAPERS OF DRs. BOODY, TAYLOR, BOUSCUI AND BRESCH.

DR. J. A. WITHERSPOON, Nashville, Tenn.—This subject is one of the most important that we have to deal with. If I understood the gentleman correctly, he stated that malarial fever had about died away, and that most fevers today were of typhoid origin. Now, gentlemen, the differences in the treatment of typhoid fever in recent years has made it evident, in my humble judgment, that the fever mentioned is a different type of fever altogether. I do not know what you have in this part of the country, but I do know that we have in Tennessee, and in that section of the country, a fever that has none of the etiologic or clinical factors of typhoid fever or malaria. We never find, after the tenth day, the typhoid bacillus in the stools, or the malarial plasmodium in blood. We never have the nervous symptoms of typhoid fever. The temperature goes up suddenly without any incubation period. With the fever there is at once great prostration. It is a fever with leaky skin, and not the dry skin of typhoid; with general abdominal tenderness and the scaphoid belly; with rather constipated bowels, with small scybala actions at first, and not the mushy stools of typhoid fever; a fever that runs a rather low and favorable course if not over-treated; a fever without enlargement of the spleen and liver; one where the effect on the nervous centers is very slight; one with markedly fluctuating temperature. It takes one general purge at first, in these cases. I can not imagine any worse treatment than giving an active purgation of 3 to 6 grains of calomel every day for six days to get up a stool as frequently as one wants to, as mentioned. In typhoid fever we have an irritation in the intestinal canal, of the solitary follicles, an inflammation of Peyer's patches with ulceration, and by this active purgation you absolutely add fuel to the fire, running the risk of the formation of a quick slough. In my limited experience with cases of typhoid fever, I believe they do better when the bowels are moved with a gentle enema, rather than by a purge. I do not believe in continuous constipation, but I do believe in enemas, and not in the use of purgatives at all. Another point: there is no treatment of typhoid fever to be applied to every case. We should meet the conditions as they arise. If I should select any one treatment, it would be cold water inside and outside. It is by far the safest and best treatment ever introduced. It is not the treatment of the disease, but the treatment of the patient. One should carefully consider the vitality of the patient and treat according to the symptomatology.

The gentleman who read the last paper stated that the essential element in the treatment was to control the fever. Why, the toxemia is the dangerous thing we have to deal with. The toxins are sent out into the system and overwhelm the nervous centers. The fever plays but a little part. If any man thinks that the Brand method of treatment is for the purpose of lowering the temperature only, he has a wrong conception of it. The temperature plays but a little part. As to acetanilid, I want to place myself on record as saying that I do not think that any of the coal-tar derivatives have a place in the treatment of typhoid fever. Any drug that lowers the resisting powers of the patient and acts on the heart muscle itself, should have no place in the treatment of typhoid fever. There-

fore, I oppose any coal-tar derivatives. The best treatment is rest, water, regulation of the diet, careful nursing, regulation of the bowels, and, if you do not treat too much, the vast majority of the cases will get well.

DR. C. H. MILLS of Illinois—I have been in the habit of treating typhoid fever since 1856 with rest, feeding with toast-water, some milk and six drops of turpentina made into an emulsion and given every three or four hours; this is the treatment of Dr. G. B. Wood of Philadelphia. I advise occasional enemas of either water, or water and turpentina. Occasionally typhoid fever is modified by the presence of malarial fever, and this is usually spoken of as typhomalarial fever. It is a combination of the two diseases. Where this occurs I give quinin, 60 grains in twenty-four hours, which eliminates the malarial part. In ordinary practice I can not use the cold bath. This use of cold water was common when I commenced practice and is common to-day. Turn the water on the wrist and on the head and do not disturb your patient. The great trouble is that we interfere too much with the patient. Give rest in a well-ventilated room.

DR. W. WOOD, of Tennessee—I only wish to add to Dr. Witherspoon's statement. I find that he gives it very nearly right. If I am called to treat a suppurating wound, I use drainage and antiseptics. If I am called to see a case of typhoid fever, which means that the alimentary canal swarms with bacilli, I use drainage and antiseptics.

DR. L. L. MATTHEWS, Joplin, Mo.—I thoroughly agree with the remarks made by Dr. Witherspoon. I have had the same serious doubt, in reference to the type of fever we have in the West that Dr. Witherspoon seems to have. He did not say that we have a special type of fever, which differs from malarial fever or typhoid fever in the West; he did not say that, but I think he believes it. I know that I believed it for many years. Many years ago I read a paper that demonstrated conclusively, to my mind at least, that what most of the physicians were calling typhoid fever was some peculiar, distinct disease different from typhoid fever, it being neither typhoid nor malarial. Soon after I had a number of these cases, in which the last four running much the same course, developed fatal intestinal hemorrhage. While I believe, in the West, we do not have the typical cases of typhoid, as described in text-books, I now believe that all of them are due to the bacillus typhosus. My experience has taught me to pay but little attention to the fever. If I am called to see a case with remarkably high temperature, and yet with a good pulse, I feel secure; but if I am called to see a case with low temperature, with quick, rapid pulse and with indications that the disease is going to be one of prostration, with probably heart failure, I then am apprehensive. Pay attention to the heart, rather than the temperature.

DR. SCOTT of Iowa—It has been my opinion that the origin of the bacteria in infectious diseases in general is from outside the human body. The illustration of the endemic of typhoid fever, as given by the author of the first paper, is evidence of this fact. It is developed from some outside source, as decomposing vegetable or animal matter. The symptoms of typhoid fever are due to toxins which are developed within the cells, which, being absorbed by the body, produce effects on that body, especially the nervous system. The treatment of infectious diseases in general, and typhoid fever in particular, must necessarily be the removal of the toxins from the system. The fever should be treated by removing its causes, i. e., its toxins. This may be eliminated: 1. By the use of water internally, so eliminating it through the kidneys. 2. By the external use of water. 3. By action on the liver, which is the organ, when properly stimulated, that destroys or reduces the amount of toxins and so gets rid of them. 4. By the use of intestinal antiseptics. 5. By nourishment. The administration of nourishment from the beginning of the disease is necessary. In regard to getting up for stool, there should be no hard and fixed rule in this matter. During the first week the patient should be allowed to get up, but not during the last stages, when there is danger of perforation of the bowels. I do not believe that acetanilid has any effect in this fever. It seems to me that the giving of any drug should depend on what other agent is given with it; acetanilid, in small doses, given with caffeine or whisky, may be valuable.

DR. HERRINGTON of Ohio—It will be a long time before we settle how to treat typhoid fever. The fact that we treat typhoid by different means shows that there are a lot of things we do not know. But I hope and trust that every physician will aspire in the treatment of typhoid fever to the extent of trying to abort the fever and not to that of curing it. The question to-day is, can typhoid fever be aborted? I am among those who claim that it can be aborted. Most of you expect to have a low muttering delirium, tympanites, etc. To prevent

this, commence early in the disease, with mild catharsis, using small doses of 1/60, 1/80, or even 1/960 of a grain of calomel, and give it every few minutes, and so keep up a light-colored abnormal discharge from the bowels and try to bring the discharge to the normal. The liver is not acting properly and the discharge comes at first from the lower part of the bowel. This prevents the tympanites and aborts the disease in quite a large majority of the cases in not over fifteen days.

DR. LOUIS BRISNOR, New York City.—This discussion covers the treatment of typhoid fever thoroughly. I would like to make a prophecy that the time is not many years distant when we will have an efficient antitoxin treatment. It has been shown by experimental means that typhoid fever can be prevented by the use of the antitoxin made from the typhoid bacillus. Dr. Welch of Johns Hopkins Hospital, Baltimore, in an address before the New York Academy of Medicine, gave the details of the work of bacteriologists, showing that the time is not more than a few years distant when we shall have an antitoxin treatment for typhoid fever. At present I believe that the best treatment for this disease is the cold water treatment, externally and internally. I have measured the urine in patients who have been subjected to the cold bath, and I have seen it about double itself as soon as the treatment was placed in operation. I believe that the success in the cold bath is largely due to its elimination of the toxins.

DR. J. C. WILSON, Philadelphia.—It is clear to me that such an interchange of opinion as this must be of more value than we at the moment realize. The interchange of opinion and experience of practitioners living at distant points and in different parts of the country is most useful.

I may be permitted to speak of our experience in the German Hospital in Philadelphia, where we have always a great many cases of enteric fever, and during the recent outbreak had as many as sixty-eight cases in the wards at one time. In that institution the cases are treated systematically by cold bathing, according to the method of Brand, but under no circumstances do we use the internal antipyretics. In theory our object is to eliminate the toxins of the disease as rapidly as possible, and we avoid introducing into the blood-current toxic drugs, such as acetanilid, phenacetin, etc., the perturbing effects of which are so marked.

Brand and all those who have carefully carried out his treatment on an extended scale concur in the view that the cold bath treatment is not of itself an antipyretic method. The reduction of temperature is one of a group of effects produced by systematic cold bathing. Another effect to which too little attention is paid is the action of the cold bath on the kidneys as organs of elimination—the toxic coefficient of the urine after the bath having been demonstrated to be increased from five to six times.

Albuminuria is much more common and more marked in cases treated by systematic cold bathing, than by the expectant method, but it is a transient condition, disappearing with the recovery, and in this respect resembles the albuminuria of yellow fever.

I desire to speak of our experience with reference to the posture of the patient in bed during the attack. We have adopted the plan of having the bath-tub stationary in our small fever wards and, due consideration being had to the condition of individual patients, allowing them to walk to the tub with the assistance of the attendants. In this way the patient is aroused from his recumbent posture regularly every third hour, walks to the bath or is carried there by the attendants, and returned to his bed afterward. We have practiced this plan since Jan. 11, 1897, and the results have been entirely satisfactory. In 165 cases of enteric fever treated during the year 1897 the mortality was 6.5 per cent.

DR. JENKINS of Iowa.—More than fifteen years ago I was satisfied that house flies were the greatest carriers of the contagion, and during the late war we had much typhoid fever in the camps, brought on by house flies. The excreta should be destroyed. We could not put soldiers in a more perfect hotbed for the development of the disease than we did in the late war. They were placed in the camps, and when they were taken with typhoid fever they were removed to the hospital; from the hospital they went to the camp, and so carried infection. Good water was to be had, but nearly everybody who was susceptible to typhoid fever was infected in these camps. This is a very important thing, and the medical profession should speak out and see that no such thing should again happen.

DR. GEORGE BOODY, Independence, Iowa.—In connection with the external use of water, it should be given in regularly prescribed quantities internally. During the last epidemic I carefully watched Widal's reaction day after day, in all my cases, in a number of cases treated by neighboring physicians who wished their diagnoses confirmed, and in one case from Jack-

sonville, Fla., a specimen of blood having been sent to me by a nurse in my service who went to the camp there; and as I saw in each case the same reaction, the bacilli clumping and perishing in a short time before my eyes, I could not help thinking that in the not distant future there would be a typhoid serum or antitoxin which would give the same results in the prevention of typhoid fever as we now obtain by the use of antitoxin in diphtheria.

DR. L. F. ROUSCH, New Haven, W. Va.—I wish to speak in reference to what the gentleman from Tennessee said about the cathartic action of medicine. He made it appear that I used calomel in doses large enough to produce an irritative effect. While it is well enough to use large doses, as advised, it is not continued.

PERIOSTEAL CARIES FROM BACTERIAL ORIGIN.*

M. H. FLETCHER, D.D.S., M.D., M.S.
CINCINNATI, OHIO.

Of recent years my attention has been called to a number of cases of neuralgia, the exciting causes of which were obscure, as is frequently the case. Among others was a case of supposed tic douloureux accompanied by the apparent death of the periosteum over a larger portion of the lingual surface of the inferior maxilla of the left side. While the exciting cause in this case may have been central, it apparently was peripheral; it yielded to local treatment, which fact strengthened belief in the peripheral origin. The finding of this lesion was the result of desperate effort, every logical treatment, both systemic and local, having been resorted to, aside from nerve section, and all without relief.

CASE I.—Mrs. X., aged 55 years, suffered with paroxysmal pains resembling tic douloureux; these continued with increasing tendency for three or four years, always including the first molar, which was the only tooth remaining back of the first bicuspid, and it was finally extracted, after having been devitalized and properly treated. For a short period this gave some relief, but the paroxysms returned with increased severity.

There was nothing abnormal in the macroscopic appearance of the bone, flesh, or mucons membrane, and no tenderness nor swelling; no pus could be detected. Thinking that something abnormal might possibly be discovered with a magnifying-glass, one was used, and a tiny slit was found, not to exceed one-sixteenth of an inch in length, and situated on the summit of the alveolar ridge, at the former seat of the offending first molar. My first impression was that I should find here a portion of the root of a tooth, but none could be discovered; the probe, however, after being forced between the lips of the opening, went into a large pocket on the lingual surface of the bone without further resistance; careful probing showed this pocket to reach from the summit of the alveolar ridge to the inferior border of the jaw, and from the first bicuspid back to the angle, including the inferior dental foramen. The surface of the bone, instead of being rough and necrotic, had the feel of being emburnated and without periosteum; of course, the exact conditions of such cases can only be verified by post-mortem examination, and as yet no opportunity has offered for such investigation.

It is held by others that the periosteum in this case is probably still present, and either divided, or entirely adherent to the supervening soft tissues, and I believe that all known laws of pathology would support this theory. There are some facts, however, which go to support the hypothesis that the periosteum is dead, in this and all similar cases.

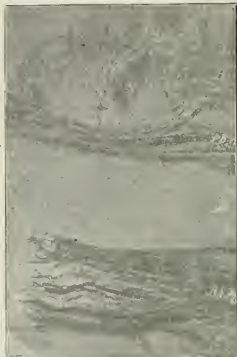
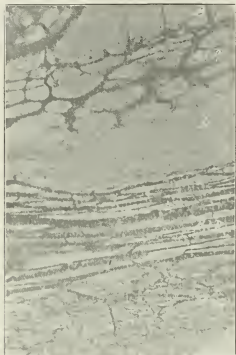
*Presented to the Section on Stomatology, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

In studying the subject, with the conditions in mind as recited in the above case, many old cases can be recalled, and many new ones have been presented which are interesting, as bearing on the pathology of the subject.

Two or three will be described as typical, and I believe will show sufficient reason for advancing the hypothesis of necrotic, or carious periosteum and periodental membrane. The writer holds that the periosteum and periodental membrane are identical in every thing excepting thickness.

pain, the paroxysms becoming more frequent and severe as time passed; the greatest intensity and most frequent seat of the pain was in the lower molars of the left side.

On examination little or no calcareous deposit was found, excepting on the backs of the lower centrals, but the pain never seemed to locate itself in this place. About the molars and bicuspsids, more especially around the molars on the left side, there was very apparent difficulty in the form of necrosed bone; the septa, especially



No. 1.—Section of cat's jaw. Tissues in situ. Blood-vessels injected. B. i. Pl., arterioles in periosteum; D, dentine; B. i. Pl., Blood-vessels in pulp; C. i. P., capillaries in pulp.

No. 3.—Section of cat's jaw. Tissues in situ. Blood-vessels injected. B, bone; P. D. M., periodental membrane; D, dentine; B. i. Pl., Blood-vessels in pulp canal, showing capillaries on the surface.



No. 2.—Section of cat's jaw. Tissues in situ. Blood-vessels injected. B. i. Pl., blood-vessels in pulp; D, dentine; P. C., pericementum; P., periosteum; B. i. P., Blood-vessels in periosteum; B, bone.

No. 4.—Section of cat's jaw. Tissues in situ. Blood-vessels injected. Flat surface of periosteum, showing arterioles, with a few capillaries. Arterioles are 1-60 of an inch in diameter, while capillaries are 1-3000.

CASE 2.—Miss Y., aged 35 years, after having suffered with neuralgic pains on both sides of the face for some months, presented herself for treatment. The pain was paroxysmal in character, distributed on both sides of the face, being excited by foods, especially sweets, sour and salts, sometimes lasting for hours, there being very few meals passed without more or less

between all the molars, were more or less dead, some more than half way to the apices from the necks of the teeth; about the latter mentioned teeth in some places a smooth broach could be pushed clear to the apices of the roots, without pain or bleeding, showing the periosteum to be absent in much of the socket, but on cutting the septa away a sensitive and bleeding condition was reached about half way from the neck to the apex. The

lingual and labial portions of the bone did not present so extended a lesion, but death of the periosteum, however, seemed to progress more rapidly, and cover a much greater extent of surface than the dead bone.

In none of these localities, where there was little or no tartar, was there much apparent inflammation in the soft tissues, and no tenderness in bone or flesh, until live tissue was reached below the necrosis. Where the calcareous deposit was greatest—on the backs of the lower centrals—there was some redness and possibly some pus with the bleeding, but no yellow or watery pus as in typical cases of pyorrhea.

Another case where a single tooth was the cause of much trouble will suffice.

CASE 3.—Mr. Z., aged 50 years, indicated constant pain, varying in intensity, sometimes in the angle of the jaw and ear, but often in the lower first molar on the left side, or its vicinity—the only molar remaining on that side below. Half the crown of this tooth had been worn away, and a protection of gold had been built on, and a large cavity in the anterior approximal surface had also been filled with gold. This gold work was going to pieces and had to be replaced; it was found that decay had proceeded under the approximal filling so that the pulp had to be capped, after this the pain increased in intensity and frequency of paroxysms. The next step was to remove the pulp, and obliterate the pulp cavity and root canals; this gave only slight improvement, so search was made for bone and periosteal trouble. It was discovered that a probe could be passed beneath the soft tissues on top of the ridge, for fully half an inch behind the first molar, the same condition of bone surface being present here that was found in Case 1; further search also showed the septum to be largely dead between the molar and bicuspid.

Numerous cases could be reported to fill in all the varieties of this trouble, between the two extremes, both in extent of lesion and pain, and this not only from my own records, but from those of some of my confrères, notably, Drs. Heise, Callahan and Le Ferré, who have become interested in this particular lesion as distinct from pyorrhea alveolaris and other lesions of bone.

The principles of treatment have been the same in all this class of cases, viz., removal of dead bone, if such could be discovered, and the sterilization of the pockets with escharotics. The remedies usually employed have been alcohol as a menstruum for tincture of iodine, the strength of the latter being used according to locality and symptoms, from almost full strength to a 5 per cent. solution, to which was added 2 or 3 per cent. of oil of cinnamon.

In all cases recovery has been slow, varying from a few weeks to a year in duration.

In going back over these cases as to the extent of lesion, we have, first, cases in which the septa between the teeth become denuded of periosteum, then follows death of the septum; the former lesion at times invading the alveolar process on the lingual or buccal surface of the bone. In this condition there is no difficulty in deciding as to dead bone and periosteum, although the soft tissues, aside from the septa of gum, still remain in shape and show little signs of inflammation.

Now as the trouble creeps down on the outside or inside of the jaw—as in Case 1 fully described—where the bone is much thicker and the collateral circulation much more extensive, the surface of the bone feels to the touch of an instrument as though it were eburnated and not dead, and if the sense of touch can be relied upon, the periosteum is absent, as far as the surface of the bone

is involved; it may be adherent to the supervening soft tissues, but the writer is of the opinion that it has been destroyed. If progressive lesion of the periosteum on the outer or inner surfaces of the alveolar process is accompanied with confinement of pus, as it often is, we then have what is recognized as gingival abscess, and if the lesion about the roots and periodental membrane is accompanied with a perceptible flow of pus, it would be termed pyorrhea alveolaris, but both these conditions are to be distinguished from the one under discussion; nevertheless, this lesion may result in a collection of pus, and if this occur, a name is given it according to its locality, such as felon (onychia), empyema of the maxillary sinus, etc. Another phase of this lesion, in the writer's opinion, is, that this periodental caries, or mycotic destruction, precedes the so-called uric-acid or serumal deposits about the roots of teeth, which deposits are secondary to a lesion, and not primary to it.

There would seem to be no impossibility in the position that the periosteum may be destroyed, and the bone remain alive, as in Case 1, since the collateral circulation could certainly supply the necessities of life for an indefinite period to a bone so large as the maxilla; then, too, the progress of the disease is so slow that the surrounding tissues have ample time to adjust themselves to the new conditions, and we all know that Nature is ever ready to adapt herself to change, when compelled to in order to preserve the life of the organism. As to the periosteum being lifted off the bone, and remaining adherent to the supervening soft tissues, this can only be decided by post-mortem examination. I believe it will be admitted that all lesions of the periosteum are attended with pain of a neuralgic character. In cases of confined pus within or upon the surface of bone, the pain is often almost beyond endurance.

In osteomyelitis, previous to the death of the parts, Senn says: "Pain may be absent at the seat of the necrosis, and referred to some other part or locality." This is true in the cases observed, for the sensation was largely referred to some other place or locality, rather than the seat of the lesion, many times the patient not being able to locate it.

Etiology.—As to etiology, Senn further remarks, under "Necrosis": "The same bacteria which produce inflammation frequently, if present in sufficient quantities also cause cell necrosis," and he quotes his authorities for such belief. The above statement and the supporting authorities, in company with the knowledge of the methods and destructive attacks of bacteria on dentine, could almost convince one that once a suitable culture of bacteria or cocci had been started in the horny-like fibers of periosteum, they could produce continuous destruction of this membrane, much as they do that of dentine, and this opinion is held for the following reason: The study of the periosteum in my own laboratory shows it to be a very compact membrane of connective-tissue fibers, and histologically much more the nature of the hard tissues than of the soft, hence the application of the word "caries"; in one of its layers it is found carrying arterioles in great numbers, but having very few, if any capillaries anywhere in its substance, and no blood-vessels at all in one layer, although the supervening soft tissues are plentifully supplied with them. (See illustrations.)

If this be true, then it seems rational to hold that this membrane during life can, and does, form a good and sufficient pabulum for the growth and development of bacteria, and this to its own destruction, the neighboring capillaries not being in a position to combat the inroads

of the enemy much better than they would in caries of dentine. In the capillaries lies the power of resistance to inroads of an enemy, as well as that of recuperation, it being known that migration of leucocytes, and diapedesis takes place almost exclusively in the capillaries, protection and repair being amongst their most important offices, hence in tissues where they are absent or few, bacteria might be expected to thrive, and the writer is of the opinion that they do, and that the lesion in question is resultant upon the conspicuous absence of capillaries in the periosteum, and they seem especially few in the periodental membrane, as the accompanying illustrations show, which fact may explain many of the phases of the disease of this membrane and the alveolar process.

The exceedingly slow recovery of these cases under germicidal and stimulating treatment would also tend to support the hypothesis of the death of the periosteum by bacteria, and if the death is caused in this way, then the process might be called "caries of periosteum." This hypothesis, however, can not even attain to the dignity of a theory until some one of ample time and opportunity takes up the subject and carries it through clinical and laboratory tests sufficient to establish it beyond question. The writer is convinced, however, that one would be highly justified in undertaking such a series of tests, and if such a theory could be established, many cases of so-called rheumatism, obscure neuralgias and headaches could be traced to a progressive lesion or death of the periosteum in the bones involved.

In what seems to be a complete recovery from amputation, or compound fracture, pain is often continuous and severe, and not easily accounted for, and in chronic disease of the accessory air-cavities and the mastoid cells, neuralgic pain is a prominent symptom, and at certain stages is of a character much as has been described in cases herein reported, and the writer believes may come from the lesion described, and should be investigated with that idea in view.

Regarding periosteal caries from bacterial origin in cases of amputation or fracture, where thoroughly aseptic methods have been employed, one might be skeptical, but the infection may be carried through the blood from many distant sources, and if there were no other source, the gums, teeth and alveolar process are in many people the most perfect of incubators and are abundantly supplied with pathogenic microbes, especially that of pus, so that from this source, if from no other, pus microbes and possibly other pathogenic germs could be taken up by the blood, and by locating at the point of least resistance, result in the lesion under discussion, it being known, that under different environment the same microbe may produce different results.

Roswell Park, under "Source of Infection," says: "The oral cavity and pharynx are never free from bacteria. Miller studied over one hundred species that he has found under various circumstances in the human mouth. Some of these are pathogenic, others are apparently absolutely innocent. Many of the forms which grow in saliva will not grow in ordinary media. Miller has also shown that all forms of dental caries are but expressions of bacterial invasion, even of those apparently most solid structures, the teeth; and of late we have been taught more fully that such invasion may extend far beyond the confines of the teeth alone, and may spread to various, even to distant, parts, and produce possible fatal mischief. Abscesses in the brain and extensive septic infections have been clearly traced to invasion along the line of the dental troubles. One of

the most virulent of all the common inhabitants of the mouth is the pneumococcus of Frankel . . . which getting into general circulation through the tonsils or other possible ports of entry about the mouth causes serious septic and inflammatory disturbances in widely distant regions. Aside from dental caries, a widely opened port of entry is often afforded by those ulcerations around the margins of the gums which are produced by accumulation of tartar. Disease in the antrum of Highmore, for instance, and many other local destructions are frequently caused in this way."

Now is it not rational to believe that in lesions of the periosteum, whether traumatic or otherwise, and regardless of what bone of the body it may be on, we could have the progressive destruction of that membrane as above described?

The writer believes we can, for we certainly have in a very large percentage of people a constant source of infection, and in every person the conditions in the minute anatomy to permit of what might be termed "periosteal caries" from bacterial origin.

NOTE.—In the discussion of this paper, the term "caries" has been largely objected to, and those of "ulceration" and "necrobiosis" have been suggested. Ulceration is not appropriate, in the writer's opinion, for it implies death of tissues in which the cells are composed of liquid protoplasm; a condition which does not obtain in the cells of the periosteum; the same is true of necrobiosis or coagulation necrosis, which processes attack the cells with protoplasm and not the connective tissue between the cells; the periosteum, being composed of connective tissue, could not come under any of these heads.

Klebs found that "karyolysis is due to the action of chemical products of bacilli," hence mycotic necrosis, or karyolysis of periosteum seems next appropriate to caries.

Miller, in treating of "dental caries," says: "Dentine may be defined as a dense glue-giving basis substance, etc. . . . The relations of Sharpie's fibers to the progress of decay in the cementum is very significant, etc. . . . They (Sharpie's fibers) thereby facilitate the invasion of bacteria, etc." Now, Sharpie's fibers when decalcified are composed of connective-tissue substance, and when *in situ* are many times continuous with the fibers of the periosteum, being like it in composition.

Now, all the connective-tissue substances of the body are glue-giving, and the substance of the periosteum is composed entirely of these fibers, hence caries, which is always mycotic, seems as appropriate for the bacterial destruction of periosteum as to the other glue-giving tissue of the body. Mycotic periosteal caries might possibly be better than the title used, but caries signifies mycosis, hence does not need qualification.

MEDICINE.

ITS PROGRESS, PROBLEMS, AND PROSPECTS.*

BY J. BRUYERE, M.S., M.D.

SURGEON TO MERCER HOSPITAL.

TRENTON, N.J.

(Continued from p. 529.)

In the future, the various internal organs may prove to be luxuries rather than necessities. Ribs, the sternum, and portions of the chest wall are now resected with impunity. Tumors of the spine, and in fact all tumors, are now far more amenable to treatment than formerly. The advance in plastic surgery has been very great. Senn's method of making intestinal anastomosis has greatly advanced abdominal surgery, and we now remove portions of the intestine that are injured or diseased. In cancer of the rectum, large portions have been resected—in some cases as much as twelve inches—with a mortality of 20 per cent., and permanent cures in one-third of the cases. Dr. Giuseppe Ruggi reports the "successful resection of ten feet and nine inches of the small intestine of a small boy," 8 years of age. In five weeks the child was perfectly well. Dr. Dressman, in thirty

* Read before the Mercer County (N. J.) Medical Society, at its Fiftieth Anniversary, May 23, 1888, and subsequently revised.

or more cases, has resected the intestine by the yard. Suprapubic cystotomy, an operation that was reintroduced in 1875, has greatly facilitated the removal of certain conditions of the bladder. Formerly there was only palliative treatment for enlarged prostate; now the patient can have his choice of prostatotomy, orchidectomy, or resection of the vas deferens. The radical cure of hernia is modern, and we have rarely a death or a recurrence of the trouble. Fifty years ago the removal of goiter was almost surely fatal. Gibson tells us that "favorable terminations are extremely rare," and that the operation "is attended with difficulties which should dismay the most expert and enterprising surgeon." We now operate on goiter, and remove laryngeal growths, with great success. In 1895 Kocher reported 1000 operations on goiter with only 1 per cent. mortality. According to Reverdin, the mortality in 6103 operations has been 2.88 per cent. For interglandular enucleation, and in uncomplicated cases, the mortality has been about zero. Subcutaneous osteotomy was introduced by Langenbuch in 1854. In 1873 Esmarch introduced the rubber bandage, making many operations bloodless—thus adding to the convenience and safety of operations. Orthopedic surgery, operations on nerves, etc., have been largely developed during the last half century. Billroth "made the first resection of the larynx and of the stomach."

America has contributed largely toward the advancement of surgery. She gave to us anesthesia, the successful ligation of the arteria-innominate, the operation for vesicovaginal fistula, ovariotomy, intestinal anastomosis, cholecystotomy, etc. Wells and Morton gave to us anesthesia. Valentine Mott first tied the innominate artery, and was the first to successfully extirpate the clavicle for tumor. Marion Sims discovered the operation for vesicovaginal fistula. McDowell performed the first rational ovariotomy, and Nicholas Senn gave to us intestinal anastomosis. Cholecystotomy was first performed by Bobbs of Indianapolis. John Collins Warren first successfully tapped the pericardium, and Henry J. Bigelow performed the first excision of the hip in this country, and in 1852 invented the operation known as litholopaxy. Nathan R. Smith invented the anterior splint. Many other operations, together with instruments, splints, mechanical devices, and methods of technic have been the result of American genius. We cannot pause to describe these various operations, but will give a brief history of ovariotomy.

The first successful ovariotomy was performed by a sow-gelder of Germany, on his daughter, in 1517, but the first rational and deliberate ovariotomy was performed by McDowell of Kentucky in 1809. This operation, however, was not established till 1858, when Wells took it up. Gibson, whose surgery was published in 1845, does not mention ovariotomy, but "Liston and Mütter's Surgery," which was published in one small volume, in 1846, speaks of the "Removal of Ovarian Tumors," in the following language: "I need not tell you that wounds of the abdomen are dangerous; patients perish from trifling operations where the viscera are at all involved, and yet you are aware that, of late years, the belly has been opened intentionally with the view of ascertaining the existence of tumors, and of taking them out. Some people do not hesitate to make a hole in the abdomen, put in their fingers, and feel what is there, strangely enough exemplifying what Iudibras says: 'As if a man should be dissected to see what part is diseased.'" Liston condemns the operation, and Mütter says that "in a few years it will be confined to the

oblivion it so richly merits." Meigs, in 1862, declares that those who operate should be indicted for murder, as the operation is a crime, and Dieffenbach, one of the boldest of surgeons, in 1843, wrote that ovariotomy was murder, and that every one who performed it should be put into the dock. Now if these cases are not operated upon it would be considered as culpable neglect. Mütter states that from 1809 to 1846 there had been seventy cases of ovariotomy reported, and he gave the particulars of thirty-one cases. "Out of these," he says, "sixteen died; in some of them there was no tumor, and in some it was not removed." In 1847 there had been less than forty ovariotomies performed in America, and the mortality was over 50 per cent. Notwithstanding this high mortality, the operation finally became a popular one, and it is said that some surgeons have performed from one to two thousand operations with a present mortality of about 3 per cent. Tait of Birmingham, and Keith of Edinburgh, in 1886, reported a mortality of only 3 per cent. Lately Dr. R. L. Morris succeeded in transplanting the ovary, in two out of five cases, and pregnancy followed. Even a small piece of an ovary is sufficient for transplantation. Sims and Emmett were the pioneers in American gynecology. The first journal devoted to obstetrics and gynecology appeared in 1868, but the speciality of gynecology was not recognized exclusively by any medical journal until 1869, when the *Journal of the Gynecologic Society of Boston* was published, by the first society of its kind in this country or Europe. The medical schools, at this time, had no department of gynecology—obstetrics covered all this ground. Dr. Atwood, in 1745, became the first obstetrician in America. At this time obstetrics was regarded as unbecoming a gentleman. Owing to the great prejudice against male accoucheurs, and the treatment of female complaints by men, the special diseases of women were comparatively unknown until a recent date. From the days of Hippocrates until quite a recent period they speak of ulcer of the cervix, pyometria and dropsy of the uterus. Emmett first showed that those so-called ulcers were simply lacerations or tears, and devised the operation of trachelorrhaphy for their cure. Pyometria we now recognize as pelvic abscess, and dropsy of the uterus as ovarian cysts. In early Roman times, Soranus and Themison described vaginal hysterectomy, and in 1507 Brengarius described the removal of the inverted uterus. The first operation for the removal of a malignant uterus was performed by Patella in 1812. In 1813 J. C. M. Langenbeck performed a vaginal hysterectomy for the removal of a cancerous uterus, which Senn tells us was "the first deliberate attempt for removal of the uterus through the vagina for cancer." This operation was a success. On April 16, 1850, Paul F. Eve, an American, performed a vaginal hysterectomy. The third deliberate operation was performed in 1882 by Sauter. Ambroise Paré revived the use of the speculum used formerly by Soranus. Récamier gave us the uterine sound and curette, and Lambelle, Boivin and others added greatly to the development of gynecology. Simpson, by his original and vigorous writings, did much to advance the study of uterine displacements and uterine pathology, and Bennett did much to extend our knowledge of inflammation of the uterus. But it remained for America to give to gynecology its greatest impulse. "If all that Sims had done for gynecology were suppressed, we should find that we had retrograded at least a quarter of a century," says T. Gaillard Thomas. Sims' "Clinical Notes on Uterine Surgery," published in 1863, completely revolutionized gynecology, and gave such dignity and importance to the

special diseases of women, that professorships of gynecology, that were formerly few and unworthy the name, now sprung up in every medical school, and assumed a high degree of importance. Sims' silver wire, perforated shot, and especially his speculum, which allowed a thorough inspection of the vagina, made the treatment of vesicovaginal fistula practicable. Owing to the great advance in gynecology it is said that abdominal hysterectomy is now no more dangerous than was ovariectomy five or six years ago.

The advance in surgery and the allied sciences has given us many delicate instruments for diagnostic and other purposes, such as the stethoscope, cystoscope, gastrodiaphanoscope, electric headlight, clinical thermometers, ophthalmoscope, laryngoscope, otoscope, spectroscope, specula, endoscope, proctoscope, aspirator, retractors, hemostatic forceps, transfusion apparatus, sphygmograph, cardiograph, kymograph, blood-counter, hemometer, hematokrit, tambours, centrifuge, and various electric apparatus. The phonendoscope, which has just been invented by Blenchi and Bazzi of France, is said to gather up all vibrations, condense them, and carry them to the ear far better than the stethoscope. The scientific progress in surgery is due more to the development in bacteriology, pathology, embryology and comparative anatomy; to the discovery of anesthesia and antiseptics and to delicate instruments of precision, than to any improvement on old methods in the technic of the operation, or to any increased skill on the part of the modern surgeon. In quickness and manual dexterity the surgeons of the past may have exceeded us. It is said that Mareschal, surgeon to Louis XIV, performed eight lithotomies in half an hour. Instruments of precision have greatly aided diagnosis and facilitated operations. For example, Kelly's urethral speculum and the knee-chest position enable us to see the mucous lining of the bladder to catheterize the ureters, and to pass the long elastic catheter into the pelvis of the kidney itself. The unique and startling discovery of X-rays, in 1895, for example, has done much to increase the diagnostic skill of the surgeon. Facts are now clearly set forth by radiographs that were formerly smothered in surmise. By means of the skiagraphs we detect foreign bodies in the soft parts and recognize the existence of fractures, dislocations, irregularities, deformities, new growths, calcareous infiltration of arteries, calculi in bladder and kidneys, malformations, etc. The skillful and proper use of the Röntgen rays will mark an epoch in the history of medicine. Great has been the advance in surgery. All splints, dressings and surgical appliances have been greatly improved. Cohnheim's experiments, in 1867, greatly increased our knowledge of inflammation, and of the treatment of fractures. Previous to a knowledge of bacteriology, antiseptics, and the true nature and cause of inflammation, compound fractures were regarded as very serious. The mortality was said to be two out of three, now it is scarcely more than two out of every hundred. Inflammation was formerly regarded as essential to the repair or the healing of wounds, and suppuration was looked upon as normal. Now we regard inflammation as independent of the healing process, and suppuration as the result of pyogenic organisms. Wounds are now kept aseptic, and suppuration is almost unknown. Nussbaum says that "antiseptic catgut is without doubt Lister's greatest discovery," as it did so much toward keeping wounds aseptic. Senn expressed the same view, and said that "the aseptic absorbable ligature is one of the greatest achievements in modern surgery."

Owing to the great advance in surgery, surgical diseases are differently classified, and differently treated. Improved classifications and methods; the great number of trained laboratory and clinical workers; and the great number of libraries, laboratories, journals and societies, all indicate future advance, as well as present attainments. This increase in surgical knowledge has added much to the comfort, happiness and length of life of suffering humanity. Many that were helpless cases, in 1848, are now operated on with success. The results of antiseptic surgery have been so wonderful that surgeons are tempted to depend more upon the brilliant and spectacular results of the knife than upon the slower and less impressive methods of nature. It has been said that "the modern surgeon, clad in antiseptics as the Lady in Comis was 'clothed round with ephastis,' defies the rabble rout of microbes, and dares things, which only a short time ago, were looked upon as beyond the wildest dreams of scientific enthusiasm." There is enough that is heroic in modern surgery to please the grim prophet of hero worship. The ambition to discover something new and brilliant often leads to hasty conclusion, and blinds one to scientific thought and patient research. Notwithstanding this, medical science, and especially the science of surgery, is in advance of all others. The surgery of the future will be remedial rather than radical—preventive rather than curative. We will then remove diseased portions of an organ rather than the entire organ. The tendency is toward conservative surgery. A greater knowledge of natural and acquired immunity, of serotherapy, etc., is tending to make surgery remedial and preventive. A conservative, efficient, and conscientious surgeon, who realizes that his first duty is to his patient, is a Christian altruist and a benefactor to the human race. With this very brief and imperfect narration of the progress in surgery, we will pass on to a very brief consideration of dermatology, and conclude with a few words on present problems and future prospects.

Fifty years ago dermatology was in a state of chaos. John Hunter divided skin affections into "those which sulphur could cure, those which mercury could cure, and those which the devil himself could not cure." Willan and Bateman, in 1808 and later, attempted to reduce this chaos to cosmos. This attempt met its greatest fulfillment by the publication of Orasmus Wilson's work, on "Diseases of the Skin," in 1851. But later Hebra's writings completely revolutionized dermatology and formulated a classification based on the pathologic anatomy of the skin. Previous to this time it is said that the doctor in his treatment of skin diseases "aimed at nothing and hit it." Professor James C. White first introduced Hebra's teachings, in 1859, and in 1861 "gave the first course of lectures on diseases of the skin, at Harvard." The first American text-book on dermatology appeared in 1845, written by N. Worcester. Nearly all dermatologic lore at this time was obtained from Paris and Vienna. The first lectures on dermatology were given in some of the medical schools of New York, in 1846. The *American Journal of Syphilography and Dermatology* was founded in 1870, and The American Dermatological Association in 1877. Up to this time America had contributed but little to dermatology; now Duhring, White, Bulkley and others, are recognized as high authorities. The development of microscopy and bacteriology led to a more accurate diagnosis, a better classification, and to an increased knowledge of the nature and cause of skin diseases. The etiology of most of the skin diseases is now accurately known. It is known that many diseases are due to parasites and microbes.

Lupus, leprosy, carbuncle, glanders, syphilis, furuncle, impetigo contagiosa, and most probably syphilis, eczema, psoriasis, alopecia areata, acne, and certain forms of erythema, seborrhea, etc., are of microbic origin. This knowledge has led to the use of the parasitocides and germicides, which, together with the use of serums and organic extracts, promises much for the future of dermatology. It may be long before a complete classification of diseases of the skin is possible, still great advance in this line is being made. We now leave nature more to herself, and we soothe and strengthen rather than irritate and deplete. Pathologic investigation has determined the nature of the various skin excrescences or growths, and the various other branches of medicine are adding greatly to our knowledge of the treatment of skin diseases, so that a continuous advance in dermatology is assured.

In conclusion, we will briefly consider some of the present problems and the future prospects of medicine. As great as has been the progress in medicine during the last fifty years there are still many problems that remain unsolved. Seneca said that "there is always something left to do, and that even after a thousand centuries no one will lack the opportunity to discover more." Those who come after us will find plenty of occasion to wonder at the ignorance of their forefathers, for medicine is still an unfinished science, and an imperfect art. Medical knowledge is at present a segment and not a perfect circle, hence medicine is still full of mysteries, and some medical truths are as yet imperfectly grasped. The attitude of every true, conscientious, scientific student of medicine, is that of a humble seeker after truth, for there are none so wise that truth becomes to them a perfect circle. Unprejudiced and intelligent observation of the phenomena of nature characterizes the medical profession of to-day. This has accomplished much in the past, and has brought us to the dawn of still greater discoveries. There is no science to-day that has made greater strides than that of medicine. The progress of the past is a guarantee that the problems of the future will receive earnest attention, and final solution. But as yet we do not know the cause of many phenomena that daily confront us. There still remain many problems in diagnosis and therapy. The bedside study of cases is still essential, for no specialist in his laboratory, no microscopist, can always give us an accurate diagnosis. There must be still clinical study and observation superadded to all instruments and appliances for diagnosis. Improved methods can never take the place of thought and rational observation. We must rely upon self, as well as upon machines. In so doing we will often find that clinical observation is more reliable than mechanical aids alone. For example, almost every pathogenic germ has been found in the secretions of healthy individuals. The bacillus of diphtheria has been found on the fauces of hundreds of healthy children. The microscope often fails to reveal the tubercle bacillus, when consumption is known to be present. Dr. Hencage Gibbs, one of the foremost bacteriologists, recently denied the "importance of bacteria as a causative factor of disease." He declares that he "has conducted hundreds of autopsies on consumptives without finding a trace of the bacillus of tuberculosis." The microscope, and nearly all tests and appliances are, from a diagnostic standpoint, far from accurate. Ehrlich's diazo reaction in the urine and Vidal's reaction in the blood of typhoid cases are important and quite constant; but not distinctive or pathognomonic, as these reactions are found in a number of other infectious diseases, and are sometimes want-

ing when typhoid is present. These reactions, therefore are of general, not of special significance. The degree of the reaction usually indicates the severity of the disease. The limitations of the microscope, and the fallibility of many instruments and tests, greatly add to the problems in diagnosis, and also in therapeutics, for the application of remedies must be based on skillful diagnosis, rather than upon the nomenclature of disease. We need a more correct diagnosis and a better nomenclature of disease, before we can trace, by cause and effect, the result of remedies and formulate a cure. Symptoms should be classified in a scientific manner so as to aid us in making our inductions. We could then more easily determine the beneficial symptoms from these that are detrimental. In order to do this we must understand the exact nature of disease and must ascertain the various causes that produce disease. This is most difficult, for we now know that disease is not an entity due to a simple or specific cause, but is usually the resultant effect of many causes. We have, therefore, no distinct diseases, hence "no absolute specific character belongs to any disease." The great problem in diagnosis, therefore, is how to ascertain all the casual factors that constitute any given disease, so that we can remove these causes, and prevent their evil effects. The increase in our knowledge of the causes of disease is an index of the real progress that we are making in the science of medicine. We now doctor causes rather than symptoms, for prophylaxis is the very essence of cure.

(To be continued.)

CRIMINAL MORPHOMANIA AND CHRONIC MORPHINISM. DISCUSSION.*

DR. C. H. HUGHES, St. Louis, Mo.—In regard to Dr. Crothers' clinical presentations, I should hardly characterize those as cases of double personality in the sense in which we are accustomed to regard mental phenomena. They are alterations of personality, varying conditions of personality, alternative personal states exhibited in all forms of opium addiction when the morphia is withdrawn. There is always a contrast between the patient with morphia in him and with morphia out; that is, the opium habitué, the patient who has become a true victim of the opium psychosis.

The medicolegal aspect of the subject is interesting. I remember being called on to testify in regard to a patient who had been connected with an asylum in Fulton, Mo., many years ago; the Cowgill will case, in which I had occasion to introduce the altered mental state of the patient. This man made a will which the courts did not sustain. I made a statement then that opium changed the personality of the individual, and that it had a tendency to undermine the moral sense of the individual; that opium patients were not to be trusted when the opium was out of them; that they would resort to any means to get morphia or obtain money in order to satisfy their appetite. Almost any opium habitué who is out of opium and has a brass watch will try to pass it as a gold one to get money to buy morphia. An opium habitué, when the morphia is entirely out of him, suffers as we know in such a way psychically and physically that it must resort to any means, as a dying man catches at a straw or a starving man steals to satisfy his hunger.

There certainly must take place a degenerative change in the psychic neurons after the long influence of opium toxicity. We ought to arrive at some consensus of opinion in this matter in order to testify correctly in courts. But I should not call these Jekyll and Hyde cases that we so often see in opium habitués true cases of double personality. In the latter cases, as seen in asylums, the individual is one day absolutely one thing, and the next quite another, having completely changed

*This discussion accompanied the papers of Drs. T. D. Crothers and A. J. Pressey (see JOURNAL, August 12, pp. 388 and 391), and should have been printed at that time.

his identity, and retaining no vestige of his former self, such conditions as we find in the automatons of the epileptic and epileptoid states.

As to the treatment, it is a good safe rule to endeavor to size up your patient and gauge your dose according to his capacity for reduction. When you have once reduced the dose, endeavor to make no backward steps; if the symptoms of too rapid withdrawal appear, the sore muscles, and the psychic symptoms, and the diarrhea, the best plan is to stop right there and make no further progress until you have built your patient up to that point. The wisest plan is to gauge your doses so as to endeavor not to bring on these symptoms.

DR. BLOCK—We had a young physician, with a good practice, whose faculties seemed to become more keen after the use of morphin, and who was the greatest thief in the town; he would steal bicycles and take them to pieces, and typewriters and change their parts. When he would be accused of the fact, in the most artful and unassuming and innocent way he would explain the matter and convince everyone that he was the wrong person. It was only after the greatest effort that the courts could be convinced of his innocence: that his acts were due to morphia, which caused the hallucination, and that they were not due to his rascality.

DR. DANIEL R. BROWER, Chicago—I thank Dr. Crothers very much for his very interesting presentation of this important subject. The cases are a little different from any that I have ever had under observation, and I can readily conceive why such cases may not be quite frequent. I think that we all recognize the fact that morphia, very much more than alcohol, deranges, disturbs or alters the personality. There is no question about the fact that these morphia people are deceivers ever.

As to the treatment of these cases, while I indorse Dr. Pressey's method in great measure, I want to take exception to one point that he seemed to emphasize, and that is the undesirability of treating these cases in general hospitals. I have been treating them in general hospitals for twenty-five years. All that I desire is a good nurse, and I do not find that they need so much personal attention if this requirement is fulfilled. I have for years been satisfied of the great advantage of the gradual and systematic withdrawal, and at the hospital we have this very simple proceeding: A certain solution is prepared, each teaspoonful of which represents at the beginning what is the ordinary dose of the patient—i. e., the least dose that will suffice to keep his nervous system in fair condition—and then for every teaspoonful of the morphin solution that is taken out the nurse is instructed to put a teaspoonful of water in, and in this way a very gradual withdrawal takes place.

I almost invariably practice putting these patients to bed and giving them daily massage and faradic electricity, and I think the great perturbations that occur in the nervous system when they get down to a certain point are vastly diminished by the prolonged continuous rest and by the use of the massage and the electricity, recognizing, with Dr. Pressey, the great advantage of strychnia and the other remedies which are tonics to the nervous system and circulation.

DR. E. S. PETTYJOHN, Alma, Mich.—I have found that all morphin habitués are very much alike; doctors of divinity are just as prone to tell what is not true as anyone else. I would suggest that at the close of the treatment, when the amount taken is small, we often make a mistake by thinking that we can drop it when it is down to 1/16 or 1/20 gr., but that is the hardest time for the patient during the whole treatment. We would have better success if we continued the small amount for a somewhat longer time.

As to Dr. Brower's plan, I would hardly know when to stop using out of his bottle. It would be a little difficult to tell, unless we have all the time there is—and we do not usually have that much—when to stop. I am in the habit of using hydrotherapeutics, electricity and massage, and am sure that we help the patient a great deal by aiding the elimination. We ought to get down to 1/32 gr. and hold the patient there for some time before finally withdrawing the drug.

DR. HAMLIN of Tennessee—I am a general practitioner, meeting with cases in country communities. We treat these various cases in our country villages and we know our conditions individually. In the cities you know your patient at your office, or hospital, or sanitarium, but you do not know his private life

or family history; you get what they give you for their family history, but you can not say you know the family history of your patients. I wish to emphasize the point made by Dr. Pettyjohn, as I believe that we ought to keep beyond the 1/32 or 1/64 gr., and keep up the hypodermic dose of water. In one case in my experience the reduction was gradual and the patient's health was not affected, but after reducing the dose down to 1/64 gr. I told the nurse to omit the morphia and continue the hypodermic injection, impressing the patient with the fact that the same injection was being given. After the morphia had been omitted for two weeks, the patient was told what had been done, and the same train of symptoms at once resulted that we would have had from a sudden withdrawal of the morphia.

DR. L. B. TUCKERMAN, Cleveland, Ohio—I am also only a general practitioner, and I feel that you neurologists ought not to be quite so hopeless as to what the general practitioner can do, because it is the exception, and not the rule, that those that we have to treat are able to go either to a private asylum or the hospital. Although theoretically, from the specialists' standpoint, all cases are hopeless if treated by the general practitioner, practically I venture to say that two-thirds of the cases that occur must be treated under those *a priori* hopeless conditions. The interest of the general practitioner would be greatly increased if that hopeless feature were not emphasized so much. I remember an opium fiend in a private family, where they followed the plan outlined by the last speaker. They bought the usual amount of opium, and made an extract of thoroughwort, and mixed the opium with that, gradually reducing the proportion of opium in the mixture until they got the patient entirely weaned from the opium and taking the pure extract of boneseet without knowing the difference.

DR. C. H. HUGHES, St. Louis, Mo.—I did not attempt at all to discuss the treatment of the morphin habit. Since the introduction of eocodia I have always preferred its use. The dyonin treatment is, I think, going to be the best substitute treatment. Quinia is one of the best substitutes for the morphia addiction that you can use during its withdrawal.

DR. A. E. STERNE, Indianapolis, Ind.—While I heartily subscribe to the old plan of gradual reduction of morphin. I do not adhere to any set rule or principle, and do not follow a routine treatment. I have had a great many of these cases to treat. I have not heard a word in this discussion as to the why or wherefore of the gradual reduction. You have not explained the cause or origin of these abstinence symptoms in any form. It seems to me that until they are explained we can not form a thoroughly rational theory of these cases.

DR. Pressey spoke of the rapid treatment, and spoke of those subjected to it as being persons of extreme courage. I must disagree with Dr. Pressey. If the case when it comes to me, seems strong enough physically—and if I fear a heart collapse I substitute some other stimulant in the place of morphin—certain cases of morphinism never get one particle of a grain of morphin after they come under treatment. I have yet to see the case where abstinence symptoms arose to any marked extent, even among members of our profession who knew what the so-called abstinence symptoms were. The abstinence symptoms arise, not because we take away the morphia, but because the system is acidulated, and by the use of bicarbonate of soda and vichy water we do not fear these symptoms. I believe that by the chemical method, with lavage of the stomach, with the neutralization of the acid, and by the use of faradic electricity, we get quicker and more permanent results than we do by the slower method, and with a much less waste of time.

DR. T. D. CROTHERS, Hartford, Conn.—My object in presenting these cases, and the new facts which they point out, is to show that the phenomenon of criminality has, in many cases, a distinct physical origin, also that in drug taking, particularly from morphia, criminal impulses and acts occur that are unknown. They are literally forms of insanity not known or understood at present. In the treatment of morphinism, the withdrawal of the drug is of much less importance than the building up and strengthening of the system against the possibility of relapse in the future. The exact methods of withdrawal will vary with the physician, but the results will be the same in all cases. The real treatment will be the degree of vigor that can be cultivated in the patient. These cases are

exhausted and poisoned, and require the most complex variable treatment suitable to the wants of each.

DR. A. J. PRESSEY, Cleveland, Ohio.—I can hardly understand how it would prove that the patient was insane because he became so when you take away the morphin, because any patient would do that. The patient is always so affected by the withdrawal of the drug. In regard to the reduction of the morphin by adding water to the extent of the morphin taken out of the solution, I can not understand how you could tell when the patient was off the morphin, unless a new solution was made.

Dr. Crothers' statement to the effect that he considers the manner in which the morphin is withdrawn the least important of any part of the treatment, I feel sure will not meet with a hearty response by those who have been treated, both by the method I have described and either of the older forms of treatment. Patients have a right to that form of treatment which produces the least possible discomfort consistent with their best interests while being treated for this or any other ailment. We know that patients do suffer terribly while undergoing the sudden withdrawal, the rapid reduction, or the usual slow reduction methods. With the method that I have described, properly carried out, more than 90 per cent. can be cured and feel fully as comfortable while having the morphin withdrawn as while using it *ad lib.* In my opinion the manner of withdrawal is very important.

Therapeutics.

Rhinopharyngitis in Young Children.

A simple procedure for local treatment is recommended by Gaston, viz., the introduction into the nostrils, three or four times a day, of a cotton tampon rolled to a point, covered with borated vaselin, with or without the addition of an astringent, such as the following:

R. Antipyrin	.....	gr. viii xvi
Acidi borici	.....	gr. vi
Vaselin	.....	3v
M. Ft. ungt. Sig. External use.		

If the child greatly objects to the tampons one or two drops of the following mixture should be instilled into each nostril night and morning:

R. Menthol	.....	gr. viii
Olei amygdalæ dulcis	.....	3i
M. Sig. External use.		

If the direct treatment of the pharynx seems indicated it may be swallowed with iodin in glycerin, equal parts. —Doizy.

Vesical Irritation and Prostatic Hemorrhage.

R. Tinct. veratri viridis	.....	3i
Morphine sulphatis	.....	gr. ii
Ext. ergotæ fluidi	.....	3iv
Syrupi zingiberis	.....	3i
Aque, q. s. ad	.....	3iii
M. Sig. Teaspoonful in water every two or three hours.		

For the Relief of Pain and Vesical Spasms.

R. Ext. opii	.....	gr. vi
Ext. hyoscyami	.....	gr. iii
Olei theobromatis, q. s.		

Misce et fiat suppositoria No. vi. Sig. Introduce one into rectum and repeat in two hours if required.

Infantile Colic.

R. Sodii bicarbonatis	.....	gr. ii
Olei ricini	.....	3i
Tinct. opii camphoratae	.....	gtt. ii

M. Sig. One dose, for acute indigestion, in infant six to eighteen months old.

R. Aque menthæ viridis		
Aque camphoræ		
Aque, ʒi.		3iv
M. Sig. Teaspoonful as required for pain and flatulence.		

Acid Urine and Frequent Urination.

R. Lithii citratis	.....	3ii
Tinct. opii camphoratae	.....	3i
Infusi lupulini, q. s. ad	.....	3xvi
M. Sig. Tablespoonful in water after meals.		

For Alkaline Urine.

R. Acidi borici	.....	ʒiiss
Ext. uva ursi fluidi	.....	3iv
Ext. hyoseyami fluidi	.....	3iv
Ext. lupulini fluidi	.....	3iv
Syrupi zingiberis	.....	3i
Aque, q. s. ad	.....	3vi
M. Sig. Two teaspoonfuls in water after meals.		

Simple Catarrhal Conjunctivitis.

R. Acidi borici	.....	gr. xl
Sodii chloridi	.....	gr. vi
Aque camphoræ		
Aque destill., ʒi.		3ii
M. Sig. Apply as lotion to eye every two hours.		

Mammary Inflammation.

R. Unguenti belladonnæ	.....	3i
Unguenti hydrargyri	.....	3iv
Ichthyoli	.....	3iv
Cerati plumbi subacetatis	.....	3i
M. Sig. Apply to breasts freely and employ tight breast binder.		

—Med. News Formulary.

Chlorin Water in Typhoid Fever.

The chlorin-water treatment of typhoid comes from India. The usual dose is a dram every three hours. Wilcox' conclusions, based upon an extended use of the remedy, are:

1. Chlorin can be safely used till complete disinfection of the alimentary canal is obtained.
2. It improves the appetite and digestion, lessens the fever, and cleans the tongue. The only odor to the stools is that of chlorin.
3. It causes increase of strength and lessens the nervous symptoms.
4. It shortens the duration of the disease, and under its influence the patient usually makes a rapid and complete recovery.

—Medical News.

Ptyalism (Idiopathic or Mercurial).

R. Tinct. myrrhæ	.....	3i
Potassii chloratis	.....	3vi
Aque camphoræ, q. s. ad	.....	3xvi
M. Sig. Shake. Use as mouth wash every two or three hours.		
R. Formaldehydi (40 per cent. sol)	.....	3i
Thymoli	.....	gr. x
Tinct. benzoini compositæ	.....	3iii
Alcoholis, q. s. ad	.....	3iii
M. Sig. Teaspoonful in wineglass of water as mouth wash every two or three hours. Also apply with camel's-hair brush to softened and bleeding gums.		

The two following prescriptions are highly recommended by Dr. Geo. F. Butler:

R. Potassii chloratis	.....	gr. xvi
Tinct. ferri chloridi	.....	3iiss
Syrupi	.....	3i
Aque, q. s. ad	.....	3ii
M. Sig. Teaspoonful in water every two hours, for mercurial ptyalism.		
R. Camphoræ	.....	3ii
Tinct. myrrhæ	.....	3i
Balsami Peruviani	.....	3i
Spts. cinnamon.	.....	3iv
Olei menthæ viridis	.....	m. v
Olei carophylli	.....	m. iii
Alcoholis, q. s. ad	.....	3viii
M. Sig. Teaspoonful in a wineglass of water as a mouth wash every two hours. Also apply in full strength to softened and bleeding gums.		

Impotence.

R. Phosphori	.....	gr. 1/4
Ferri arsenitis	.....	gr. i
Strychninæ hydrochloratis	.....	gr. xxiv
Quininæ hydrochloratis	.....	gr. xxiv
M. Fiat pilulæ No. xxiv. Sig. One pill three times a day after meals.		
R. Camphoræ	.....	gr. xxiv
Quininæ hydrochloratis	.....	gr. xxiv
Ext. nucis vomicæ	.....	gr. xii
Tinct. cantharidis	.....	m. xxiv
Oleoresinæ capsici	.....	gr. iv
M. Fiat pilulæ No. xxiv. Sig. One pill after meals.		

Hair Tonic.

R. Pilocarpine hydrochloratis.....	gr. ii
Tinct. cautharidis.....	ʒi
Quinine hydrochloratis.....	gr. xv
Olei sesami.....	ʒiii
Glycerini.....	ʒiv
Spiritus myricæ.....	ʒiv
Aquæ rosæ, q. s. ad.....	ʒviii

M. Sig. Rub into scalp night and morning, in syphilitic subjects, also in loss of hair after prolonged illness.

—*Med. News Form.*

Abdominal Palpitations.

Nitroglycerin should be given in these cases. It may be taken during the attack, but it is better to give it once or twice a day, or, if needful, more often. A small dose will generally be found sufficient to affect the disorder. One one-hundredth of a grain every night is often sufficient. But if, as the palpitations subside, the other symptoms remain, it will be necessary to attend to them. However, it is surprising how the equalization of the circulation affects the other miscellaneous symptoms in many instances.—*W. Wade in Brit. Medical Jour.*

The following old prescriptions are perhaps more valuable than many newer and more elegant combinations:

Anti-Bilious Mixture.

R. Podophyllin (resinoid).....	gr. cxxviii
Cream of tartar, pure.....	ʒxvi
Buchu leaf.....	ʒxvi
Leptandrin (resinoid).....	ʒi
Gentian, ground.....	ʒii
Alcohol.....	Oiii
Water, boiling.....	Ov

Dissolve the cream of tartar in three pints of the water, to which have been added four ounces of powdered borax. Boil for five minutes, allowing the mixture to cool, and then filter. Dissolve the resinoids in a pint of the alcohol, and add to the cream of tartar solution; also add the remaining alcohol, water, and the gentian and buchu, macerate for fourteen days. Express and filter. Dose, a teaspoonful.

Diuretic Mixture.

R. Buchu, long.....	ʒvi
Uva ursi.....	ʒiv
Juniper berries, bruised.....	ʒiii
Acetate of potassium.....	ʒiiss
Alcohol.....	ʒviii
Water.....	ʒviii

Macerate for fourteen days, and filter through paper. Dose, one to two teaspoonfuls three times a day.

Cough Syrup.

R. Syrup of wild cherry.....	ʒiv
Compound syrup of squill.....	ʒii
Tinct. of bloodroot.....	ʒss
Mucilage of acacia.....	ʒi
Syrup of tolu.....	ʒss

Mix. Dose, one teaspoonful every two or three hours.

Laxative Elixir.

R. Fluid ext. dandelion.....	ʒvi
Fluid ext. wild cherry.....	ʒiv
Fluid ext. gentian.....	ʒi
Fluid ext. licorice.....	ʒi
Fluid ext. senna.....	ʒiii
Aromatic elixir.....	ʒxvss

Mix. Dose, one or two teaspoonfuls.

Neutralizing Cordial.

R. Powdered rhubarb.....	ʒii
Carbonate of potassium.....	ʒii
Powdered golden seal.....	ʒi
Powdered cinnamon.....	ʒi
Sugar, white.....	ʒlxiv
Brandy.....	Oviii
Oil of peppermint.....	grt. xx

Macerate for fourteen days, and filter, or make by percolation. Dose, one to two teaspoonfuls.

Intermittent and Remittent Fever.

R. Cinchonæ sulphatis.....	ʒss
Liq. potassii arsenitis.....	ʒiiss
Tinct. ferri chloridi.....	ʒiv
Syrupi zingiberis.....	ʒiiss
Aquæ destil., q. s. ad.....	ʒiv

M. Sig. Dose, a dessertspoonful after meals. (In chronic cases.)

—*Pendleton Tutt.*

Impotence.

R. Ext. cannabis indicae.....	
Ext. nucis vomicæ, aa.....	gr. xv
Ext. exogotæ agnosii.....	ʒi

M. Et. div., in pil. No. xxx. Sig. One pill morning and evening.

—*Da Costa.*

Pruritus Vulvæ.

R. Acidi carbolicæ.....	gr. x
Morphinæ acetatis.....	gr. viii
Acidi hydrocyanici diluti.....	ʒii
Glycerini.....	ʒiv
Aquæ, q. s. ad.....	ʒiv

Fiat lotio. Sig. Apply twice daily.

—*Lombe Athill.*

The Control by Arsenic of the Ill Effects of Thyroid Extract.

In the *Medical News* of July 8, reference is made to an article in the *Rev. de Therap.*, by Mabile, who hopes that he has found in arsenic a means of preventing the ill effects of thyroid extract, which are produced in some patients by this drug. The increased use of the thyroid gland, not only for myxedema, but for obesity, goiter, certain skin diseases, and in general for malnutrition, makes it important that there should be some means of controlling the vertigo, palpitation, dyspnea, anxiety, etc., from which patients who are particularly sensitive suffer. The writer observed that these symptoms disappeared in one of his patients when she was taking Fowler's solution and reappeared when she stopped the arsenic. From 2 to 12 drops of Fowler's solution at a dose was found to be sufficient to prevent any unpleasant symptoms even when taking 12 grains a day. Two other patients took arsenic with thyroid extract, with happy results, and the arsenic did not weaken, apparently, the force of the thyroid extract.

Apomorphin in Strychnin Poisoning.

Dr. H. B. Stanley of Elgin, Ore., says, in the *Medical Summary*: "The best way to administer it is by hypodermic injection. If administered hypodermically, $\frac{1}{4}$ grain should be injected into the cellular tissue of a strong, healthy man; if given by the mouth at least $\frac{1}{2}$ grain should be given and followed by copious draughts of water.

"Even if cramping and convulsions have begun they will cease as soon as the remedy begins to act on the system.

"This remedy, if given hypodermically, will prove a sure antidote if given so as to act any time before the respiratory nervous center becomes paralyzed."

To Prevent Abortion.

R. Tinct. opii deodorati.....	ʒii
Chloralis.....	ʒii
Ext. hyoscyami fluidi.....	ʒi
Syrupi acaciæ.....	ʒiv
Ext. viburni prunifolii, q. s. ad.....	ʒiii

Sig. One or two teaspoonfuls every hour or two until moderate somnolence.

R. Extracti opii.....	gr. iii
Ext. hyoscyami alcoholici.....	gr. iii
Olei theobromatis, q. s.	

M. Et. fiat suppositoria No. vi. Sig. One by bowel as required.

Sulphuric Acid in Basedow's Disease.—Acting upon the suggestion that mineral acids exert a tonic action on the vasomotor nerves, H. Verhulsen administered 10 drops of the sulphuric three times a day to six "Basedovians." One recovered completely in a month; three were very much improved, and only two, both very old cases, failed to benefit by the treatment.—*Semaine Med.*

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

- American Gynecological and Obstetrical Journal (N. Y.), August.**
- 1.—*Uteral Anastomosis. George H. Noble.
 - 2.—*Inversion of Uterus, with Review of the Various Operative Procedures for its Treatment, and a description of the Writer's Operation for Chronic Inversion. B. Bernard Brown.
 - 3.—*Rectal Irrigation in Gynecology. Clarence Roginald Hyde.
 - 4.—Neoplasms Interfering with Pregnancy, with Report of Cases. E. E. Tull.
 - 5.—A Type of Paralysis in the Distribution of the Perineal Nerve Following Labor. Charles J. Aldrich.
 - 6.—*Interstitial Pregnancy, with Report of a Case Operated on Thirteen Months after Conception. Archibald MacLaren.
- American Journal of Obstetrics (N. Y.), August.**
- 7.—*Case of Spondylolisthesis, with Description of the Pelvis. J. Whitridge Williams.
 - 8.—*History of the Early Operations for Fibroid Tumors. Charles P. Noble.
 - 9.—*Operation for Complete Tear of the Peritoneum. Howard A. Kelly.
 - 10.—*Preliminary Report of the Transplantation of the Ovaries. James F. McCone.
 - 11.—Some New Instruments to Facilitate the Operation of Myomectomy. Howard A. Kelly.
 - 12.—Surgical Treatment of Unrotated Occipito-Posterior Positions. Henry D. Fry.
 - 13.—Note on Value of Blood Examination in Gynecology. Walter R. Gries.
 - 14.—A New Handle and Grip for Scissors for Plastic and Other Delicate Work. Howard A. Kelly.
 - 15.—Postpartum Reflections. "Casey."
- Archives of Ophthalmology (N. Y.), July.**
- 16.—*Hyperostosis Cranii, with the Report of Cases leading to Exophthalmus and Blindness. F. W. Ellis.
 - 17.—Contributions to Technic of Advancement for Strabismus. Professor Schwegger.
 - 18.—*Disturbances of Circulation in the Retina from Arteriosclerosis. C. Zimmerman.
 - 19.—Tuberculous Aritis, with Parenchymatous Keratitis. S. Schultze.
 - 20.—*Amaurosis Following the Entrance of a Well After the Use of Dynamite. L. D. Brose.
 - 21.—Case of Poisoning from the Use of Eserin in the Eyes. Clarence R. DuFour.
 - 22.—Refraction in Ancient Times. Vincenzo Fukala.
 - 23.—Operations which Increase the Motility of Artificial Eyes, and Their Partial Replacement by a New Prosthesis of a Peculiar Form. Hugo Wolff.
 - 24.—Conjunctivitis Folliculosa and Trachoma. O. Walter.
 - 25.—Light Sense and Color Sense in Diseases of the Retina, Choroid, and Optic Nerve. Hans Krienes.
 - 26.—*Coloboma of Both Optic Nerves without Coloboma of the Uveal Tract. F. Hoesch.
 - 27.—Progressive Paralysis of the Levator. P. Silex.
- Chicago Medical Recorder, July.**
- 28.—*Science of Medicine and its Relations to the Public. Arthur Dean Bevan.
 - 29.—*An Absorbable Intestinal Coupler. Jacob Frank.
 - 30.—*Eureosis Nocturna in the Female. Gustav Kolischer.
 - 31.—Two Cases of Complete Ossification of Choroid and Lens. Chas. H. Beard.
 - 32.—*Guaicac in Treatment of Malaria, with Presentation of Four Cases. Chas. J. Wholen.
 - 33.—*Medicinal Efficacy of Nosophen and Antiosin in Eye, Ear, Nose and Throat Affections. James A. Lydston.
 - 34.—*Exhibition of Rectal Dressing. J. E. Pennington.
- International Medical Magazine (N. Y.), August.**
- 35.—*Fever and its Treatment. H. A. Hare.
 - 36.—*Immunity and the Use of Normal and Non-Immunized Serums. Joseph McFarland.
 - 37.—Case of Arthritis Deformans of Hip-joint. Chas. Greene Cumston.
 - 38.—Treatment of Eczema. J. F. Schamberg.
 - 39.—*Asepsis and Antiseptics of Minor Operations. Chas. L. Leonard.
 - 40.—*Etiology and Diagnosis of Chronic Stenotic Gastritis (Acid Gastric Catarrh). Boardman Reed.
 - 41.—*Syphilis, Secondary and Tertiary Symptoms. J. D. Thomas.
 - 42.—Cases of Eclampsia, Elephantiasis, Neuritis and Bronchiectasis. L. Smirnow.
- Western Medical Review (Lincoln, Neb.), August 15.**
- 43.—*Certain Legal Relations of Physicians to Patient. F. A. Long.
 - 44.—*Cases of Fracture of the Cranial Vault Exhibiting Some Unusual Features. A. F. Jonas.
 - 45.—*Mother and Child. Robert McConaughy.
 - 46.—*The Voice Crying in the Wilderness. S. D. Tobey.
 - 47.—*Complications Following Surgical Operations. Byron B. Davis.
 - 48.—*Foreign Bodies in the Air-Passages, with Report of a Case. W. D. Shields.
 - 49.—*Puerperal Fever or Midwife Infection, Which? J. Lue Sutherland.
 - 50.—Relations of Obstetrician and Gynecologist. W. O. Henry.
 - 51.—Clinical Value of Blood Examinations. Fletcher M. Gardner.
- Canada Lancet (Toronto), July.**
- 52.—Pelvic Disease in the Female Insane. Its Significance and Our Responsibility. Ernest Hall.
- Medical Examiner (N. Y.), August.**
- 53.—Effect of Selection in Life Insurance. Emory McClintock
- 54.—Ordinary Clinical Examination of Urine. Thos. C. Cross.
 - 55.—*Malarial Tœmia, Complications and Treatment, with Some Remarks on Quinin Intoxication. G. A. McBride.
 - 56.—Differential Diagnosis of Cardiovascular Murmurs. E. K. Root.
 - 57.—*Advisability of Insuring Certain Cases of Valvular Disease of the Heart for a Limited Term. A. McFarlane.
- Merek's Archives (N. Y.), August.**
- 58.—*Medical Treatment of Nervous Diseases. L. Harrison Mettler.
 - 59.—*Rational Treatment of Diarrhea. R. G. Eccles.
 - 60.—*Chloral Hydrate. Harvey J. Chadwick.
 - 61.—*Ichthyol as an Internal Medicine. C. H. Powell.
- Therapeutic Gazette (Phila. and Detroit), August 15.**
- 62.—*Treatment of Summer Diarrhea in Infants. A. Jacobi.
 - 63.—*Ibid. J. P. Crozer Griffith.
 - 64.—*Ibid. L. Emmet Holt.
 - 65.—*Ibid. Louis Fischer.
 - 66.—*Ibid. Edwin E. Graham.
- Colorado Medical Journal (Denver), August.**
- 67.—*A Study of Rabies. Charles Gresswell.
 - 68.—*Assepsis in Country and Private Practice; a New Sterilizer. Hamilton Fish.
 - 69.—*Case of Tracheitis and Laryngitis. Minnie C. T. Love.
 - 70.—*A Theory to Account for Rheumatism. S. J. Hubble.
 - 71.—Establishment of a Central Laboratory of Pathology in Denver. Charles A. Powers.
 - 72.—*What the Physicians and People of Colorado Need More than a Medical Bill. P. D. Rothwell.
 - 73.—Contusions of the Eye. Wm. C. Eane.
- Denver Medical Times, August.**
- 74.—*The Urine in the Diagnosis and Prognosis of Non-Urinary Diseases. Edward C. Hill.
 - 75.—*Extradural Spinal Meningeal Hemorrhage, with Report of Case. S. D. Hopkins.
 - 76.—*Cause and Prevention of Uterine Cancer. W. W. Grant.
 - 77.—Animal Doctors and Animal Patients. James Weir, Jr.
 - 78.—A Good Tissue Builder. N. M. Basket.
- North Carolina Medical Journal (Charlotte), August 5.**
- 79.—Juvenile Criminals. Thos. F. Costner.
 - 80.—*Ileocolitis and Dysentery. W. G. Stafford.
 - 81.—*Clinical Notes. H. A. Royster.
 - 82.—*Anesthesia by Suggestion. J. H. Fouts.
- Southern Medical Journal (Orange, N. C.), August.**
- 83.—Readiness. F. T. Dickinson.
 - 84.—Asthma and its Treatment. G. A. Gilbert.
- Journal of Medicine and Science (Portland, Me.), August.**
- 85.—Cystitis in Women, and the Importance of Local Treatment. John B. Shober.
 - 86.—Puerperal Eclampsia and its Treatment. F. J. Taylor.
 - 87.—Suggestive Therapeutics. E. M. Wing.
 - 88.—*Masso-Therapeutics. E. H. Judkins.
- Texas Medical Journal (Austin), August.**
- 89.—The Lawyer and the Doctor. Hon. John G. Winter.
 - 90.—Knowledge is Power. John O. Scott.
 - 91.—*Hernia, Ferguson's Operation. L. W. Hollis.
- American Practitioner and News (Louisville, Ky.), July 15.**
- 92.—*Charlatanism. Arp. Morgan Vance.
 - 93.—*Normal Salt Solution in Surgery. James B. Bullitt.
 - 94.—The Stomach Tube. H. H. Roberts.
- Columbus (Ohio) Medical Journal, August 5.**
- 95.—*The Full Bath at 90 Degrees F., in Treatment of Scurlaria. D. S. Hanson.
 - 96.—*Reflex Nervous Disorders in Children. D. N. Kinsman.
- Virginia Medical Semi-Monthly (Richmond), July 21.**
- 97.—*Quantitative Estimation of Albumin in Urine. Chas. W. Purdy.
 - 98.—*A Clinical Lecture: Multiple Neuritis, Paralysis Agitans, Epilepsy. J. Allison Hodges.
 - 99.—*Operative Interference in Chronic Suppurative Otitis Media. Lewis S. Somers.
 - 100.—*Surgical Complications of Typhoid Fever. H. M. Taylor.
 - 101.—*Succedaneum to Digitalis. W. R. Uge Dalton.
 - 102.—*Metaphysics. Henry C. Eyma.
 - 103.—*Passiflora Incarnata. Herschel F. Fisher.
 - 104.—*Antitoxin in Treatment of Diptheria. Edwin L. Morgan.
- N. Y. Medical Journal, August 26.**
- 105.—*The Anthonem. Wallace Wood.
 - 106.—Subcutaneous Tenotomy. Biographical Notes. A. B. Judson.
 - 107.—*Gunshot Wounds of the Chest in the Spanish-American War. Henry S. Greenleaf.
 - 108.—Use of Parotid Gland Extract in Treatment of Ovarian Disease. E. Pierre Mett.
 - 109.—*Extradural Spinal Meningeal Hemorrhage with Report of Case. S. D. Hopkins.
 - 110.—Puerperal State and Puerperal Hemorrhage: Derivation and Classification. Walker Bourne Gossett.
 - 111.—*Report of Six Cases of Pneumonia Treated with Antipneumonic Serum. Antonio Fanni.
 - 112.—Review of the Several Operations for Hemorrhoids: The Best Operation. J. Coplin Stinson.
- Medical Review (St. Louis, Mo.), August 26.**
- 113.—*Excision of Right Superior Cervical Ganglion of Sympathetic for Glaucoma, with Report of Case. James M. Ball.
 - 114.—*Gastralgia; its Diagnosis and Treatment. Charles J. Boswell.
- Medical News (N. Y.), August 26.**
- 115.—*Certain Clinical Observations on Heart Disease. Edward G. Janeway.

- 116.—"Class Method of Gymnastic Treatment of Lateral Curvature of the Spine. Walter Truslow.
- 117.—"Subcutaneous Emphysema Occurring During the Act of Vomiting. A. W. Dunning.
- Boston Medical and Surgical Journal, August 24.**
- 118.—"Pott's Paraplegia as Affected by the Correction of the Spinal Deformity: a Report of a Case. Joel E. Goldthwait.
- 119.—"A Hospital Clearing-House. Clarence J. Blanke.
- 120.—"Volunteer Aid Work in Foreign Territory. Elliott G. Brackett.
- 121.—"Report of Case of Puerperal Eclampsia with Complications. Edmund E. Hill.
- Medical Record (N. Y.), August 26.**
- 122.—"Report of Case Treated with Yellow Fever Serum. Alvah H. Doty.
- 123.—"Briec's Disease, or Nephritis. Walter Sands Mills.
- 124.—"Mucocoele of Maxillary Sinus. W. Scheppergrell.
- 125.—"Evils of the Ritual Practice of Circumcision. Albert Miller.
- 126.—"Hernia of Vermiform Appendix. L. L. Hill.
- Maryland Medical Journal (Baltimore), August 26.**
- 127.—"Reflections on the Thirty-third Mile-post in My Professional Career. W. F. Barclay.
- 128.—"Right of the State to Enforce Vaccination. J. U. Dennis.
- Cincinnati Lancet-Clinic, August 26.**
- 129.—"Does it Pay to Live? Geo. J. Monroe.
- Philadelphia Medical Journal, August 26.**
- 130.—"Nephrectomy vs. Nephrotomy. Joseph Ranshoff.
- 131.—"Chronic Empyema of Accessory Nasal Cavities, with Report of Seven Cases. Geo. C. Stout.
- 132.—"Climatology of Nuxity. William Duffield Robinson.
- 133.—"Original X-ray Work and Its Value to Stomach Diagnosis. Walter B. Metcalf.
- 134.—"Some Uses of Pilocarpin. Stephen Harnsberger.
- 135.—"An Anatomic Point in the Etiology of Nasopharyngeal Disease. Lenox Browne.

AMERICAN.

1. **Ureteral Anastomosis.**—Noble first describes and discusses the various operations of ureteral anastomosis, and concludes that each case must decide the operation best suited for its repair. If a primary operation, the point where the ureter is cut will probably decide it. High injuries preclude implantation and tend to make the anastomosis easy, low down or near the bladder they make it difficult and favor implantation. Between these there is a region not well defined, that will allow of some latitude of selection; when a long section has been removed the problem is a difficult one. In such cases the disposition of the proximal ureter is a serious question. Intestinal implantation has its dangers and discomforts. Skin implantation means all the distress of the repulsive fistula. Connection with the opposite ureter is probably only practicable when undertaken with coexisting dilatation as a tube larger than the ampulla is liable to obstruct the flow of urine from above. This might be overcome by giving the ureter to be transplanted an upward curve and anastomosing it to the wider portion of its fellow at the pelvis of the kidneys, or into the latter cavity even, if a lumbar incision is required. Implantation into the bladder will be required when the ureter is cut low down, and in secondary operations for injuries of the inferior extremity, for the cut off portion becomes occluded and shrunken so that anastomosis is impracticable.

2. **Inversion of Uterus.**—After noticing the history of this accident, Browne reports six cases, in the last of which he describes a new operation as follows: Bowels and bladder having been evacuated, the patient was then etherized and the inverted fundus drawn outside the vulva with a strong vulsellula forceps; the openings of both Fallopian tubes were brought plainly to view and an incision one and one-half inches in length was made through the posterior portion of the uterus, avoiding the tubes and the larger vessels. Through this incision Sims' large dilator was passed up into the cervix and expanded to the largest extent. The rigid tissues of the cervix were felt to relax; then on withdrawing this dilator, Nos. 2 and 3 Hank's hard-rubber dilators were passed through the cervix; the finger was also passed to feel that there were no adhesions. The incision in the uterus was then sewed up with carbolic silk-worm gut, and with slight manipulation the fundus was easily replaced through the now passable constriction. Recovery followed. Conclusions: 1. This operation is not proposed to supersede ordinary taxis in the reduction of chronic inversion of the uterus. 2. It is not more dangerous, but much more certain, than prolonged or rapid taxis. 3. We avoid the danger of bruising the tissues and rupturing the vagina. 4. As an operation for inversion it is less dangerous than laparotomy. 5. Unless there be adhesions, which rarely exist, we can always feel certain of reducing the inversion at one operation.

3. **Rectal Irrigation.**—The following are the conclusions in Hyde's paper. Rectal irrigation has been found to have a distinct value in: 1. Leucorrhæas. 2. As a substitute for vaginal douching in young girls. 3. Acute and chronic ovarian and tubal lesions, with the possible exception of pyosalpinx. 4. Intestinal paralysis following sepsis. 5. After major pelvic operations to relieve any abdominal discomfort or tympanites. 6. Intestinal colic. 7. Doubtful in constipation. There is a distinct trend toward individualizing one's own particular line of treatment, and essaying to maintain an independent position. Established ideas are rarely rejected in preference to innovations, unless the latter are qualified to merit careful attention. Of these, rectal irrigation commends itself to gynecologists for thoughtful and unprejudiced consideration, as having seldom failed to meet the test on fair trial.

7. **Spondylolisthesis.**—Williams describes, in detail, the history of a colored woman who died in child-birth after symphysiotomy for pelvic deformity, in whom was found a rare case of spondylolisthesis or displacing of the fifth lumbar vertebra forward and downward over the sacral articulation. He reviews the literature of the subject and discusses the etiology. The deformity was evidently of recent origin, as she had passed through labor without difficulty four years previously. He is inclined to believe that it was due to deficient ossification and downward pressure. The patient had been in the habit of carrying heavy loads. As regards the frequency of the condition, he thinks it is more common than has been supposed. This is, however, the first one known that has come to autopsy in this country. It has probably passed unnoticed in many cases, as Dr. A. D. Bevan, Chicago, has stated to him that he has seen it several times in the dissecting-room. The article concludes with a bibliography of some fifty-seven titles.

8. **Fibroid Tumors.**—Noble reviews the history of operations for fibroids, reporting and listing the early operations. He gives to Kimball the credit of having first deliberately performed hysterectomy for fibroid, with successful results. He notices Koerber's paper as giving an excellent résumé, but criticizes him for trying to make it appear that he had priority in this operation.

9. **Perineal Tears.**—In this article Kelly follows up former publication on direct union of the torn sphincter in complete perineal laceration, and describes his method in detail with illustrations. He reports twelve cases.

10. **Transplantation of Ovaries.**—McCone reports results of experiments on thirty animals, previously noted in the *JOURNAL*, May 13, p. 1634. He made his experiments in three series, the first having for its purpose the demonstration of the accepted facts that pregnancy may occur where there is no contact between the ovaries and Fallopian tubes. These may be passed. In the second series he reports successful results in transplanting the ovaries from one part to another part of an animal, or to a different animal of the same species. In these he succeeded in obtaining normal reproduction in rabbits from which he had removed the ovaries and grafted in those of another animal. In the third series, however, he shows that the ovaries of a dog can be successfully transplanted into a rabbit and continue to functionate. His conclusions are: 1. Contact between ovaries and tube is not essential for conception. 2. Ovaries grafted from one part of an animal to another part of the same animal continue to grow, to functionate, and pregnancy can and does occur. 3. An ovary grafted from one animal to another of the same species continues to functionate, and maintains the normal condition of tubes and uterus. Pregnancy can occur. 4. Ovaries grafted from one species to another continue to functionate, and seem to prevent post-estrastion atrophy of tubes and uterus. 5. Best results are obtained where the raw surface of the transplanted ovary is sewed to a denuded surface. He suggests that in certain cases the grafting of animal ovaries in human subjects may be beneficially employed to prevent atrophy and post-estrastion nervous symptoms, etc. He is now intending to continue his experiments and to test the rabbits with dog's ovaries with semen from both species.

11. **Hyperostosis Cranii.**—Ellis reports a case of this disease in a man 60 years of age, causing exophthalmus and blindness, and describes the condition generally. The diffuse

form to which this case belongs is rare or seldom recognized, and its causes are very obscure. Treatment is ineffective.

18. **Retinal Disturbances from Arteriosclerosis.**—Zimmerman reports a case of thrombosis from arteriosclerosis of a branch of the central retinal artery. He excludes embolus in this case, from the fact of its being non-observed, and particularly to there being no heart trouble and no complete blindness in the beginning, each of which points to endarteritis proliferans as a cause.

20. **Amaurosis from Dynamite Gases.**—Brose reports two cases of complete temporary blindness caused by descending into a well after the explosion of dynamite. In one patient the vision has been permanently impaired. In the other, who was less exposed, the trouble was only temporary. In both cases there was unconsciousness from the gas. He attributes the loss of vision to an acute retrolubar neuritis caused by toxic agents taken up by the blood, affecting also the higher centers of consciousness.

28. See abstract in JOURNAL July 1, p. 39.

29. *Ibid.*, June 24, p. 1448.

33. *Ibid.*

34. See article, *Ibid.*, May 13, p. 1061.

35. **Fever and Its Treatment.**—Hare combats the idea that fever is necessarily a harmful process. His propositions are: 1. That fever when excessive or prolonged is harmful. 2. That moderate fever, not too prolonged, may be of distinct advantage to the patient. 3. That moderate fever, not too prolonged, if it is not advantageous may be, on the other hand, not deleterious but may be regarded by the physician, without any anxiety, as a characteristic concomitant symptom, which we would naturally expect to find in a patient suffering from the disease which is present in the patient's system. Fever is a condition developed in all healthy animals as soon as they undertake to resist infection, and he does not, therefore, consider it a useless coincidence. He would therefore not employ antipyretic drugs to combat fever, since, as a rule, they interfere with the protective action of elimination of poison, the development of antitoxins, and the stimulating and supporting fever. The cold bath, on the other hand, while relieving the fever if it is excessive, in no way modifies these protective efforts.

36. **Immunity.**—After first undertaking to show that there is not any absolute immunity, but that it is affected by various conditions, temperature, diet, symbiosis of bacteria and modifications of their virulence, McFarland combats the idea that the blood of the normal animal is and must be the secret of successful therapeutics of the infectious disease. Antitoxin is something added to the blood and not normally present in it. He does not attempt to show what it is, and thinks that no one else can show it either.

44. **Fractures of the Cranium.**—Jonas reports four cases of cranial fractures, showing points of special interest. In the first there was a large loss of brain substance and a large amount of foreign matter, dirt, etc., imbedded in the cerebral structure, which was almost impossible to wash out. Nevertheless, the patient made a good recovery in four weeks. In the second case there was a condition of apparent unconsciousness for over two weeks, with subsequent and complete amnesia of the period. In the third, in spite of there being an extensive tear of the longitudinal sinus, it was successfully sutured, with an uneventful recovery. The fourth case was notable on account of the specially marked localizing symptoms. Jonas thinks the most important indications in the management of these cases are: 1, thorough disinfection; 2, adjustment of bone fragments; 3, control of hemorrhage. He gives details as to how he met them.

47. **Complication Following Surgical Operations.**—Davis calls attention to the importance, in operations, of attending to the eliminative action of the kidneys, of the most painstaking care to preserve asepsis, and searching for any serious infections from without and within. Shock may be avoided or modified by care in giving anesthetics, and as to the temperature of the room. Pneumonia, in his experience, has followed the use of chloroform as often as that of ether. Excessive vomiting after operation is distressing and somewhat dangerous; probably lavage of the stomach is most effectual as a means of stopping it. Other complications mentioned are ileus, iodiform

intoxication, also the leaving of sponges or forceps in the abdomen, and secondary hemorrhage.

53. **Malarial Toxæmia.**—The author of this article, Dr. McBride, has spent a great portion of his life in practice along the river bottoms of the Arkansas, Grand and Verdigris rivers in the Indian Territory, an intensely malarial district, where he has had splendid opportunities to observe disorders of this kind. In the present paper he calls attention particularly to the bad effects of quinin in certain forms of pernicious malaria. Quinin given in the usual doses in such cases will produce intense and even fatal intoxication. Sometimes it produces a simple hematuria, sometimes a hematuric fever with jaundice more or less severe, with all the symptoms of a fatal intoxication of the blood. Quinin, he says, will produce hematuria under two conditions: 1, chronic malarial intoxication, and 2, a particular individual idiosyncrasy. The latter is the special predisposing cause, the malaria, the condition that determines in the organism, this intolerance to quinin. Given in such a case, it does not have its well-known salutary effect, but causes instead a new febrile attack differing from the malarial paroxysm in coming on at a different hour and presenting different symptoms. The attack appears from one to six hours after taking quinin. While the patient is tranquil and without fever, he is seized with a convulsive tremor with lowering of temperature and mental trepidation. After one or two hours of this state the temperature rises rapidly, sometimes reaching 105. There is vomiting of bile, or bilious diarrhea, an uncontrollable desire to urinate, and the patient passes a large amount of bloody urine, repeated at frequent intervals. The paroxysm usually ends in twenty-four to forty-eight hours, and all the symptoms disappear except the jaundice, which may persist for several days. If no fresh intoxication takes place the patient regains his health after a long convalescence, but if the paroxysm is repeated by continuance of the quinin, and the dose is increased, he rapidly passes into a state of collapse and death ensues from cardiac paralysis. The treatment given is first to clear up the urine, which McBride does by ten-drop doses of turpentin every four hours; to evacuate the bowels; to repair the damage done to the blood and blood-vessels by tonics and preparations of iron, and to give an antimalarial remedy, which he finds best in crescin.

58. **Medical Treatment of Nervous Diseases.**—Metzler's paper is largely a protest against therapeutic nihilism in the treatment of nervous disorders. He endeavors to point out the general indications for the different classes of cases, especially the degenerative types, and those due to toxins in the blood; those also of the vasomotor origin, in which the doing nothing plan certainly has no rational excuse with the remedies at our command. He notices the extreme views held by some, reflex action having been so overworked as a cause of nervous troubles that some have come to question such an etiologic factor altogether. "The passing of the reflex" is evidently not a catch word with him.

59. **Rational Treatment of Diarrhea.**—The first indication in the rational treatment of diarrhea is to expel the offending matter, but this, as Eccles says, does not constitute the treatment or work a cure. Lesions have been established and functions perverted, and the germs that work the mischief may still be lurking in the intestinal canal. The antiseptics have their part and, while we can not sterilize the intestines, we can make them as unwholesome for the bacteria as possible. Calomel is probably as effective as many of the newer drugs, but it has serious limitations. Salol, naphthalin, guaiacol, etc., in combination with a suitable astringent, are probably more satisfactory. As to the selection of the astringent, the author thinks tannic acid would be one of the most valuable, provided it could exert its action through the whole length of the intestinal tract, and he finds that tannalbin or tannated albumin meets the indications, either alone or in combination with ichthallin and leaves little to be desired as regards results. Tannalbin is so harmless that its maximum dose has not been decided. From 10 to 30 grains every two hours are given, and even oftener if necessary. He adds a number of prescriptions containing these drugs, which he recommends.

60. **Chloral Hydrate.**—After noticing the dangers of chloral hydrate, the author asks, "What is it good for?" and replies that it is beneficial in vomiting from whatever cause, unless

it be from obstruction of the bowels, though even there it affords relief. For hicough, even in the aged, and in typhoid fever patients, it is almost a specific. In infantile convulsions, injected into the rectum, it gives quiet sleep. It is a boon to the woman during pregnancy and in puerperal convulsions. In conclusion he reports a case in which he thought great benefit was derived from 10-grain doses at bed time, in a case of atheroma of the arteries, and he believes also of the cardiac valves.

61. **Ichthyol.**—Powell recommends the internal use of ichthyol in gastric fermentation, as better than all other remedies, and he has also been surprised to see its good effects in cases of locomotor ataxia, especially in the gastric disturbances of this disorder. In psoriasis the beneficial effect of the internal use of ichthyol is at once apparent. The disease is greatly modified by the remedy, but he has not yet seen a cure. He has found that it gives relief to some extent in aneurysm of the aorta, and has seen most gratifying results from its use in conjunction with compound valerianate pills in hysterical conditions.

62.—66. **Summer Diarrhea in Infants.**—This is a symposium on the proper treatment of summer diarrhea in infants. Dr. A. Jacobi, after noticing the matter of dress, which should be light and easy, the nature of food, etc., as prophylactics, remarks that more infants get sick from overfeeding than from underfeeding. The eliminating organs are overtaxed and fermentation and putrefaction of the retained matter takes the place of digestion, so that gastric and intestinal disorders result. Summer diarrhea is not a pathologic entity, but covers all forms of excessive diarrheal discharge, from acute catarrh to follicular enteritis and streptococcal or biliary gastro-enteritis. The main symptoms are excessive discharge of mucous, serous, and fetid matter with desiccation of the tissues and general anemia, leading to insufficient nutrition and thromboses and absorption of toxins. When any of the above disorders are complicated with gastric disturbances, vomiting results and the stomach should be emptied. Gastric irrigation in the young is easy and should be done with salt water, 7 to 1000, in a funnel or fountain syringe which, as it is raised or lowered, introduces and siphons out the stomach contents. The temperature should be according to the body temperature, low when it is high and higher when it is low. The intestines should be emptied speedily by purgatives and enemas, the latter under the same general rules as stomach irrigation. The purgative may be castor-oil or calomel in small doses every hour. Food should be withheld in the beginning and no milk permitted, as under these conditions it feeds bacteria. The first diet should be simple strained barley, toast or ice water, and if the discharge ceases to be thin and malodorous, white of eggs thoroughly beaten and mixed with barley or ice-water may be given. In most cases the stomach and bowel contents are hyperacid and need neutralization. For this purpose he prefers carbonate or phosphate of calcium, as not being purgative, .5 to 1 grain every one to three hours. Bismuth subnitrate or subgallate should be given every two hours. In case general collapse or thorough exhaustion exists, stimulation with hot rectal injections of water with 1 to 5 per cent. whisky are required. Pain may be relieved by warm fomentations over the abdomen. Opium, after the bowels are thoroughly emptied, has its value, and he would give to a baby of 6 months as much as 4 to 10 drops of paregoric every two, three or four hours. Intestinal disinfectants may be used, such as calomel, bismuth, creosote, etc. After the urgent symptoms of the disease have passed, if there is exhaustion and want of appetite, he gives strychnin in doses of 1/60 grain daily, and orexin tannate 1 to 3 or four grains several times a day, some time before meals. Fresh country air and plenty of it is almost essential.

Dr. Griffith's views in the main coincide with Dr. Jacobi's. He finds that after the toxic substances have been removed, and only the catarrhal condition of the intestines remains, and diarrhea still continues, nothing is better than bismuth, 4 to 5 grains every two or three hours, even in very young infants. He believes opium often essential after the early stages, but he knows of nothing requiring more judgment than the decision whether or not to give opium. Many cases of severe summer diarrhea appear to be due to heat exhaustion, and he thinks that the coolest of clothing, cool baths, sending children to the parks or on the water the best mode of treatment in many cases.

In enterocolitis, bismuth in full doses is probably one of the best remedies. Starch water enemas given slowly, and sometimes astringent enemas, are of use. Change of air and diet are of great importance. Cholera infantum is not so common in his experience, and the profuse exhausting discharge from the bowels must be met at once with opium. Pseudomeningitis depending on diarrheal disease is frequently seen, and there is sometimes a curious condition with apparently a paralytic condition of the vasomotor and probably pneumogastric systems without simulation of meningitis. In such a case the child breathes constantly with great rapidity, shows flushings in parts of the body, has rapid, feeble pulse, and may die at once without any apparent cause. This is undoubtedly a toxic state, and while not neglecting the condition of the bowels, the chief efforts must be directed to the nervous system. Strychnin in full doses, nitroglycerin, digitalis and atropin will aid most.

Dr. Holt's article dwells especially on gastric and intestinal irrigation, and describes the method, also noticing the drug treatment. The preventive treatment is the most important and this should embrace: 1. A proper application of the well-established rules regarding infant feeding; for it is chiefly infants who have previously suffered from digestive and nutritive disturbances arising from a violation of these rules who furnish us with our severe and most of our fatal cases. 2. Careful inspection of milk in cities, and the exclusion of that the temperature of which when received is 60 F. or above; and closer supervision of those who sell milk than is now employed. 3. The adoption of means by which the poor in cities may be furnished during the summer with milk sterilized under competent supervision, either free or at a nominal cost. 4. The general employment of Pasteurized or sterilized milk as an infant food during summer; Pasteurized, among the better classes, where the procedure can be more intelligently done and ice is abundant; but sterilized, among the poor and in tenements, or wherever no ice is to be had. 5. The avoidance of all solid food during the summer in children who are under 18 months old. 6. The prompt and radical treatment of all the milder forms of indigestion and diarrhea during the hot season.

He says: "In our management of infants suffering from intestinal disorders, the great importance of the adoption of energetic measures at the outset can not be too strongly emphasized. Doing the proper thing in the first twelve hours of an attack is vastly more valuable than correct treatment during the whole of the succeeding week."

Dr. Fischer's paper reviews at length the etiologic factors, which are outlined as follows: 1. Food, improper quantity and quality of the same, be it breast, or hand-feeding. It is a well-known fact, cited by Jacobi among others, that breast milk can also cause this disease. 2. The most frequent cause is certainly improper bottle-feeding, wherein food unsuited to the infant's digestive abilities is continued, in spite of Nature's effort to warn us, as frequently manifested by either vomiting or diarrhea, or both. 3. Milk from mothers suffering with tuberculosis or syphilis. Pregnant women, menstruating and all anemic women, secrete such poor milk that gastroenteric derangements are exceedingly common. 4. The influence of the weather on digestion, especially the extreme heat of summer. 5. Improper disinfection of the nipples after feeding, and consequent decomposition and formation of micro-organisms, causing infection; all unsanitary conditions deleterious to the healthy child.

He notices the importance of stomach washing and advises the use of calomel or castor-oil to clear the bowels, and follows it with bismuth and intestinal antiseptics and astringents. In some forms of collapse he would give hypodermics of 10 to 20 drops of whisky. Rectal and colon flushing are mentioned and methods described. As regards feeding, milk should be discontinued in all forms, for at least a week, unless the child is breast-fed, and in the latter case for at least one-half or one day. He gives directions for making rice, barley, farina, sago and cornstarch water with a tablespoonful of either to a pint of water boiled for a short time and strained, and enough boiled water added to keep the amount up to a pint, and he also gives directions for making a flour ball. Cool bathing and cold applications to the head are also valuable in reducing temperature and toning up the nervous system. He is opposed to antipyretic drugs and prefers hydropathic measures.

Dr. Graham's article follows along the same general lines as the others, adding only a few more details.

67. **A Study of Rabies.**—After noting and describing the causes and symptoms of rabies and its treatment, Greswell gives an account of a recent outbreak in Colorado, which came under his own observation. He believes that man is one of the animals least susceptible to the virus of rabies, and that cauterization of the wound within twenty-four hours of its reception by fuming nitric acid is a preventive of such infection.

68. **Tracheitis and Laryngitis.**—Love reports a case of a child 3 years old, who died practically from suffocation without any exudate or persisting edema in the larynx or trachea, which parts were only reddened. The infection, as determined by bacteriologic examination, was by the staphylococcus pyogenes aureus. There must have been present some edema existing ante-mortem that was not found visible after death. Symptoms were simply those of spasmodic croup.

70. **Rheumatism.**—The theory of rheumatism here advanced is that there is some disturbance in the condition of the white blood-corpuscles, and that any medicine which has power to decrease these corpuscles relieves the disease.

74. **Urine in Diagnosis and Prognosis.**—Hill's paper goes over the subject of the urinary symptoms in various diseases: specific infection, circulatory disorders, respiratory diseases, gastro-intestinal, hepatic, and pancreatic lesions, osseous, articular and constitutional disorders, nervous diseases, skin infections, purgative disorders and poisoning.

75. See title 109.

76. See abstract in JOURNAL, August 12, p. 414.

81. **Clinical Notes.**—Royster considers labial chancre, compound fracture of the lower end of the femur, with rupture of the quadriceps extensor femoris, and an unrecognized rupture of the uterus.

91. **Hernia.**—Hollis' paper gives full description of the method of radical operation for hernia devised and followed by Dr. A. H. Ferguson. The description of the operation in detail was printed in the JOURNAL of July 1, pp. 6-14.

92. See JOURNAL, § 81, p. 536.

93. See abstract in JOURNAL, June 3, p. 1254.

95. **Full Bath in Scarlatina.**—This paper points out what the author considers a superlative treatment in scarlatina where there was high temperature in the early part of the disease, severe nervous symptoms, or where one or both are present. The method is simple and consists in putting the child in water at 90 F., sufficient to cover the body and extremities. A large wash boiler or tub will generally suffice, and has generally been used in his cases. The child should be constantly rubbed while in the water, so as to change the blood in the skin as rapidly as possible. The time necessary to remain in the bath is about eight minutes. Dry quickly and put to bed, not taking time to put on a night gown or other clothing. Repeat the bath whenever the temperature gets to 103 or above, or, if the attendant is not able to take temperature, whenever the child becomes restless. Hanson reports two cases. He sums up its effects as follows: "1. It reduces temperature, which is probably the most important part of its action. 2. It favors elimination, yet its effects are so quickly apparent that this feature can be beneficial only in a minor degree. 3. It stimulates the circulation and strengthens the heart's action, thereby relieving the capillary stasis in skin more particularly, but probably in internal organs as well; this change can be most beautifully seen by observing the relief to the congested conjunctiva noticeable in those cases where skin is dark and capillary circulation sluggish, often stupor or unconsciousness present. 4. It inhibits the action of the toxins in some manner upon the circulatory, respiratory, and reflex nerve-centers. By repeating the bath as indicated until nature comes to the rescue, nerve exhaustion can be minimized and convalescence hastened. While patient is in bath, by constant friction to the skin we constantly change the blood in the skin, also the water in contact with the skin, and thereby bring almost in contact a large part of the blood in the body and the water in which patient is submerged. I believe that this contact of blood containing the germs inhibits their activity; thereby limiting the amount of toxins they produce, and minimizing the deleterious influence upon the economy. Possibly some of the toxic elements may be dissolved out of the skin and washed away."

96.—**Reflex Nervous Disorder in Children.**—Kinsman calls attention to the lack of inhibition in children as producing disorders special to their age; more particularly the reflex disorders, in which spinal and splanchnic nerves form the arc.

97. See abstract in JOURNAL, June 24, § 63, p. 1425.

99. **Chronic Suppurative Otitis Media.**—Somers' paper, here credited with being an abstract, is instead the paper he presented at the recent meeting of the ASSOCIATION, in the Section on Laryngology and Otolaryngology.

100.—See JOURNAL, August 26, § 154, p. 539.

101. **Succedaneum to Digitalis.**—Dalton, in this article, presented before the Section on Materia Medica, Pharmacy and Therapeutics, at the recent meeting of the ASSOCIATION, calls attention to the value of strophanthus as a substitute for digitalis. In many cases they are identical in their physiologic action as cardiac tonics, but strophanthus materially diminishes arterial ischemia and causes a faster flow of blood in the veins. It does not give greater work to the heart by contraction of arteries, and is entirely devoid of emulative action. Digitalis has an unfavorable effect on nutrition of the heart muscle by excessive arterial tension, which is not the case with the other agent.

103. **Passiflora Incarnata.**—Fisher points out that the belief that the root is poisonous is a mistaken one, and that the whole plant is generally employed. The dose is from 10 drops to 2 drams, repeated as required. He refers to the researches in the physiologic action of passiflora, especially that of Dr. Isaac Ott of Philadelphia.

104. **Diphtheria Antitoxin.**—Morgan reports his experience in the treatment of diphtheria by antitoxin. He has used it 125 times and finds it a valuable remedy, seeing beneficial results follow its use in the third and fourth day of the disease.

105. **The Anthemion.**—The author of this article sees a sort of resemblance between certain conventional arrangements in the brain and an ornament used in Greek temples, the anthemion. He asks whether the ancient Egyptians, Greeks and Assyrians who used this as a sepulchral device could have known of the analogous appearance in the brain of man and cattle, and answers, no. The connection, therefore, is a fanciful one, and we notice the paper here to explain its title.

107. **Gunshot Wounds of the Chest.**—Greenleaf reports seventeen cases of gunshot wounds of the thorax, in the Spanish-American War, and calls attention to the fact that while the modern projectile in this instance is in a measure comparatively humane, we have a sufficient percentage of unfavorable results to modify the claim. He gives suggestions as to the necessary methods of treating these cases, avoiding sepsis and infection of the lungs.

109. See title 75.

111. **Pneumonia and Antipneumonic Serum.**—Faroni reports six cases of pneumonia treated with Pano's serum, generally given morning and evening while the fever exceeds 104 F., all other medication being suspended. He thinks it a safe and reliable remedy in the treatment of pneumonia. The dose given is from a minimum of 10 or 20 c.c. to a maximum of 120 c.c. He concludes: 1. Pano's antipneumonic serum is the rational remedy in pneumonia. 2. Injections with this serum are not painful. 3. Serum over five months old is no longer active and produces no results. 4. It will not do harm, even if given in doses of 100 to 150 c.c. in twenty-four hours. 5. In all these cases it has shown wonderful efficacy. 6. In any lobar pneumonia, especially if the prognosis is grave, it is the duty of the physician to use this serum, and if he fails to do so there is no excuse for such an act, except ignorance of the work that has been done in the field of the serunotherapy of pneumonia.

113. **Excision of Superior Cervical Ganglion for Glaucoma.**—Ball reports a case which he thinks is the first in this country, of excision of the superior cervical ganglion in glaucoma. The result was immediate relief of pain for which alone he thinks the operation was justified.

115. **Heart Disease.**—Janevay notices the various phenomena of heart disease, among them the spontaneous disappearance or outgrowing by the patient of mitral insufficiency. He also notices the disappearance of the murmur of this condition in Graves' disease, the two conditions apparently being sometimes antagonistic. In his experience in private practice recovery is the rule in Graves' disease. Mitral stenosis is a disorder

more often overlooked, and he has observed it in a number of cases occurring after violent exercise in high altitudes. He thinks that in about one-third of the cases one can make a probable diagnosis by listening at the back of the chest below the angle of the scapula, where a murmur is heard, though not so marked as in front. He also calls attention to the substitution of the mitral systolic murmur for the presystolic as the heart compensation is markedly disturbed. Ulcerative or infectious endocarditis is another condition of which he speaks at some length, and he points out the difficulties of diagnosis. The most difficult of the acute cases to recognize are those where there is no heart murmur and where the lesion is on the right side and the secondary effects are more particularly in the lungs. In the former cases, by paying attention to the petechiae, especially if combined with irregular nervous phenomena, we may be able to make a correct diagnosis. In the latter the difficulty is in determining which is primary, the lung or the heart trouble.

116. Gymnastic Treatment of Lateral Spinal Curvature.—Truslow gives the results of experience with this method in the New York Hospital for Ruptured and Crippled, during the last year and a half. He concludes as follows: Varying conditions among curvatures do not prevent efficient work in groups of fifteen to twenty-five, but a gradation according to age and ability to work is necessary when many patients are treated. The class method ensures the treatment of many more patients than would be possible by individual supervision of exercise. The Swedish educational gymnastics is used because well adapted for three objects: 1, to isolate activity in groups of muscles; 2, the immediate and effective correction of faulty positions; and 3, the development of intelligent and purposeful co-operation of the patient. Nearly all of those who faithfully pursue the treatment show marked improvement.

118. Correction of Spinal Deformity in Pott's Paraplegia.—Goldthwait reports 9 cases, 3 in children and 6 in adults, of Pott's disease treated by correction of the spinal deformity by plaster-of-paris jackets, etc. In every case the correction of the spinal deformity has been followed by a very rapid relief from the paralysis, though in some of the cases inability to hold the spine in the correct position, or to manage the after-treatment, prevented this relief from being permanent. In others the results have been very good.

119. A Hospital Clearing-House.—Blake, suggests a central bureau where examination of applicants for hospital treatment can be made with better care; and it will prevent the class of hospital "rounders" from imposing on the charities.

120. Volunteer Aid Work in Foreign Territory.—The work of the Massachusetts Volunteer Aid Commission, during the Spanish War, is remarked on by Brackett, with some general comments on the subject. He thinks that, viewed from the experience of last summer, in order that this work should be carried on successfully, it is necessary that: 1. It should be directed toward supplying such needs as have resulted from the confusion and hurry in the initiating of a large campaign. 2. It must be carried on with deference to the judgment of the regular officers in the command, and should be particularly directed to supply the needs which have been found lacking, and which they better than any others are in a position to appreciate. 3. The work must be accomplished without call on the regular service for aid, either in transportation or distribution; that is, it must be a stream of supply from an independent source, and one whose presence is felt only by the relief it brings.

122. Case Treated With Yellow Fever Serum.—Doty briefly reports the case of Mr. Lackey, who was received at the New York Quarantine suffering from a well-marked case of yellow fever, and which was successfully treated by serum prepared under the direction of the Health Department of New York. While most cases brought to northern climates in this condition succumb, this patient rapidly improved under the treatment and made a good recovery.

123. Bright's Disease.—The article by Mills is very lengthy and almost monographic, covering the whole subject of Bright's disease.

124. Mucocoele of Maxillary Sinus.—Scheppegrell points out that the conditions that have been described as hydrops and mucocoele of the antrum were in a great majority of cases

due to cysts, and this is true also in many cases of empyema; that cysts may be present in the antrum for an indefinite period and their diagnosis is not always simple. They have sometimes been mistaken for malignant tumor. Their prognosis is better than in case of chronic empyema. He reports a case in which all the characteristic features ascribed to the old cases of mucocoele were present.

125. Circumcision.—Miller calls attention to the bad results of the performance of ritual circumcision by an unqualified layman, and protests against its being thus performed. The lack of aseptic precaution and the danger of inoculation of disease are pointed out.

126. Hernia of Vermiform Appendix.—Hill reports two cases of hernia including the vermiform appendix, and discusses the statistics of the condition by various authors, especially in Italy. He concludes that the vermiform appendix is found in about 1.5 per cent. of hernia, and that in not quite 3 per cent. of these cases the appendix is found on the left side. It is most frequent in children. He has been unable to find the report of a case in which the appendix was the sole occupant of the left femoral sac or an umbilical or ventral hernia.

128. See abstract in JOURNAL, May 20, p. 1117.

130. *Ibid.*, June 10, p. 1316.

131. *Ibid.*, April 29, p. 937.

132. Climatology of Nudity.—After discussing the physics of light, and its probable effect on the human subject, Duffield calls attention to the fact that the present state of the human skin is one of degeneration from overcovering, and thus one of the most important organs of the body has its functions more or less perverted and reduced, yet seldom is there any call for developing the skin. In fact, the tendency is toward substitutions which supplant its functions.

133. X-Rays in Stomach Diagnosis.—Metcalf calls attention to the value of the X-ray in determining points essential in the diagnosis of diseases of the stomach. He uses for this purpose what he calls his bismuth emulsion, which is non-toxic, non-irritating, and can be made antiseptic. The best work is done with the fluoroscope, and he considers the mica-plate static current the best, most practical, and safest means for exciting the Crooke's tube, inasmuch as the power of penetration is greater, the light is steadier, and there is no danger of X-ray burns.

134. Some Uses of Pilocarpin.—Harnsberger notices the value of pilocarpin in several conditions not mentioned in this connection in the latest text-books, among them orchitis; cholelithiasis, where it brings on relaxation of the system and relieves tension in the affected parts; in tonic spasms of the diaphragm and certain cases of hicough when firm pressure on the base of the tongue fails to give relief; and he would suggest its use in that rare and remarkable disease, arthrogryposis, which consists of persistent and refractory tonic spasms and contractures of one or more of the extremities. He also thinks it might be advantageously employed in connection with other remedies in certain cases of stricture and obstruction of the intestines, and in tetanus.

135. Nasopharyngeal Disease.—Lenox Browne calls attention to a fact not generally accepted, but which he thinks is reliable, that the wider the distance between the soft palate and pharynx, the more surely may one expect to have postnasal trouble. He holds that in a very large proportion of cases called atrophic rhinitis, it is a misnomer to apply the term atrophy to a structure that has never been satisfactorily developed. Atrophic rhinitis, he believes, is associated with an undue patency of the nasal orifice, nasal vestibule, nasal fosse, and of the nasopharyngeal vault.

FOREIGN.

Lancet, August 12.

Arrest of Pulmonary Tuberculosis.—J. KINGSTON FOWLER.—This author refers to a former work of his on the arrest of pulmonary tuberculosis, in which he reports obsolete tubercle as found in about 9 per cent. of 1943 autopsies. Others have found much larger percentages, but he does not attempt to explain the discrepancy. The process of arrest is important. Three varieties may be recognized: Pigmented tubercle that has undergone fibrosis containing small caseous or caseous-calcareous nodules. This is the most common form of the arrested

tuberculosis, and fortunately the one least likely to subsequently cause reinfection. 2. A caseous mass of considerable size, surrounded by a fibrous capsule. This is a condition fraught with great possibilities of danger, and he reports a case in which a lesion had existed for forty years, when the capsules being destroyed the contents were discharged into the bronchus and the patient died of acute tuberculosis in twenty-eight days. The third form of arrest may take place after the formation of a cavity. This is not so favorable as the first described, but is still compatible with long life. He thinks, however, that in these cases the patients generally die sooner or later of some pulmonary trouble. He rather protests against the general favor with which the open-air treatment is being received, not that he does not appreciate its value, but he thinks that people do not realize the long period of treatment it requires. The effect of climate is to a certain extent becoming underestimated. He recognizes the advantages of sanatoria as giving better chances of control in treatment, and he calls attention particularly to the gain in weight, which may be exaggerated as to its importance if the patient is ingesting a large amount of food. He also insists on the importance of taking temperature and noticing the difference between rectal and oral temperatures. The question of exercise will be largely determined by the presence or absence of pyrexia, hence the importance of temperature being taken.

The Prevention of Syphilis. FRANCIS H. WELCH.—Dr. Welch reviews the subject of syphilis, especially in the army. He thinks that the right future course to adopt in its prevention lies not "in any one isolated line of action, but in bringing to bear on the disease and its diffusing agency all the powers which our present civilization places at our disposal; and these are: *a*, normal and religious advance—to strengthen the higher elements of our nature; *b*, proper housing of the poorer classes—to render possible growth of modesty and chastity, and rational healthy amusements of mind and body away from our crowded thoroughfares—to curtail the present fostering influences of precocity and animalism; *c*, social action—to facilitate marriage for those not having the gift of continence, to remove the possible resort to selling the body for prostitution as a means of livelihood, and to curtail the twin contributing vices—intemperance; *d*, municipal action—to prevent solicitation in the streets and public gathering places and so remove the present temptation to the youths of both sexes, to eliminate agencies and localities for the pursuit of vice, and to make in all ways prostitution difficult; and *e*, hygienic rules—to necessitate from the votaries of prostitution proof (in the shape of a periodic certificate satisfactory to a magistrate) of physical purity as a guarantee that in their illegitimate practice they are not disseminators of disease as well as vice, to make sufficient and proper hospital accommodation for those not in a position to obtain adequate private treatment, and to furnish the means for compulsory segregation when necessary."

Note on Twelve Cases of Epileptic Insanity Treated by Means of Bromid of Strontium. J. G. SMITH.—This author concludes his article by saying: "It would seem, therefore, that whilst bromid of strontium is in some cases apparently of greater value than bromid of potassium in controlling epileptic seizures, yet on account of the more rapid action of the latter and its more lasting effect, the smaller dose required and lastly, its cheapness, bromid of potassium must be regarded as the more generally useful drug in the treatment of epilepsy."

Glasgow Medical Journal, August.

Three Years' Inductions of Premature Labor for Contracted Pelvis in the Glasgow Maternity Hospital. MALCOLM BLACK.—This article gives the tabulated results of the experience of the Glasgow Maternity Hospital in the matter of inductions of premature labor for contracted pelvis during the three years of hospital service of the author, and describes the conditions in which this method is employed, viz., when the true conjugate is under three inches or between three and four, and still dangerous for the mother. The method of inducing the labor is Krause's, viz., to insert an elastic bougie in the uterus between the membranes and the uterine wall under antiseptic precautions. When labor is not produced, Barnes' bags or, ultimately, De Ribes' bags may be required. The total number of cases is fifty; there were two deaths of

the mothers; all the rest were dismissed well, 5 labors were completed by craniotomy; 15 children were still-born; 10 were born alive, but died shortly; and 20 were saved. The tables are analyzed and many of the cases briefly detailed.

Journal of Laryngology, Rhinology and Otolaryngology (London), August.

Remarks on Treatment of Deflection of the Nasal Septum. DUNDAS GRANT.—The author notices the recent discussion on "Treatment of Nasal Stenosis Due to Deflective Septa," in the New York Academy of Medicine, and describes the various methods there mentioned (see JOURNAL, June 17, '94-99, p. 1381), suggesting that more attention should be paid to the result of these operations than has hitherto been given by the rhinologists. As regards the formation of perforations, he thinks they are not a matter of indifference, they may cause little inconvenience if large and situated well forward, while if small they may produce a whistling sound during respiration, and discomfort is apt to be caused by the accumulation in the perforation of mucus or mucopus.

Semaine Medicale (Paris), August 9.

Calculus of Ureter or of Appendix. TUFFIER.—A sound was inserted in the ureter during a nephrotomy, with a silver wire inside, and radiographs taken showing the course of the ureter, and attention called to the fact that it passes through McBurney's point, although at a different level from the appendix. A calculus in the ureter and a calculus in the appendix may thus cause deceptively similar symptoms, and it is in the line of the diagnosis of appendicitis that we are still deficient. An important means of differentiation from urinary lithiasis is afforded by study of the urine. A case in which a calculus in the ureter was diagnosed and found as expected is described in detail, the only certain means of differentiation being the presence of red corpuscles, a few leucocytes and epithelial cells in the apparently normal urine on microscopic examination. This microscopic hematuria, he reiterates, is evidence of urinary trouble; it is usually most apparent after certain movements or efforts, and persists. The urine in appendicitis, on the other hand, is usually decreased in amount; the salts and coloring matters may increase to simulate hematuria, but there is no true hematuria.

Berliner Klinische Wochenschrift, July 31.

Differential Diagnosis of Appendicitis. R. MÜHSAM.—"It is extremely important to examine closely into the anamnesis of cases suggesting appendicitis, and enquire especially in regard to pains in the stomach region." Mühsam describes several cases in which differentiation was difficult or impossible: perforation of a tumor in the duodenum in an adult; a case of intestinal invagination in a boy of 5, and one of perforation of typhus ulcerations. In four cases operated on, peritonitis consecutive to perforation of a gastric ulcer with abscess formation in the ileocecal region, was discovered in two cases. In another, pain from carcinomatous stenosis of the sigmoid flexure was felt in the ileocecal region. Abscesses in a fourth case were caused by the migrations of a pin in the tissues.

Renal Insufficiency Tested by the Freezing Point of the Blood. P. RICHTER.—Koranyi's statements that the amount of urea and uric acid retained in the blood can be determined by establishing its freezing point, have been confirmed by Richter's experimental research. The freezing point of normal blood is 0.56 to 0.58 degrees below that of distilled water. If both kidneys are removed the freezing point drops to 0.646. Small doses of cantharidin lower it to 0.62; larger to 0.70. The products retained, which induce this change, can not be the salts and must be the products of the destruction of the albumin. The question whether a diseased kidney can be removed is therefore capable of elucidation by determining the freezing point of the blood, which Senator calls an epoch-making discovery.

Centralblatt f. Chirurgie (Leipzig), August 5 and 12.

Influence of Incising the Parenchyma on Inflammatory Processes in the Kidneys. ISRAEL.—This intervention has proved particularly beneficial in cases of suppression of urine and a group of renal colics and hemorrhages which are usually classed as nephralgia. One case is described at length: ascending pyelitis with surgical kidney and anuria in a patient whose right kidney had been removed nearly a year before for tuberculosis. The anuria was the result of the tension of the organ enclosed in its solid capsule and obliged to assume the functions of the missing kidney. This pressure had increased, owing to

some slight inflammation, until the capillaries had become compressed. Every factor that can contribute to an increase of pressure in the kidney, torsion of the vessel stems, renal tumors, etc., induces inflammation and congestive swelling of the organ, which is usually manifested by nervous phenomena. Slitting the parenchyma removes this pressure and eases the nervous troubles. Cases that have been operated on for supposed calculi, tuberculosis, etc., in which nothing of the kind was found, were cured by the intervention. Israel also states that he has been investigating preparations from these cases anew, and in every case finds evidence of some degree of inflammation. It is important to further bear in mind that with the kidney, even very slight processes may produce colics. The best results have been attained in his experience by not suturing the kidney at once, but allowing it to granulate.

New Invagination Method of Lengthwise Intestinal Anastomosis. D. MORISANI.—This method avoids the use of any button and is distinguished by the fact that the sutures and anastomosed portions do not come in direct contact with the contents of the intestine. The proximal end is inserted in the distal end, after a strip of the mucous membrane of the latter, 4 to 6 mm. in width, has been removed from around the inside close to the end. The proximal end is invaginated to a depth of several centimeters, and is held with a few stitches taken through the edge of the distal stump and the corresponding portion of the invaginated stump, but not allowing the needle to enter the mucous membrane of the latter. The suture is then carried entirely around the intestine, the stitches slanting a little, and fastening the serosa of the proximal to the raw surface of the distal end, with the mucosa of the former intact. Sections of the intestine of dogs thus operated on show that the cohesion between the stumps is perfect and watertight in twenty-four hours, and that the inner stump shrinks in a few months nearly to the level of the suture. Clinical experience has confirmed the harmlessness and value of the method.

Centralblatt f. Innere Medicin (Leipzig), No. 30.

New Kind of Elementary Granules in Human Blood, Sputa and Tissues.—L. GRÜNVALD.—In this preliminary communication the statement is made that a large number of cells which have been supposed to contain merely homogeneous protoplasm, are in fact filled with granules which the author calls hypsophilous granules. They are stained with eosin, but decolorized again by acids or alkalis, and appear fuchsian red in Ehrlich's triacid stain, contrary to the usual eosinophilous granules, which stain orange. The granules are encountered in the round cells of the sputa, seropurulent effusions in the pleura or pericardium, pus and inflammatory neoplasms, also in the blood in the mononuclear or polynuclear leucocytes.

Dermatologisches Centralblatt (Berlin), August.

Hysterical Cutaneous Affections. C. RASCH.—Thirty cases of gangrenous ulceration of the skin in hysterical subjects have been reported. Almost all were young women and the affection almost invariably appeared on the front of the body, most frequently on the left arm, and lasted months and years. Rasch describes another typical observation of multiple bullous and gangrenous ulcerations on a housemaid, 18 years of age, with unmistakable evidences of hysteria and family history of mental disturbances. He insists on the term: hysterical cutaneous affections, as even if it does not proceed exclusively from vasomotor disturbances, and there may have been primarily self-inflicted injuries, yet the impulse to these acts proceeds from the mental affection, the hysteria, in which the brain is always abnormal. There is usually a history of sluggish healing of wounds from childhood up. The only treatment is purely psychic and is best carried out with complete isolation in a hospital service. The choice of local applications is immaterial, although powerful agents should be avoided on account of the low vitality of the tissues. It is best to refrain from paying much attention to the lesions, and merely seek to win the confidence of the patients to enhance the effect of suggestion. The prognosis depends on the prognosis of the hysteria. While the lesions are merely transient in some cases, in others they are so persistent and imposing, and accompanied by such pronounced mental symptoms, such as suicide in Doulteupont's case, that hospital treatment is absolutely necessary.

Deutsche Medicinische Wochenschrift (Berlin), August 19.

Wound of the Left Ventricle Cured by Suturing.—**PAGENSTECHER.**—The rarity of perforating wounds of the heart ventricles, requiring intervention, should induce the publication of observations to familiarize the general surgeon with the simple technic. Ten such observations have been published, including the subject of this communication. All the patients seemed doomed to speedy death, but six were cured, an encouraging result compared with Fischer's extensive statistics, which show that only 10 per cent. spontaneously recover, and Brentano's more limited number with 20 per cent. The indications were excessive hemorrhage in 5, with 2 recoveries; tamponing the heart and pericarditis in 4, with 3 recoveries, and suppurative pericarditis in 1, with recovery. The heart was sutured in 6 cases—in 4 the left and in 2 the right ventricle—with three recoveries. In the 7 cases of stab-wound, 2 were so slight that no suture was required, and in another the coronaria had also been injured, and death ensued, as must probably always occur when a main branch of the coronaria has been opened. In the observation reported, the young man—17 years old—was brought to the hospital immediately after the stabbing, in extreme collapse; death seemed imminent; no hemorrhage from the external wound, but indications of hemothorax; radial pulse imperceptible. The area of dullness had extended over the entire left half of the chest by the sixteenth hour, and intervention was decided on. The pulse was then 120, small and irregular. Ether was used and an incision along the fifth rib, with resection of 6 cm. After slightly enlarging the wound in the pleura and pericardium, the wound in the side wall of the left ventricle became visible, about 3 cm. above the apex, 3.5 cm. long and slanting from the rear downward and forward, the edges sharp and scarcely gaping, but a small bright-red stream trickling continuously from it. The wound in the pericardium was at a higher level. There was scarcely any blood in the pericardium. Three deep stitches and one superficial were taken with a Hagedorn needle and celluloid thread in the ventricle, not including the endocardium. The bleeding did not interfere with the suture, but the stitch in the upper rear portion of the wound was only possible during the forward movement of the heart. As soon as this stitch was successfully taken, there was no further difficulty, and the flow of blood ceased as soon as the threads were tied, the ends left hanging out for drainage. The action of the heart did not seem to be at all affected by the manipulations. The opening in the pleura was then enlarged, when an enormous mass of dark blood and clots and finally clear red blood poured out, and the entire thoracic cavity was stuffed with alternate sterile and iodoform gauze, which finally arrested the hemorrhage as the lung retracted. The wound in the pericardium was closed with catgut. All hemorrhage had been definitely arrested; sepsis was maintained, although a pneumothorax with a moderate, non-purulent effusion continued for some time. Temperature was never above 38.5 C. In six weeks the patient was employed about the house and garden. A small fistula persisted until the fourteenth week, when normal conditions in the thorax were completely restored, and the health has since been robust, now ten months since the trauma. Death is seldom immediate after a stab-wound in the heart, unless the co-ordinating center in the septum atriorum is involved, which at once stops the heart. Hemorrhage from a wound in the heart is less dangerous than from a wound in a large vein, other conditions equal. Less blood escapes and it only issues during systole if the wound is not large. The heart musculature may also contract and spontaneously close the hole, or a thrombus may form, favored by an oblique direction of the passage, and ragged edges, which explains the natural healing of wounds from small-calibered revolvers. The first loss of blood and the unconsciousness from the shock reduce the blood pressure and thus contribute to these spontaneous recoveries. Pagenstecher concludes by a description of a method of opening up the heart, like Rydygier's method outlined in the JOURNAL, xxxi, p. 1534; see also vols xxxii, p. 48; xxxi, p. 1580 and 1436; xxix, p. 756 and xxviii, p. 1036.

Muenchener Medicinische Wochenschrift, August 8.

Serum Treatment With Serum from Human Convalescents. WEISBECKER.—The results of this method of serotherapy have proved so satisfactory that Weisbecker of Geden, Oberhesse, now communicates the details of his technic (see

JOURNAL, XXXI, p. 1068). Measles scarlet fever, typhus, pneumonia and diphtheria have been aborted or remarkably attenuated by serum derived from persons convalescing from the same disease. A single injection of 10 to 15 c.c. for an adult, or 5 to 8 c.c. for a child, is usually sufficient, repeating the injection if a relapse occurs. It is used the same as Behring's serum, restricting it to severe cases, and is most effective the earlier it is applied, the third day the limit in pneumonia, for instance. It is powerless against septic complications and after-affections, except in so far as its early use prevents their appearance. The serum is taken from blood obtained from a vein at the elbow, caught in a small glass jar with a metal screw cover, with a capacity of 150 to 250 c.c., three-quarters filled. It is set aside in a cool place for twenty-four to forty-eight hours, when the serum is usually separated and can be aspirated with a syringe and transferred to smaller vials, containing the amount for one injection. He has kept serum thus derived for years, without its altering, but as a few bottles have spoiled he adds a few drops of a 0.5 per cent. carbolic acid solution to each dose. The serum sometimes requires several days to separate completely; this can be hastened by squeezing the clot below, in which case the serum will be cloudy. The entire blood can be utilized by leaving it for several months to become completely macerated by the serum, shaking it from time to time, but it spoils readily and is less reliable than the clear serum. The chief point to be borne in mind is that no serum can be utilized except that from otherwise sound, normal persons, with a typical, classic case of the disease, which has not been treated with serum or medicine of any kind, and has passed into the unmistakable convalescent stage, the fever permanently banished, and not later than three to four days after the decisive fall of the temperature in measles, scarlet fever, pneumonia and diphtheria, and four to five days with typhus. There may be some fever in the first day, but the second and third must be free. The limit for whooping-cough, influenza and tetanus has not yet been definitely determined. The patient must have the appearance of a convalescent, show some appetite, although lesions in the throat or exanthemata may still linger. The amount of blood that can be withdrawn depends on the case, from 100 to 500 c.c., and no inconveniences have been observed from this venesection, 200 to 220 c.c. will provide serum for twenty to twenty-two other cases. Asepsis in every particular is vital. All medication, baths, alcoholics, must be avoided; the diet, milk, bouillon, eggs, with plenty of water, and the cure left to Nature. He gives *ut aliquid fiat*, a solution of hydrochloric acid.

St. Petersburg Medicinische Wochenschrift, July 22 and 20.

Experimental Study of the Sensibilities of the Skin. H. HILDEBRAND.—Donaldson, Goldscheider and others assert that there are certain points on the skin representing the terminals of specific nerves, which transmit the sensations of heat, cold, pressure, etc. Goldscheider's articles on the subject have recently been collected and republished with his methods of research. Hildebrand has been carefully testing them on numerous subjects, but his experience absolutely fails to confirm the isolated point theory. Testing a small region of the skin with a fine needle, it was found equally sensitive all over, either to heat, cold, pain or pressure, with no specially sensitive points, with the exception of the hair follicles, which are more sensitive to pressure.

Wiener Klinische Rundschau, August 6.

Dermoid Cysts of the Ovaries. B. NOVY.—The proportion of dermoid to other ovarian tumors varies from 2.2 to 24 per cent., according to various authors. Forty-two were noted in 411 ovariectomies at Pawlik's clinics: 22 in the right; 15 in the left, and in 5 cases, in both ovaries. One patient was a little over 10; 9 over 20; 18 over 30; 10 over 40; 3 over 50, and 1 over 62 years old. The stem was twisted in 6 cases, once to such an extent that the tumor only received nourishment from the vessels of the adherent omentum. In 7 cases the tumor required operation three months after the first indication of its existence had appeared; in 8 others, six months had elapsed; in 5 a year, and in 7 two years, but in another case the tumor had been noticed twelve years before, but caused no disturbances until the last six months before intervention. In one case the tumor had appeared at 16, and caused suspicion of pregnancy, but remained stationary during eight normal pregnancies, not

requiring removal until a year and a half after it started to grow again, at 37½ years. Another woman of 53 noticed the tumor at 18. It remained stationary until the menopause, when it increased until removed three years later, when it contained fifteen liters of fluid. The longest interval was fifty-one years, the tumor first noted during the patient's fourth year, regressing three times and reappearing, never very large, until the menopause, when it attained twice the size of a man's head. Permanent and milk teeth were found together in some cases, all with enamel, "several that could have served to embellish the mouth of the bearer," also fragments of bone resembling portions of jaw and skull, etc. Hairs were found 30 cm. long; black, red and blonde hairs were sometimes found in the same cyst. Brain substance was found in 8 cases; glia tissue in 1, and tissue resembling the mucosa of the alimentary canal, air-passages, and trachea, thyroid, etc. Novy announces, as the results of his microscopic research, that the dermoid cysts of the ovaries form an independent group, distinguished histologically and genetically from the dermoid cysts of other portions of the body. Although resembling a teratoma in some respects, it is yet morphologically and genetically distinct, and might be called a cystic "rudimentary parasite of the ovary." A teratoma of the ovary does not differ from a teratoma in other parts of the body, and is due to inclusion fetus in fetu. The cystic parasite of the ovary, on the other hand, develops from the ovum still in the follicle, which is fully matured and has received the impulse to further, partially complete, segmentation. The nature and cause of this impulse are yet undetermined. These tumors do not produce metastases in the manner of malignant tumors. He concludes by asserting that "Küster's sign" has no pathognomonic significance, as he established in his numerous cases.

Greece Medicale (Syra), July.

New Exploratory-Operative Process for Abscess of the Liver. A. P. Petridis.—A number of convincing observations are described showing the inefficacy and even the dangers of the usual exploratory puncture and manipulations in a certain class of abscesses of the liver, and a new method is proposed, by which the largest portion of the surface of the liver is exposed in the most favorable region for discovering the one or more abscesses that are causing the classic symptoms. Petridis calls it horizontal polipeurodiaphragmotomy, temporary or prolonged, a simple, harmless and surprisingly effective means of reaching otherwise undiscoverable and inaccessible pus collections, and saving many cases hitherto supposed hopeless on account of the impossibility of evacuating the contents. The first step is a horizontal incision with the thermo-cautery, starting at the mammary line on a level with the seventh rib, and carried toward the center of the area of hepatic dullness, to the axillary line and even beyond. The seventh, eighth and ninth or tenth ribs are then resected for a distance of 10 to 15 cm.; then a new parallel incision is made with the thermo-cautery on the diaphragm as far as Glisson's capsule, exposing the liver as the lips of the wound are drawn apart, and upward with a couple of wide retractors. The eye, the fingers and the needle can then be used for exploration, all under control of the eye. The abscess or abscesses are then evacuated by the Zancarlo method, which he considers infinitely superior to the Lamel-longue and Stromeyer-Little methods, which have survived their usefulness.

Revista Medica del Uruguay (Montevideo), June.

Sympathectomy in Glaucoma. L. DEMICHELI.—Three observations are recorded in which chronic glaucoma was treated by resection of the cervical sympathetic, as recommended by Jomesson. In one case of almost total blindness from absolute glaucoma, mydriasis with atrophy of the iris and horny cataract in one eye, and chronic irritable glaucoma in the other, with patches of atrophy in the iris, and increased intraocular tension; Y-1, 50, lateral resection of the cervical sympathetic with extirpation of the superior and inferior ganglia (the middle ganglion was absent), was followed by restoration of Y to 2-3; visual field and intraocular tension normal. This improvement has persisted to date, three months, accompanied by the gradual disappearance of the patches of atrophy in the iris. In another patient, 81 years old, with simple chronic glaucoma, the vision was reduced to fingers at 1 meter, right eye, and movements of the hand, left eye. The latter was restored to

2/3 in two days after resection of the left cervical sympathetic. Slight ptosis, ocular tension below normal and extreme myosis appeared at once and have persisted during the two months since.

Societies.

American Academy of Railway Surgeons.—The next meeting of the American Academy of Railway Surgeons will be held in Omaha, Neb., October 13 and 14.

International Dental Congress.—The date for this congress at Paris is Aug. 8 to 14, 1900, and "it is hoped that it will continue the traditions so happily initiated at Paris in 1889 and Chicago in 1893." Secretary-general, E. Sauvez, 17 rue de St. Petersburg, Paris.

International Congress for Physical Education of Youth.—An international technical committee is being organized in connection with this Congress, to be held at Paris, next year. The object of the committee is to study the application of scientific data to the perfecting of the human form divine, and substitute them for the prejudices which at present have altogether too large a share in the education of children.

Congress of Electrotherapy and Radiography.—The French Society of Electrotherapy and Radiography has decided to hold in Paris an International Congress and annual exhibition of the latest appliances in this branch of medical science, to which all interested are invited. The next Congress will be held during the Exposition, and promises to be of unusual interest. The executive committee is composed of Apostoli, Boissac du Rocher, Branley, Oudin, Mutier of Paris, and Donnier, 57 rue Nicolas Leblanc, Lille, to whom all communications can be addressed.

National Academia de Medicina de Brazil.—The Academy recently celebrated the seventeenth anniversary of its foundation by a special meeting at Rio Janeiro, notable for the remarkably fine projections of photographs, in colors, of the results of recent research by the members, especially of the symbiosis of the ocellus iteroides and a fungus, to which de Lacerda has been calling attention. (See JOURNAL, July 8, p. 100.) He showed the marked difference in growth of the bacillus with and without the fungus and the latency of the latter during the winter, while the bacillus iteroides is not affected by the cold. He also announced the new and most significant fact that this fungus is found in great numbers in houses in which yellow fever has occurred, in the paper, walls, furniture and in the dejecta of flies.

British Medical Association.

Annual Meeting, Portsmouth, Eng., August, 1899.

THE MEDICAL SERVICES OF THE ARMY AND NAVY.

(Continued from p. 548.)

ALEXANDER OGSTON, M.D., in his address in surgery, after the preliminary remarks on the demands of modern times on surgery, and the effect of Lister's discoveries and doctrines, alluded to the unsatisfactory status of the British naval and medical military services. He said in part:

A standard of work at least equal in excellence to that of the civil surgeon ought to be expected of army and navy medical officers. Senn, of Chicago, chief operating surgeon with the United States Army recently in the field, and one who has done much for surgery, points this out in the following axioms:

1. That in theory and practice military surgery is equivalent in every respect to emergency practice in civil life.
2. That the wounded soldier is entitled to the same degree of immunity against infection as persons in civil life suffering from similar injuries.
3. That all formal operations in war must be performed where the wounded can receive the full benefit of aseptic and antiseptic precautions.
4. That operative interference is indicated in all penetrating wounds of the skull.

5. That gunshot wounds of the chest should be treated under the strictest antiseptic precautions.

6. That laparotomy in penetrating gunshot wounds of the abdomen is indicated in all cases where life is threatened by hemorrhage of visceral wounds, and the general condition of the patient is such as to sustain the expectation that he will survive the immediate effects of the operation.

These are reasonable demands, many might ask more, but nothing that falls short of some such standard can be accepted as satisfactory. Statistics prove that of all wounds in battle there are 7.4 per cent. of the brain, 7.5 per cent. of the chest, and 4.7 per cent. of the abdomen, amounting to 20 per cent. of all wounds. There must, therefore, in the next great campaign, be an enormous field of usefulness to properly trained antiseptic surgeons, and a fearful waste of life if they be not there to occupy it. It scarcely, moreover, requires to be pointed out that gunshot wounds of other parts besides those of head, chest and abdomen offer a field for modern surgery that has scarcely yet been entered on. No extensive campaigns have been conducted since antiseptic surgery was fully introduced, but the smaller ones have shown the need for a class of surgeons more highly trained than hitherto to carry the best methods of antiseptics into the domain of gunshot wounds, where septicity is a danger greater and more frequent than in any other class of injuries whatsoever. And I am convinced, from a study of wounds inflicted by modern projectiles, on which it would be out of place to enter here, that in gunshot wounds of the soft parts and extremities a very much larger proportion of lives and limbs than hitherto can be saved, and another great field of modern conservative surgery opened up by the application of improved methods and principles of treatment, in the hands of those who really know how to employ them.

In all that pertains to surgical work, it will not be questioned by those aware of what is now required, that our military and naval surgeons have, in peace, virtually no training to fit them for what they may at any instant be called on to undertake in war. Who that compares the conditions under which the civil surgeon is formed with those existing in the Royal Army Medical Corps or the Navy will be so bold as to say that the latter furnish any adequate means of familiarizing their surgeons with the highly complicated and difficult procedures which they ought to be able to carry out with dexterity and success?

Dr. Ogston goes on to say that Great Britain, of all countries, should be the first to care for its naval service, and one can hardly appreciate the actual facts.

He pointed out that in the event of a naval engagement of any magnitude the wounded on board British ships of war would have to be attended to in a small dark room, unprovided with any save the rudest appliances and a few cots, where at most half a dozen men could be handled, and which is moreover, in many vessels, as much exposed as any other part of the ship to the fire of the enemy. Were such a fighting bay rendered untenable, the wounded, however great their need, could be attended to only by being lowered, slung in a vertical posture, down the narrow hatchways, where the shot is brought up from the magazines to the guns, and even these would not be available during the heat of an action. Everything on board ship that can destroy life is in the highest perfection, everything that can save it is of the rudest description and behind the age. In the case of a gunshot wound through the abdomen the only chance of recovery is laparotomy performed within twelve hours, but on board none of Her Majesty's fleet is there any possibility of performing such an operation; there are neither accommodations, instruments, nor accessories. Or were 20 per cent. of the men of one of her battleships or cruisers killed and disabled in action, the wounded among them could not, in the present state of things, receive the attention that ought to be given them.

Yet there is no reason why the constructors of the navy should not arrange under the water line, shielded from the enemy's fire by the turtle-back armor deck of the vessel, a sufficiently large, and well-lit space, fitted with all that is required for wounds, compound fractures, and operations on the main cavities of the body. In these the wounded could be lowered through hatchways made capable of transmitting

men on stretchers or litters even in the midst of an engagement, so that all emergency operations could be satisfactorily performed.

Matters are even worse on board the smaller vessels, which have no surgeon and few surgical appliances. On torpedo boat destroyers there are no materials for making splints, only a box of antiquated remedies like those supplied in the vessels of the mercantile marine, where the sailing master acts as the doctor. It would not sensibly retard the speed of such a boat to carry a surgeon—or at least several men specially and fully instructed in first aid, and really capable of efficiently affording it—and to furnish such appliances as would enable them to deal with wounds and compound fractures.

The requirements of naval warfare must always, more or less, impede the carrying on of surgical work on shipboard during naval actions. No person will impugn the principle that the efficiency of war vessels as fighting machines has first to be considered, and as much accommodation as possible allotted to their fighting armament. It is inevitable this should be the chief consideration in fitting out the navy. To keep the communicating doors of water-tight sections open during action, in order to convey the wounded to the surgeons, might cost the lives of all on board. It may also be that in naval warfare, especially in some vessels, success may occasionally best be purchased by throwing aside, for the time being, all considerations of dealing with the wounded. But the principle may be, and is being, carried too far: for it is a duty to see that, short of interfering with the perfection of the fighting machine, no suffering is left unrelieved or life needlessly sacrificed, and no means neglected of bringing wounded men the earliest and best attention that can be given. No questions of economy should be allowed to prevent officers and sailors wounded in naval warfare receiving such early and effectual help as their condition so urgently demands. The cost of a couple of twelve-pounder guns would probably cover all that is required for such ship.

Criticisms without suggestions are usually better unmade; and to call attention to defects in the services, without indicating the lines of remedy, would be almost unpatriotic. I have already ventured, to some extent, to indicate how I think defects may be made good, though some of the suggestions have been more of detail than principle. It would be out of place to dwell at length on minor suggestions; but it may now be desirable to state generally the lines on which the services can be brought into harmony with the requirements of modern science, so as to ensure the wounded in war the most enlightened treatment, and for the medical officers the means and training for carrying on their work in a manner that will bear comparison with that of their civil counterparts.

It would be easier to do so if we possessed universal military service, as we might then look for guidance from Continental examples. In countries where this obtains the most eminent civil surgeons are at the disposal of the authorities in time of war, and in peace hold rank in the army, receiving promotion like those actively serving. They are soldiers in reserve, and can be made use of wherever their eminence and special qualifications make them most useful in war. The idea of adopting this system among ourselves, but on voluntary lines, is no new one; although it has recently been brought prominently into notice by Lord Lansdowne's creation of the Central British Red Cross Committee. If the committee make an endeavor to attach a number of our most capable civil surgeons to the Royal Army Medical Corps, by conferring on them military rank and titles, with special privileges and emoluments, on condition that their services be at the disposal of the government in time of war, some good may be done. There are obvious difficulties, but they do not seem altogether insuperable, and, at any rate, such a plan is worthy of the attention of the War Office. But anything short of this, as for instance, the old desultory method of inviting civil practitioners to volunteer their aid when war breaks out, and so supply the defects of the service, is doomed to failure; because, though capable young graduates are thus obtainable in considerable numbers, they are not the class of experienced surgeons who are wanted, they can not replace the military or naval medical officers, and are at best but a species of superior

dressers. Few, if any, of the men who would be of real value will come forward, save perhaps in the event of an impending national calamity. The system was tried in the Crimea, and has since occasionally been carried out by the National Aid Society; but I am sure those who have seen it in operation must admit that it is at least a comparative failure.

Although the arrangements of foreign services can not be directly adopted in our own, much that is instructive may be learned from the medical services of Germany, where compulsory service exists. In that empire every medical man who has served possesses a fixed military rank, even if engaged in civil practice, and is liable to be called on to serve where and when required. Those who have not served in the regular army, but are in private practice, annually receive an inquiry addressed to them by the war office as to whether they are prepared to serve their fatherland in case of war. Every German medical man who has served in the army at all is maintained for nineteen years under military orders—that is, he possesses a fixed rank, and is allotted, even in time of peace, a known military post which he would occupy if war broke out. Thus the university professors hold high military rank, corresponding with their eminent civil position and scientific attainments, and are required to give annual courses of instruction to the medical officers serving in the army or navy. Such well-known surgeons as Bergmann, Bruns, Trendelenburg, and Mikulicz have to teach these classes during the Easter holidays, so as not to interfere with the winter and summer sessions of the universities. Each professor has his fixed military rank assigned to him in case of war; most of them rank as lieutenant-generals, some as generals, and even higher, and in the event of war they act as consulting surgeons to the medical officers of the army in the field or base hospitals. They receive the same pay as the military surgeons, as do also the other surgeons who are liable to be called out in case of war; and some of the latter have places assigned them in the sanitary corps, etc., so that their skill and experience are utilized in every department of the service.

In time of peace German army surgeons have the development of their professional culture ensured by the following measures: The most promising surgeons and assistant surgeons are sent to do duty for a year at a time in the medical, surgical, and gynecologic departments of the hospitals connected with the universities, and in other large public hospitals unconnected with them. The junior and assistant surgeons are also annually sent to attend the special courses of instruction in anatomy, surgery, and operative surgery mentioned above. The senior medical officers, nearly corresponding with our surgeons-major, at least the most competent and promising of them, have to serve in rotation in the large military hospitals, in which are treated, not merely soldiers, but all kinds of ordinary patients; there they have to act as teachers and attend and take a share of the tutorial work among the pupils in the classes of the various professors; or they may be sent to do duty for a year in the general hospitals, not only in the surgical, but also in the medical and gynecologic wards. They have also to attend, as they may be ordered, annual courses of bacteriology; or they may be furnished with funds for traveling in other countries and studying their medical and sanitation arrangements.

All surgical instruments and appliances in the German army are provided by the state, and in their navy this is likewise the case; every hospital in which the medical officers serve has its complete armamentarium provided for it, so that no unwise economy hampers the most thorough and modern practice of the healing art; the same thing is true in regard to their naval medical service.

In the Russian army and navy similar care is taken of the professional culture of the medical officers. Russia possesses 6 large and 300 small hospitals connected with the army, besides smaller lazarettos; and in some of these the equipment is far in advance of anything the services possess in this country. Thus the military hospital of St. Petersburg, wherein are treated all medical, surgical, gynecologic, ophthalmic, and other diseases, consists of five separate clinics or infirmaries, each of which is complete in itself, and possesses departments for every class of disease, and even wards for paying patients. The wards are excellent, and replete with

appliances of every kind; and there are bandage rooms, purifying rooms, operating theaters, bacteriologic departments, rooms for physical research, laboratories for teachers, and laboratories for students, all excellent and complete. Each clinic possesses 850 beds, 120 of which are for women's diseases, and 20 for children's; and about 45,000 patients are treated per annum. In these clinics the students and assistants have to work in the most thorough manner, and study every kind of case. The hospital possesses a staff of 34 professors, 70 privatim doctores and 47 assistants. Each department is furnished with an ample annual allowance for instruments and apparatus, and can apply for and obtain additional grants for anything more that is required, or for anything new and expensive. They have liberal provision of everything calculated to assist the most advanced work and investigation; X-ray rooms, photographic rooms, electric rooms, immersion lenses, centrifuges, etc., to an extent that excites the marvel and envy of British visitors. The work in the wards, such as case taking, temperature recording, and every sort of examination and study of the cases, is of the very highest character; and the operations and dressings are carried out by the surgeons and qualified assistants in a fashion that is above praise.

Russia has 3000 surgeons in her army, and any of these may, if he show ability and powers of work, apply for and be ordered to return to study in the hospitals for a period of two years. There he has to work as a regular assistant, and on proving his capacity may attain a place among the teachers of the institution; or he may be transferred to the hospital of some provincial city, and there continue to perfect himself in his profession, and further qualify himself for his duties in time of war.

The Russian naval hospitals are arranged like their army hospitals; they exist in many parts of the empire, there being five large ones at different ports, besides one or two smaller ones; they admit civil cases of all kinds; and in them the medical officers possess opportunities of training themselves in all manner of high-class professional work. In the Russian navy the medical officers who show ability can obtain permission to return for two years to the hospitals, and can there advance by merit, ten every year, to become privatim doctores, and so proceed to the position of professor. And they have the same privilege as those of the army of obtaining, after ten years' service, two years of study leave in the hospitals and schools, during which time they are granted extra pay.

The Russian state supplies its army, its navy, and their hospitals with instruments of the newest construction, embracing appliances for special diagnosis and treatment; the operation instruments, and even the boxes that contain them, are arranged so that they may be readily sterilized by heat or otherwise; and Schimmelbusch's sterilizers, and apparatus specially constructed for carrying out antiseptic and aseptic treatment under the difficulties of a campaign, are supplied with them. The drugs are prepared for the services in the form of tabloids, with the active principles accurately dosed and made up by the newest machinery. Dressings, bandages, and such like are prepared, sorted, made up, sterilized, and sent out from factories which are ideals of purity, ingenuity and care, in a way that is an example to the world.

In the French army post-graduate courses, expressly for medical officers, are conducted by professors at the different universities throughout the republic, and the cost is borne by the army medical departments, while a certain number of the medical officers of the active and reserve army are yearly ordered to attend them, extra pay being drawn by those who do so.

Dr. Ogston then suggested, in detail, a scheme of reform, which lack of space precludes printing here.

(To be continued.)

Chicago Academy of Medicine.

Regular Meeting, June 23, 1899.

(Concluded from Page 485.)

RELATION OF CHILDHOOD TO ADULT DEFECT AND DISEASE IN ITS PULMONARY AND CARDIAC ASPECTS.

DR. WILLIAM J. BUTLER—The lungs form an interesting subject to the pathologist and clinician, whether considered in childhood or adult life. But the relation of childhood to adult pulmonary defect and disease appears particularly attractive

because of the much discussed predisposition to pulmonary lesions and the important bearing of the same on the life of the individual. The demonstrable congenital defects are rare, and while they form an interesting pathologic spectacle, they are clinically unimportant so far as the adult is concerned. They might be dismissed with the mention of their occurrence. Cases of an absent or remnant of lung are reported, as are likewise the more frequent cases of defective development as the result of intrauterine disease or defect producing lung compression, and as a result defective lung development, as through diaphragmatic hernia, etc. That an absent lung, however, is not incompatible with an extended existence is illustrated in the autopsy of a German soldier who died at the age of 24 years, in whom was found but one lung. However, of far more importance, could we throw any light on it, would be that subject which still beggars a scientific explanation and denomination, which the pathologist speaks of as undemonstrable qualitative lung changes, and the clinician as a predisposition, both of which, while tolerable as somewhat expressive, in reality convey little definitely.

While there are certain appearances in subjects, which experience teaches are characteristic of those that later develop pulmonary infection; that there are those who do not present the same and who later develop chronic pulmonary disease, and those that are models of these signs who never develop the same must be acknowledged. It is not our purpose to deprecate the use of these terms in speculating on the future of the child who shows them; but, however, we contend that they must be considered with caution in estimating as to future disease of adolescence, and that the same can only be permitted done when dealing with pathologic changes that permit of interpretation from physical signs. It is notable that while acute pulmonary diseases may be among the most frequent disorders of childhood, chronic affections are quite uncommon, and that pulmonary tuberculosis, so far as our clinical observation goes, is quite rare in children under 10 to 12 years of age. Some of our acute affections may, however, terminate in chronic ones that assume great importance as to the future of the child, namely, the lung and pleural thickenings presenting after a pneumonia, lobar or lobular, or the pleural thickenings following a pleurisy. These exert a decided influence on the future of the child who may succumb early in life as the result of recurring acute attacks of pneumonia and pleurisy, or from tubercularization of the foci. Bronchiectasis, however, is quite rare, at least on the post-mortem table. In those patients who survive a period of years, marked displacement of the mediastinum and heart may be observed, if the chronic inflammatory process has extended beyond the pleura to the surrounding tissues. And under such circumstances we not infrequently see varying degrees of dextrocardia in right-sided affections of the chest. There are also noted marked deformities of the chest as the result of the contracting and retracting processes. These latter, however, are not among the frequent results.

The results of such changes on the adult, so far as defect and disease are concerned, assume a great importance both in the gradual advance of the chronic process, the greater vulnerability of the organ to infections, both acute and chronic, and not the least important its effect on the right heart as the result of increased resistance offered to pulmonary circulation. This latter consequence is most beautifully illustrated in the pulmonary atelectasis resulting from pronounced thorax deformities as the result of Pott's disease or rickets. In such cases proportionate to the pulmonary compression, obstruction is occasioned in the pulmonary circulation, to overcome which the right heart must increase its propelling power, which it effects by hypertrophy, thus producing a condition similar to that found in a lesion at the mitral end of the pulmonary circulation, and presents an identical picture with the same, and is attended with similar periods of cardiac incompetency, which is so often a cause of death in subjects with greatly deformed thoraces.

In regard to the relation of childhood to adult defect and disease in its cardiac aspects, this would require classification, at least into the two divisions, congenital and acquired cardiac lesions.

The congenital lesions, according to Sindes, Rokitansky,

Orth and others, are to be considered the result of developmental defect and not of endocarditis. If we are to consider them in their relation to adolescence, we should take up those that involve the pulmonary conus, orifice and artery, with accompanying septum defect, open ductus Botalli, etc., as these are the lesions that assume the greatest practical importance, as they are far more compatible with a comparatively prolonged existence than those still rarer lesions of the tricuspid valve. The most frequent of the pulmonary lesions are narrowing of the conus, with septum defect and varying relation of the patency of the foramen ovale, or narrowing of the entire trunk of the artery with septum defect and varying relation of the foramen ovale.

The pulmonary orifice lesions offer an interesting study in those that survive, as they at times present a peculiar aspect and decided secondary changes. As a rule, they are poorly developed, may be cyanotic, and not infrequently are the subjects of pulmonary tuberculosis. The frequency of the latter in pulmonary stenosis is variously estimated by different observers. Whatever the discrepancy in statistics, it is notable that they frequently develop and die of it.

Concerning the acquired heart lesions, we have to deal not only with endocardial, but pericardial affections. Pericarditis in childhood is said by Baginsky to be probably more frequent than in adult life. An opposite position to this is maintained by Da Costa. On the other hand, Dukinson, from pathologic observations, says that it is less frequently observed in children than adults, and that the rheumatic form is almost invariably associated with endocarditis. However, its occurrence portends serious consequences for the child, as but few of them pass beyond the age of puberty.

Endocarditis, on the other hand, is not an infrequent phenomena in children, though probably not so frequent as diagnosed. Its occurrence, however, causes at once a serious outlook for the child, not only as to its immediate results, but as to his future in the way of recurring attacks of endocarditis, cardiac incompetency, etc., as a heart lesion tends to progression and not regression. As in the congenital lesion, so too in the acquired, children usually develop less satisfactorily, and proportionate to heart hypertrophy may arise chest deformities in the so-called heart humps.

It is needless to mention the enormous preponderance of acquired endocarditis on the left side of the heart over that on the right, which equally or even more so characterizes the congenital form as to the right over the left heart, although there congenital mitral stenosis has been recorded and we have seen acquired right heart endocarditis "posted."

It was previously noted that in the congenital pulmonary stenosis, pulmonary tuberculosis was a frequent cause of death; with equal prominence may be mentioned the fact that death from tuberculosis is exceedingly uncommon in mitral lesions, and that cases of pulmonary tuberculosis that develop mitral lesions may be given a favorable prognosis as to their tuberculosis, and likewise an early acquired mitral lesion protects the subject to a great extent against tubercular pulmonary development. This is dependent on the principle that has been recognized for ages, namely, that a chronic passive pulmonary congestion is unfavorable to the growth or development of tubercular processes. The acquirement of this passive congestion is assured by the development of a mitral lesion. This infrequency of pulmonary tuberculosis in mitral stenosis is contested by some, but we can not but recognize the worth of the observation of such eminent pathologists as Conrad and Kolisko, and the clinicians Bomberg, Neusser and Kovacs, all of whom held this view.

Concerning aortic lesions, their presence alone would have no bearing on pulmonary conditions other than forming a *locus minoris resistentiæ* during acute pulmonary affections.

Cardiac insufficiency in aortic lesions is always a grave prognostic sign, and pulmonary congestions that so arise are usually of short duration.

The prognosis of children, as to life, who early develop heart lesions, is variable in great part with each case, as they are at all times liable to recurrent attacks of endocarditis, each one of which exerts its deleterious influence on the heart muscle and often increases the existing lesion or adds another thereto.

DENTAL ASPECTS OF CHILDHOOD IN THEIR RELATION TO ADULT DISEASE AND DEFECT.

DR. A. E. BALDWIN.—In looking over the list of the different headings of "Childhood in Its Relation to Adult Disease and Defect," I was impressed with the many aspects of this question, each one of which has a bearing of very great importance, it being almost impossible to separate either one from the other. There seems to be a relationship between all of them, but I shall try to restrict myself to the topic assigned to me. The dentist, or one who makes the dental part of our anatomy a specialty, notices many of these defects more frequently than do other specialists or those engaged in general practice. We all know, from observation, that heredity plays an important part in the diseases of childhood. Heredity occupies an important part in the field of defects from a dental standpoint. When I say a dental standpoint, I do not mean to refer simply to the teeth, but to the appearances thereof as well. It is not necessary for me to call your attention to the many-shaped faces and the many shapes of the teeth characterizing the different nations. There are characteristics especially belonging to each. I shall only call your attention to one feature in this connection, and after having made dentistry a specialty in the last sixteen years of my practice, I consider it a very important feature, and that is the care of the milk teeth, so-called, or the first set of teeth, as to the prevention of deformities of the face. We know that the tendency of the teeth is universally to move forward or toward the front of the mouth, and if certain teeth are extracted out of time and before the time for others to come in to take their place, the space becoming smaller than necessary for the proper alignment of the teeth, as a consequence there will be produced irregularities of the teeth. The lower part of the face must be developed or expanded in a different way from most any other part of the human organism, and this is largely brought about by the pressure of the incoming teeth expanding the jaws. The teeth form in the jaws, attain a certain size, are erupted, and then remain during life. When being erupted, the teeth crowd and oftentimes appear to be leading to strong irregularities, and dentists are approached to extract these teeth adjacent to the ones coming in, so as to allow them to come in regularly. This is part of Nature's plan of developing the jaw, and I want to warn our confrères against giving away to the tendency of extracting such teeth to make room for the new teeth that are coming in, thus dwarfing the jaw and preventing its proper expansion. Our field for humanity is to do as much as we can to prevent any such irregularities from taking place, and not allow those things to be done for our patrons, for their interests and for humanity at large. By so doing we will prevent a great many abnormal and partially developed jaws.

Another point is with reference to the care of the child's teeth. It is not necessary for me to do any other than to make a suggestion which will lead you into the thought I wish to convey. You know that in childhood habits are formed, and if attention is not directed to the infantile or milk teeth how easy it is to produce a train of diseases or a suitable soil for a train of diseases which will take almost any of the forms spoken of in this list, notably nervous diseases, and diseases of the alimentary canal. What I may say has occurred to most of you a great many times, but it is to my mind of very great importance, that is the care of the molar teeth of children, not for the direct as much as for the indirect effects. The indirect effects are these: The child must not only sustain life by the food it takes, but the nutriment must also be such as to allow for expansion. It is more important to the child that it should have a good masticating apparatus than it is for the adult. Take a child whose molar teeth are not properly attended to—I am speaking now of the milk teeth—and that child will not masticate its food; consequently food will be taken into the stomach and the work which should devolve on a variety of organs is thrown on one. If the child be of a nervous organization, in many instances we will find dyspepsia developed with its consequent train of symptoms. If the habit is formed, it will probably remain during life with all its consequent irritations and troubles that develop in various lines. By preventing the habit of bolting food, or by encouraging the proper mastication of food and mixing it with saliva, we will in this way relieve the stomach and alimentary canal, and we will

greatly tend to preserve the health and prevent the adult organization from disease.

PROCTOLOGIC ASPECTS OF CHILDHOOD IN RELATION TO ADULT DISEASE AND DEFECT.

DR. JOSEPH B. BACON—It is impossible to give more than a synopsis of the vast amount of literature and to touch on some of the main faults of interest in this most important subject without making this paper too voluminous for the purpose it is intended to occupy in this general discussion.

Digestion and assimilation are two very important factors in the growth and proper development of a child; yet neither of these conditions can be normal when there is habitual constipation or impaction of feces in the rectum, the serious effects due to the absorption of fecal products on the nervous system even causing insanity, disorganizing the blood—indeed, the whole body may be deprived of normal development by this autoinfection. In fetal life the rectum is composed of a blind pouch that finally descends deep into the pelvis and becomes attached to another blind pouch inverted at the anus and forming the anal canal; the union of the blind ends of these canals, and the absorption of the membrane ending the septum, results in a permeable gut or true rectum. Normally this septum is all absorbed, but frequently it remains in part and thus forms a constriction of the rectum or a congenital stricture, resulting in chronic constipation alternating with impaction. Again, a sensitive polypus forms in the lower rectum. At the time of defecation the feces drag it down near the anus. If this sensitive polypus is now compressed by hardened feces, pain is reflected back to the sacral plexus, then over the pudic to the inferior hemorrhoidal nerves to the sphincter and muscles, producing a spasmodic contraction. The peristalsis of the gut above, together with the voluntary intra-abdominal pressure, forces the feces through a spasmodically contracted anus, often producing a tear of the mucous membrane resulting in a chronic ulcer or fissure. The enormous supply of sensory nerves distributed to the anus makes even a small tear or ulcer so extremely painful when soiled by feces at the time of defecation, that the child dreads to have a stool, voluntarily avoids it, obstinate constipation results and, if neglected, impaction occurs.

I have seen chronic cases of impaction where the rectum and sigmoid were so distended that all the pelvic organs were displaced. The rectal walls had been so distended and thinned that normal contraction never occurred, and through life the bowel never became normal in muscular action, so that the patients were continually compelled to use enemas and purgatives. One young man with a history of chronic impaction of feces of the rectum and sigmoid in childhood, had had intermittent attacks requiring anesthesia and mechanical means to relieve him. I examined him, found no obstruction, but an enormously thinned and dilated rectum. I explained to him the danger of the gut rupturing if he allowed impaction to recur, and prescribed laxatives, diet, etc., but in less than a year, in spite of his care to avoid it, impaction took place and the gut ruptured, followed by fatal peritonitis. The post-mortem report described the rectum and sigmoid as dilated to many times the normal size and almost a complete loss of mucous elements in the gut walls. This case could have been saved if care had been exercised in looking after it in childhood.

Chronic impaction of feces in the rectum in a female compresses all the organs of the pelvis, delays the normal development of uterus and ovaries, misplaces the bladder upward and produces vesical irritation and nervous symptoms, etc., compresses the ureters and disturbs the functions of the kidneys, produces pressure atrophy of the levator ani muscles, thins out the perineal triangle and superior and inferior fascia of the levator ani muscles, and elongates the uterosacral ligaments, weakening the supports of the pelvic organs and subjecting the patient to visceral ptosis later in life. Hemorrhoids are very rare in children and usually are symptomatically cured by removing the primary cause, such as constipation, prolapse of mucous membrane, chronic diarrhea, disordered portal circulation, etc.; but when hemorrhoids occur in children they are very apt to recur in adult age. The rectum usually contains pathogenic microbes and its mucous membrane is more frequently abraded by indigestible substances taken with the food. Hence we frequently find chronic ulcers, or a blind internal fistula the result of an abscess. This pus-forming fistula causes amyloid visceral change if neglected, and usually affects the patient's chances for health in adult life. More rare affections, such as primary tuberculosis, syphilis, gonorrhoea, adenoids and multiple polypi, prolapse, proclitica and malignant disease, while very important,

require too much discussion to be properly considered here. Much might also be said concerning reflex nervous symptoms that call attention to conditions remote and serious that continue through adult life.

HABITS OF CHILDHOOD IN RELATION TO ADULT DISEASES.

DR. W. X. SUDDUTH—Prenatal, intrauterine and infantile diseases expend themselves in childhood or adolescence, seldom or never persisting to maturity. They either result fatally at the time or are cured in infancy, or possibly may drag along into the early years of adolescence, when they carry the victim off. In some instances, though, they persist as surgical defects which limit the usefulness of the part operated on, but seldom or never endanger the life of the adult. The conditions of childhood, however, which do persist into adult life, are the vicious functional and bodily habits which are perpetuated through the mental habitude of the individual, consciously or subconsciously, and make or mar the adult life. My subject, therefore, contrary to the views of the previous speakers, is the most important one on the program. The habit aspect of the condition of childhood manifests itself throughout life in the production of diseased conditions at maturity. I use the word habit in two senses. It may be used as representing an involuntary act. A person may have the habit of constipation, and that may continue, without any organic lesion, into adult life. The word may also be used as indicating a tendency toward disease which may have been established in childhood and carried out in mature life. The word "vicious" may have two aspects also, that of immorality, which is the old idea, or better, as I prefer to use it, in the sense of perniciousness.

Almost every condition has within itself the possibility of the formation of a habit. We may have the common one—pain habit; as, for instance, an acute inflammation gives rise, by well-known pathologic conditions, to pain, but pain is not necessarily a condition *per se*, but the perception of an injury rather than the injury itself. We know that such an acute inflammation may be entirely relieved until there is no more manifestation of it; yet the pain may continue and be persistent, not only throughout childhood, but throughout adult life. "Pain habit" may thus be established and persist entirely independent of any inflammatory condition we can discern.

One particular habit which seems to me to be as important or more important than any of the above is the constipation habit. Habitual constipation is a term we use constantly in our conversation, and yet there may be no organic lesions which account for it, and in the majority of cases it depends more on habit aspect than it does on any organic lesion that may be found. If we discuss the question of vicious bodily habits, that is, immoral habits, may we not refer to the practice of masturbation in childhood and in adolescence, and its effects on the adult. There is no question at all but what masturbation comes to be a habit as practiced by some individuals. Masturbation, as practiced, however, by the majority of youths, does not become a habit, i. e., a condition over which the individual has no control, or a condition that requires extraordinary arrest of attention in order to break off the habit. The question came up in a conversation with Dr. Scott as to whether masturbation was not a normal condition at certain periods of the life of the boy. I do not look on masturbation as a disease necessarily, except as it manifests itself almost in the form of insanity, as it does in some instances. It is not a physical disease; it is the effect, however, of physical conditions. In a great many instances masturbation is practiced for its sedative effect, pure and simple. I recall the case of a boy who learned that it was possible to relieve pleasure by manipulation of the parts, by going in swimming when comparatively a young man, and coming in contact with a log on which he manipulated and from which act he experienced pleasurable sensation, and thus, in many instances as it proved by chance, masturbation is found out and followed later as a means of sedation; a sure method of letting down the nervous tension of the body which the individual finds to be comfortable.

There are many other questions which might be referred to under the head of vicious habits, that are simple in themselves, but which lead to graver consequences in maturity. I presume, however, the one that is most important from my standpoint is that of emotional prodigality, the habit of indulging the emotions: unrestrained emotional prodigality. In my line of practice there is no one thing that is so pernicious and so productive of vicious conditions in the adult as emotional prodigality. It covers almost the entire field of nervous diseases. It is the basis of a great many of the functional derangements of maturity, and to my mind, in the great majority of cases, it is the forerunner of insanity in many of its forms.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance	\$ 5.00
Foreign Postage	2.00
Single Copies	10 Cents

In requesting change of address, give old as well as new location.

Subscriptions may begin at any time and be sent to

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
No. 61 Market Street, Chicago, Illinois.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, 100 Washington St., Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

Those new members of the Association should send their annual subscription direct to the Treasurer, Dr. Henry P. Newman.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the Editor, and all communications relative to the business of the JOURNAL, proof-sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 61 Market Street, Chicago.

Original communications are accepted with the understanding that they are exclusively contributed to this JOURNAL.

SATURDAY, SEPTEMBER 2, 1899.

BENIGN AND MALIGNANT ENDOCARDITIS.

It is not improbable that the symptom-complex clinically designated acute articular rheumatism is of multiple and varied origin, and it is not less improbable that the etiology of endocarditis is likewise not uniform. It is known, in fact, that both arthritis and endocarditis may arise in conjunction with a considerable number of infectious processes, and it is not surprising, therefore, that the course and termination of the two affections should vary accordingly. The endocardial lesions, further, may assume various forms, as indicated, for instance, by the pathologic qualifications verrucose, polypoid, villous, ulcerative, suppurative, and by the clinical qualifications benign and malignant. All of the differences hinted at must be attributed to variations in the etiologic factors, and many of the problems that are bound up with this interesting and complex subject must await their solution at the hands of the bacteriologist and perhaps of the physiologic chemist; and who knows but that the precise determination of the cause may in turn result in the discovery of an efficient and specific therapeutic agent.

In an address delivered recently before the Berlin Medical Society, Litten¹ pointed out that there sometimes occurs in the course of acute rheumatism a severe, almost invariably fatal, variety of acute endocarditis, which differs essentially from the ordinary benign variety of rheumatic endocarditis in not becoming stationary and leading to connective-tissue contraction, but, with progressive increase in the symptoms, in advancing steadily to a fatal termination. This form of endocardi-

tis is to be distinguished from the septic-septic variety generally designated "ulcerative" in not giving rise to suppurative processes. It is further characteristic of the variety of endocarditis under consideration that the articular rheumatism on which it is consequent responds promptly to the administration of salicylic acid.

Rheumatic endocarditis is characterized by deposition of the fibrin of the blood in places where the endocardium has been injured, and especially on the valves, which then undergo sclerosis, with resulting insufficiency and obstruction. The condition is probably dependent on the activity of micro-organisms, whose identity has not yet been established. Rheumatic endocarditis manifests a tendency to attack only the valves of the left side of the heart, in contradistinction to the fatal and malignant varieties. It may be looked on as a distinct localization of the rheumatic process rather than as a complication. It never gives rise to infective abscesses and malignant metastases, but to simple infarcts and anemic necrosis, and only in branches of the aortic tree. It exhibits a marked tendency to recurrence, so that recent endocarditis is often observed in association with old valvular disease. It is frequently complicated by fibrinous pericarditis. It presents no characteristic temperature-curve, as do the malignant varieties, but it may pursue an insidious course, so that a valvular lesion may develop without recognition of the stages of acute endocarditis. The contents of the swollen and painful joints are clear or slightly turbid, but never purulent. The promptitude of action of salicylic acid in its effects on the general and the articular condition is characteristic and typical of acute rheumatism in contradistinction from all other varieties of arthritis.

The septic, so-called "ulcerative" variety of endocarditis is not necessarily attended with ulceration, which is but an incident of the morbid process and may not even be present, while, on the other hand, it may attend other varieties of endocardial inflammation of different etiology and clinical course. This septic endocarditis is dependent on virulent micro-organisms, especially of pyogenic activity. In contrast with rheumatic endocarditis it exhibits a marked tendency to destruction of the affected valves. It attacks the right as well as the left side of the heart, and gives rise to malignant metastases and abscess formation, which may appear in any organ. The causative micro-organisms are derived from putrid and disintegrating venous thrombi, and the endocarditis may be but one symptom of the general process. When peritonitis occurs as a complication, it is always purulent. The endocarditis is usually accompanied by hemorrhagic nephritis. Etiologically, diphtheria of the placental site following abortion or normal labor or of the bowel, of the soft palate, of the labia majora, of the endometrium, severe disease of the uterine appendages in conjunction with thrombophlebitis, phlegmonous parametritis, purulent cellulitis of the neck, for instance following scarlet fever or typhoid fever, are the most important factors. The disease is

¹ Berliner Klin. Wochn., July 10, 17, 1899.

characterized clinically by its acute and grave course, almost always terminating fatally, and by the height the temperature reaches, with erratic chills of quotidian, tertian or aberrant type. Cutaneous and retinal hemorrhages occur in the large majority of cases. Besides, suppurative processes occur in the skin and in the eye. Frequently mild manifestations of nephritis are present, with albumin and tube-casts in the urine and in the cases of hemorrhagic nephritis also with blood and blood-casts. The diazo reaction is seldom absent at the height of the attack; usually it is quite pronounced. The spleen is invariably enlarged, though during life not invariably so. When the spleen is the seat of abscesses these may be recognized by the development of perisplenitis, with palpable friction. When abscesses form in the lungs, and especially at the periphery, putrid pleurisy may readily develop. The endocarditis may be suspected from alterations in pulse, in cardiac activity and in respiration, in contrast with the rheumatic variety, which may pursue an insidious course. The rapidly fatal termination is characteristic of septic endocarditis. In the blood, especially after the chills, the same micro-organisms are found, when a positive result is obtained, as are present in the joints, and, in the event of death, also in the vegetations on the valves and in the spleen, of greatest significance with regard to the general process are the putrid and disintegrating thrombi.

The malignant rheumatic variety of endocarditis was first described by Litten², and he has studied altogether twenty cases of the disease. The disorder presents the characteristics of a severe general infection, with, as a rule, profound and extensive objective symptoms referable to the heart. The patient becomes anemic, cyanotic, apathetic. The temperature is relatively low, though at times it may be high and be interrupted by irregular, intermittent chills. The spleen is enlarged, the diazo reaction is present and hemorrhage takes place beneath the skin and the mucous membranes and into the retina. Acute hemorrhagic nephritis, with blood and blood-casts in the urine, is relatively frequent. The metastases that occur assume the form exclusively of simple infarcts and anemic necrosis, malignant and purulent metastases being entirely wanting. The course of the disease may extend over weeks or even months. Death is the usual termination.

The special variety of endocarditis under consideration sets in in the course of an attack of acute articular rheumatism or of chorea complicated by acute articular rheumatism, and the treatment of which the salicylates are successful. The endocardial lesion, however, instead of terminating in contraction of valve segments, progresses to ulceration and destruction and eventually to death. Sometimes it involves the right as well as the left side of the heart. Pericarditis is often an associated condition. The contents of the affected joints are never purulent, but serous, and clear or turbid. The action of the heart is greatly accelerated and arrhythmic.

and there may be palpitation, with oppression and dyspnea. The most important and most characteristic feature on post-mortem examination is the total absence of any suppurative process of thrombophlebitis. In the contents of the joints during life, and in the blood and in the endocardial vegetations and in the spleen after death, Litten has in two cases, among seven examined bacteriologically, found a coccus capable of cultivation and possessing pathogenic activity for mice and guinea-pigs.

HYPERPLASIA AND TUBERCULOSIS OF THE PHARYNGEAL TONSIL.

The etiology of adenoid vegetations in the nasopharynx, to the existence of which Wilhelm Meyer first called our attention, is still obscure. Meyer himself vaguely expresses the consideration that these vegetations might possibly stand in some relation to "scrofula." Others, as for instance Hopmann, looked on this hyperplasia of lymphatic tissue as due to constitutional conditions.

Isolated instances of tuberculosis of the pharyngeal tonsil were soon reported by Wendt and others. Lernaoyez described two cases of tuberculosis of the pharyngeal tonsil in the living, and fully recognized the importance of this localization of tuberculosis. Soon afterward Dieulafoy made a more extensive investigation; he implanted pieces from the pharyngeal and faucial tonsils into the subcutaneous tissue of guinea-pigs, with the result that in 20 per cent. tuberculosis developed. These results have been properly criticized by Cornil and others. In the first place the point of inoculation into the abdominal wall might easily become secondarily infected; in the second place it is quite likely that tubercle bacilli are often accidentally present on the surface of the extirpated non-tuberculous tonsils. At any rate, this contingency can not be excluded, inasmuch as Dieulafoy neglected to examine the material histologically.

Broca, Brieger, Goure, and others examined pharyngeal tonsils for tuberculosis with negative results. Goure, whose material included 201 instances, did not find tuberculosis in a single case, although eighteen of the cases gave a family history of tuberculosis and seventeen were actually tuberculosis. Goure came to the conclusion that while tuberculosis of the pharyngeal tonsil probably occurs, it must be very rare. Wright, Brindle, Bottstein, Pluder and Fisher, Gradenigo, and lately Piffel have also studied hyperplastic pharyngeal tonsils with reference to tuberculosis. In Piffel's recent article³, where these facts are stated, it appears that, excluding Dieulafoy's investigation, 655 pharyngeal tonsils have been examined histologically—and in some cases by means of inoculations—for tuberculosis, which was found to be present in 19 cases, or 2.9 per cent. Including the figures of Dieulafoy and others, the total number examined becomes 764, and among these 30 were tuberculosis, or 4 per cent. Piffel's own study includes 100 cases of hyperplastic pharyngeal tonsils, of which three were

² Zeitsch. f. Klin. Med., B. ii, 1881.

³ Zitt. f. Heilkunde, 1896, xx, p. 297.

found to be tuberculous, by histologic examination, the presence of the tubercle germ being demonstrated in only one case. The family history and other clinical points in connection with these 100 cases were carefully investigated, but the results do not indicate that tuberculosis plays any general rôle in causing hyperplasia, whose character in the ninety-seven non-tuberculous cases did not present anything striking.

The study of the three tuberculous cases brought out the fact, already known, that there is no definite way of distinguishing between a tuberculous and a non-tuberculous hyperplastic tonsil, except by means of the microscopic examination. A study of all the known cases of tuberculosis of the pharyngeal tonsil showed a family history in nine. Tuberculosis of the pharyngeal tonsil should be thought of in cases of hyperplasia in patients with hereditary predisposition and when there are tuberculous processes in the surrounding tissues, especially those that are connected with the tonsil by means of lymphatic vessels.

The manner of infection in tuberculosis of the pharyngeal tonsil is probably through inspired air. There are three possibilities to be considered: 1, the inspired air; 2, through tuberculous sputum; 3, through the blood and lymph. The nasopharyngeal cavity presents several anatomic and physiologic peculiarities which predispose to primary infection, as for instance the presence of lymphoid tissue whose surface is not smooth but is provided with crypts and irregular depressions; the surface is not lined with ciliated epithelium throughout—in the crypts, especially in the young, flat epithelium may occur; catarrhal conditions often arise in the nasopharyngeal mucous membrane, leading to epithelial denudation, which may also be caused by mechanical lesions. These remarks apply with particular force to the pharyngeal tonsil, and especially so when this is in a condition of hyperplasia. Piffel and others are therefore inclined to believe that in the majority of cases of tuberculosis of the tonsil the bacilli are deposited on the tonsil from the inspired air.

The second mode of infection i. e., through tuberculous sputum, presupposes a primary focus in the lower respiratory tract or in the lungs, and the presence of such a focus has been rarely demonstrated in the recorded cases.

The third possibility, namely, infection from the blood or lymph, probably need not be considered, inasmuch as it will be likely to occur only in connection with acute general miliary tuberculosis, in which it is not to be denied that miliary tubercles might also develop in the tonsil. The histologic study of tuberculous tonsils also rather indicates that the process generally extends inward from an infection near the surface.

Tuberculosis can not, therefore, be regarded as playing any general etiologic rôle in the production of hyperplasia of the pharyngeal tonsil. It would rather seem as if the hyperplastic tonsil is little likely to become infected and that the infection, when it does take place, is a

secondary process, added to the already existing hyperplasia, whatever its real cause might be. The fact, however, that tuberculosis of the pharyngeal tonsil may occur should always be borne in mind, because of the danger of further spread of the disease. This also furnishes one of the strongest indications for the removal of this structure, even when the seat of but comparatively slight hyperplasia, and it goes without saying that its removal should be as complete as possible. Lermoyez says that it would be better, in case tuberculosis should exist, not to meddle with it than to remove it only in part.

THE DANGERS OF SANITARY OFFICIALS.

A story has been going the rounds of the secular press that a public health officer in Pennsylvania held up a boarding house at the muzzle of a revolver and compelled the unwilling inmates to undergo vaccination. A corrected statement followed in some cases, that the doctor was threatened by some persons present and that he simply defended himself by showing that he was armed. Accepting this last version as correct, it throws a better light on the matter, but shows also that the perils a sanitary official has sometimes to incur in the course of his duty are not altogether confined to the "wild and woolly" West or the Mexican frontier. Our latest European importations in our seaboard states are often as lawless and dangerous as border ruffians or mountain outlaws.

COMPULSORY NOTIFICATION OF TUBERCULOSIS.

A prosecution of a Detroit physician for not reporting a case of tuberculosis as ordered by the Board of Health, has ended by his being fined \$50 and costs. Unless this judgment is set aside by a higher court, physicians will neglect to report cases of tuberculosis at their peril. Whether the health authorities will order placarding of the victims and their houses is perhaps questionable, but it might be predicated from the zeal which not long since prohibited public funerals of consumptives. (See *JOURNAL*, August 26, p. 553.) It appears to us that the health authorities of Detroit are a long way ahead of their time; in fact, it is possible that the sober sense of the rest of the world may never overtake them. If the testimony given in this trial has been justly reported, some very unguarded opinions have been expressed, such, for example, as that of one witness that he would dread being in a room with a consumptive more than with a case of smallpox. While one may not be able to deny the truth of such a statement in the particular case, it has hardly the true note of sincerity and certainly sounds extravagant. While all reasonable safeguards should be insured for the protection of the public, needless fears and extravagant precautions will in the long run only tend to make their advocates ridiculous.

AS OTHERS SEE US.

Professor Mosso of Turin, the eminent Italian physiologist, has been visiting this country, and according to the Rome correspondent of the *Lancet* has sent home some of his impressions. Speaking of the physical development of Americans he says, in the letter quoted: "It is enough to look at the passers-by in the American streets to be convinced how much more developed and

strong they are than our compatriots. The boys and girls in point of physique are far superior to ours. . . . America teaches us by the plainest and the most impressive of examples that physical education may be carried to perfection without any military object. . . . "It has been so much the rule with us to consider the average American physique as not quite what it should be that it is refreshing to have such testimony from a competent foreign observer. It is probable that we have been given too much to self-depreciation; it has been as much too common to underestimate ourselves in some respects as to glorify ourselves in others. The average American may be less plump than his British fellow Anglo-Saxon—if it is correct to call him so—but in bone and muscle and nerve he is in all probability at least his equal if not, taking all classes together, his superior. This is, of course, mentioned only as an anthropologic fact.

INFLUENZA AND THE DEATH-RATE.

The July *Bulletin* of the Chicago Health Department has some interesting data in regard to influenza. The city has not been free from the disease at any time since the epidemic of 1891, in which year there were 336 deaths reported from this cause. In subsequent years the reported deaths were as follows: 1892, 103; 1893, 88; 1894, 51; 1895, 165; 1896, 17; 1897, 15; 1898, 281, and 304 up to the end of July, 1899. It would appear from these figures that we are entering on another period of special prevalence of the disease, and the figures are more significant when we remember that the deaths directly due to the disorder represent only a small proportion of the total in which its agency has existed. Thus, as the *Bulletin* shows, while the reported deaths from influenza in the epidemic of 1891 added only 1.25 per cent. to the total mortality of the year, yet through its fatal complications of other diseases it added 17 per cent. to the total mortality, and while this year, thus far, the influenza mortality is only 2.25 per cent. of the whole, yet the total is still over 14 per cent. greater than the average of that of the last five years. The lesser proportion now than in 1891 may very properly be credited to the existence of influenza during that period. While we are dreading the possible advent of the plague, leprosy and other disorders, and possibly educating the public, a little too much as to the dangers of tuberculosis, it would be well to give some attention to the public peril from a disease that is efficient to a greater or less extent in adding one-sixth or one-seventh to the normal average mortality, while that of tuberculosis hardly exceeds one-eighth or one-ninth. Neither cholera, small-pox, nor any other epidemic has been responsible for more deaths in this country than has influenza during the past ten years, yet as its own special death-rate is small we are apt to overlook its pernicious activity.

HIGH ALTITUDES AND THE BLOOD-COUNT.

In the "Transactions of the American Microscopical Society," Vol. xx, Dr. A. Mansfield Holmes of Denver publishes some experiments made at Manitou, Colo., and the summit of Pike's Peak, on the effect of sudden changes of altitude on the number of red blood-corpuses. Similar observations made hitherto have been as a rule under conditions requiring the lapse of a con-

siderable period of time between the blood-counts at the different altitudes. The immediate effects were therefore less assured, but at Pike's Peak the railroad afforded the means for a very rapid change of altitude of nearly 8000 feet. He found that the ascent caused at once an increase of 11.5 per cent. of the red corpuscles, which had increased, three hours later, while still on the mountain top, to 14.42 per cent. The descent in the evening was accompanied by a decrease of 9.56 per cent., though still over 4 per cent. above what it was before the ascent. It was also found that the blood of a person accustomed to residence at a high altitude was less reduced in red corpuscles than that of one not so acclimatized. Dr. Holmes is inclined to account for the phenomenon, in part at least, by the fact of the diminished amount of oxygen in the rarified air of high altitudes. The organism has to obtain the oxygen it demands, and does this by calling into action and circulation many red cells that had been in a quiescent state in the deeper tissues, but he does not attempt to describe how far this or other influences may be responsible. The study has not, so far as we are aware, been before made in this country with the special conditions of rapid change insured by Dr. Holmes, and it is therefore of some interest.

LIQUID AIR IN MEDICINE AND SURGERY.

While liquid air is not likely to realize all the sensational prophesies of magazine writers, it is possible that it may have an important and rather striking future in therapeutics. At present we have only a few positive facts, but these are suggestive. Dr. Campbell White, New York City, whose experience with this agent seems to have been more extensive than that of any other physician, and whose communications on the subject have been noticed in the *JOURNAL*, evidently has confidence in its value, and his published statements as to its apparent curative action in lupus, nevus and other skin affections are certainly encouraging. Even in cancer he has hopes of its proving an effective remedy, at least in some cases. As a local anesthetic its efficiency is evident and he has apparently demonstrated the remarkable fact that the intense cold of this agent may have no permanent bad effects. It is not to be expected that with it one could realize Edmond About's fantasy of the "man with the broken ear," but it does appear possible that some human tissues can undergo freezing with liquid air and yet preserve their vitality, notwithstanding the excessively low temperature to which they have been subjected. As a benumbment of local pain, liquid air might be expected to have some value, and experience seems to have demonstrated it, but further than this it has been claimed that it has more than a mere temporary effect in neuralgia. As a local tissue stimulant and a retardant of bacterial activity, its usefulness seems to be assured by Dr. White's experience, while its possibilities in reducing temperature are self-evident. The medical and surgical utilities of this agent are as yet only partially tested, but from what has thus far been shown, its future is apparently a promising one. The facilities for its production have so far been limited mainly to one locality, but if the expectations aroused are realized, which we believe doubtful only to a certain extent, we may expect to see its manufacture widely extended.

HUMBUG AGAINST HUMBUG.

Chicago has been having a very refreshing exposé of the doings of Dowie and his followers during the past two or three weeks. The newspapers have been investigating the sect and have shown that this flourishing crowd has been working its followers and its victims unmercifully. While these revelations have not divulged anything that the members of the profession did not know, it has opened the eyes of the citizens to such an extent that Dowie will probably find it too hot to remain in Chicago. This note, however, is written to call attention to the fact that the "Christian Scientists" have become aware of the fact that the exposé of religious (?) healing might have a bad effect on them, and they have organized a society for the prevention of malpractice in spiritual healing. This amusing development reminds one very much of the thief-catch-thief idea. Just where the difference between Dowieism and Eddyism comes in is not quite easy for us to see. Possibly the followers of Mrs. Eddy have been a little more circumspect in their financial methods, although this is not so extraordinarily self-evident. Another development of the week is the reported "conversion" of Schweinfurth to Eddyism. This fellow, a few years ago, had nearly as large a following as Dowie now has, which promised to develop into a wonderful sect if his actions toward some of his female followers had not aroused the newspapers to show him up. Schweinfurth claimed, if we remember rightly, to be the Christ, and his place he called "Heaven," and it will be interesting to observe what reception he obtains in the major religious-medical sect. The present move of the "Christian Scientists" is a suspicious one in that it appears to be an attempt to exploit their quasi recognition in the Illinois medical practice act. We trust that the authorities will be in no way off their guard, and it is believed they will not. "Christian Science" is in need of as full a dose of legal treatment as is Dowieism itself.

EMPLOYMENT EXCLUSIVELY OF NUTRIENT ENEMATA.

There are times and conditions amid which it is highly desirable to afford rest to the stomach, and perhaps also to the upper bowel, and to avoid the administration of food by the usual channels. Subcutaneous feeding has not proved entirely practicable and at best its field of usefulness can only be limited. The use of the lower bowel for this purpose is attended with certain well-known recognized difficulties and it has not been extensively followed. Of late, however, numerous reports of the administration of nourishment by the rectum have found their way into literature exclusively, and Ross' details the plan of procedure pursued successfully in Ewald's service at the Augusta Hospital of Berlin. Absolute rest in bed is required of all patients subjected to the treatment. In the morning a cleansing enema is given, after the lapse of an hour the first nutrient injection and in the course of the day two further nutrient injections. A soft, vulcanite rubber tube is used, through which, with the patient in the lateral decubitus, the food is slowly injected as high as possible with gentle pressure by means of a syringe. Each enema consists of 250 c.c. of milk, the yolk of an egg, a small quan-

ty of table salt, a small amount of flour and a moderate quantity of red wine, the daily amount reaching about 800 c.c. Pulse and temperature are carefully observed and this treatment is carried out for six days and occasionally longer. The mode of procedure has been successfully pursued in the treatment of diseases of both stomach and bowel, such as gastric ulcer and erosion, with or without hematemesis, gastroenterorrhoea, gastric dilatation and atony, acute and chronic, diarrhea, and in some cases of pulmonary tuberculosis and of chlorosis. When thirst or collapse is marked, physiologic salt solution may be injected into the bowel or beneath the skin. It was found that from 30 to 95 per cent. of the nutrient substances injected was absorbed. It is important that the amount injected be not too large and that the injections be not repeated too frequently and that they be given by competent persons. A small amount of opium may be added if necessary to insure retention. After the sixth day, if all goes well, the patient is put on a milk diet for a week. The milk, cooled, is given at first with a teaspoon, 250 c.c. on the first day, 500 c.c. on the second, and so on, in gradually increasing amounts up to 1500 c.c. At the end of this time purée of potato, and chopped or ground meat may be added; and later light pastry. In the fourth and fifth weeks the diet may be still further enlarged, avoiding alcohol, spices, and tough fibrous vegetables.

Medical News.

DR. W. L. BALLENGER, Chicago, has returned from London, where he went to attend the International Congress of Otologists.

BY THE WILL of the late Dr. Chas. J. Stillé of the University of Pennsylvania, the department of political economy of Yale is to receive \$75,000.

IT IS STATED that the Church Missionary Society of England has received a report stating that 40,000 persons have died of famine on the east coast of Africa.

THE CHAIR of pathology in the University of St. Andrews, Aberdeen, has been filled by the election of Dr. Lewis H. Sutherland of Glasgow, assistant to the late Professor Coates.

DR. E. H. STARLING, F. R. S., lecturer on physiology at Guys' Hospital, has been appointed to the chair of physiology in University College, London, left vacant by Professor Schafer.

THE GOVERNORS of the Toronto Western Hospital have just completed the purchase of the McDonell property on Bathurst St., comprising several acres, and will at once begin the erection of a new structure.

DR. LISTON H. MONTGOMERY sailed from New York City, August 13, on the *Noordland*, for Brussels, to attend the forthcoming international conference for prophylaxis of syphilis and venereal diseases.

ANOTHER Dowie victim is a child of eleven years, of Chicago, who died August 27. The inquest showed that death was due to hydrocephalus. "Elder" Dinius, who had charge of the case, escaped with a censure.

DRS. N. SENN and D. R. Brower, Chicago, have returned from the Hawaiian Islands. An interesting letter from Dr. Brower relating to the Islands, and especially to the lepers there, will be found in the correspondence columns.

AN EPIDEMIC of diphtheria is reported in the northern section of Baltimore, Md., thirty-one cases to date. Dr. Jones, health officer, has secured a large amount of anti-toxin, and is now immunizing affected families and all who have been exposed.

ADVICES to the press state that yellow fever is still spreading in Tuxpan, Mexico, and that on an average ten deaths occur daily. The city of Tampico has taken active steps toward preventing its introduction into that territory.

Dr. McWILLIAMS, Thamesford, Ont., has reported a case of hydrophobia to the Provincial Board of Health, and since then three or four more cases have developed. All of whom will be immediately sent to the Pasteur Institute in New York City.

Dr. F. R. WALTERS, physician of the North-London Hospital for Consumptives, describes the Massachusetts State Hospital for Consumptive and Tuberculous Patients in the *Lancet* of August 19, a page of illustrations accompanying the article.

AT THE county branch of the Manhattan State Hospital for the Insane, N. Y., one male patient was recently killed by another. The men had both been considered harmless, and one was employed in the field grubbing roots when seized with the murderous impulse.

THE AUXILIARY cruiser *Panther*, with provisions and supplies aggregating \$50,000, left Philadelphia on the 23d inst. destined for Porto Rico. It is also stated that the Government will on September 1, dispatch the transport *Wright* from Baltimore, with supplies also destined for that destitute country.

PROF. ROBERT BUNSEN, the noted scientist of Heidelberg, is dead. Professor Bunsen devoted much of his life to analysis of gas, of mineral waters, to the phenomena attending combustion, to stellar chemistry, and was the founder of spectrum analysis. His name is a household word through the burner which bears his name.

Dr. MACNAUGHTON JONES, London, president of the British Gynecological Society, tendered a dinner to some of the members of the International Otological Congress on August 10. Among those present from this country at the dinner were Dr. Barkan, San Francisco; Dr. Dench, New York; Dr. Knapp, New York; Dr. Moore Lindsay, Salt Lake City.

THE MEDICAL faculty of McGill University, Montreal, will commence the session of 1899-1900 with two additional professorships, Dr. T. J. W. Burgess having been appointed to the chair of mental diseases, and Dr. C. T. Martin to the assistant position of classic medicine. Both positions were created at a recent meeting of the corporation of the University. The new professors are both graduates of McGill.

NEW YORK CITY is having trouble in regard to the water-supply of the city passing into the hands of a company, similar to that which occurred recently in Philadelphia, and resolutions have been passed opposing the execution of the proposed contract between the city and a private company, and advocating the continuance of the present policy of municipal ownership in operation of all the city's water-supply.

ANOTHER death attributed to "Christian Science" treatment is reported from Needham, Mass., in the case of a child named James Van Alst Hedenberg. The child became ill with dysentery August 1, and died August 18. The case has attracted considerable interest on the part of the physicians of Needham, and it is

reported that some action will be taken in order to apprehend the guilty party who in this case offers the excuse that she did all she could.

A REPORT of the quarterly examinations, held by the Illinois State Board of Health, August 1 to 4, shows that the following institutions were represented: Barnes Medical College, Beaumont Medical College, and the College of Physicians and Surgeons, St. Louis, Mo.; Northwestern University Woman's Medical College, Chicago, and the University of Erlangen, Germany. The candidates from these institutions all passed.

THE PLAGUE, according to the *British Medical Journal*, August 19, is now officially declared present in Oporto, Portugal, and in Mauritius 40 cases with 32 deaths occurred during the week preceding the report. Reports from Alexandria, Egypt, August 13, show that after a week's interval one fatal case occurred on August 10, and 3 new cases and 2 deaths during the week ending August 13. In Hongkong the number of new cases during the week ending August 14 was 20, with 23 deaths.

THE BOARD OF HEALTH of San Juan, Porto Rico, on August 18 stated that the number of people killed during the recent severe storm in that country was 1973; missing, 1000; houses destroyed, 6421; persons homeless, 22,046; cities in need of physicians, drugs, and hospitals, Caguas, Yabucoa, Maunabo, Utuado, Coamo and Corosal. It is estimated that 2500 persons were killed at Ponce, and that 2000 are still missing. In consequence of the putrefaction of bodies in Arroyo, typhus fever has developed.

PRESS dispatches, dated Liverpool, August 21, state that a cablegram has been received by the Liverpool School of Tropical Diseases, from Major Ross, stating that the malarial mosquito has been found. Major Ross was recently sent by the above-named school to Sierra Leone or the "white man's grave" in Africa, in order to determine the casual relationship existing between the mosquito and malaria. It is reported that the British government will also send out a force of scientists to assist Dr. Ross.

HEALTH OFFICER DOTY, New York City, has officially declared that in view of the appearance of the bubonic plague in Portugal and Italy, the New York Quarantine is fully prepared to prevent its introduction into this country, should any cases arrive on any incoming vessels. The agents for the two steamship lines between New York and Portugal have agreed that from now on, until all danger is past and the disease declared extinct there, no passengers whatever will be carried here by their lines from points in Portugal.

AN EPIDEMIC of typhoid fever is reported from the town of Woodstock, Western Ontario. So far, some twenty odd cases have been reported to the medical health officer, Dr. T. G. Rice, who attributes the prevalence of the disease to the unsatisfactory condition of the wells in that town. Dead toads and other refuse have been allowed to accumulate in many of these wells, and in one, where a child one and a half years of age died from the disease, Dr. Rice reports that no less than a dozen dead toads were found.

FROM OUR foreign exchanges we learn that the Germans refrained from participating in the International Congress of Gynecology and Obstetrics which opened at Amsterdam, August 8, on account of hostility to the president, Prof. Hektor Treub, who spoke so disparagingly of German science on the occasion of Professor Döderlein's call to Groningen, two years ago. Even those who had accepted and whose addresses had been

published, remained away, thus depriving the Congress of its strictly international character. President Treub's address was in French, to which he added a summary, repeating it in turn in English, Italian and Dutch.

As a result of the physical examination made of the soldiers composing the Tenth Regiment of Pennsylvania, who have recently returned from the Philippines, the United States officers in charge at San Francisco announce that there were but few soldiers who were un-sound as a result of the hardships in those islands.

A DOMESTIC, 22 years of age, in Philadelphia, under the influence of bromid of ethyl for the extraction of a tooth, recently died within thirty seconds after the anesthetic had begun to be administered. It is stated that the drug was given in the usual manner, and that the proper precautions had been taken.

EXTENSIVE preparations have been made for the entertainment of the throng of people who will attend the G. A. R. encampment to be held next week in Philadelphia. In order to render proper protection a medical corps consisting of 125 physicians has been organized to attend those who fall ill during the festivities. The members of the committee are: Dr. Lewis C. Wessels; Dr. A. W. Hendricks; Dr. W. H. Zeigler; Dr. W. H. Hult; Dr. W. Batt and Dr. W. W. Lamb. Chief Surgeon T. H. Andrews will be medical director, assisted by Dr. A. H. Hulshizer.

THEY DO things scientifically out in Falls City, Neb. A man there, on August 22, criminally assaulted a little girl, and was quickly arrested and placed in jail; not, however, before a crowd of would-be avengers had tried and failed to get the prisoner away from the officers. Along in the small hours of the morning, several hundred men got together, marched to the jail, broke in the doors, and one of the number—"perhaps a physician," the newspapers have it—"performed a surgical operation which will prevent the prisoner from committing any more such crimes."

WHILE EVERY effort is being made in this country to raise the standard preliminary to a medical education, the French have lowered theirs, and by a recent decree, are to admit graduates from the so-called "modern" course—chemistry, physics and natural history—and no longer exact the diploma of the "classic" course—letters and philosophy. A similar movement has been agitated in Germany, but is frowned on in official circles, which even refuse to accept the classic diplomas of the Swiss universities, on account of the fact that Greek is optional and may be substituted by a modern language.

THE CALIFORNIA ASYLUM TROUBLE.—The investigation into the condition of affairs at the State Lunatic Asylum at Agnews, California, previously mentioned in the JOURNAL, and resulting from the finding of a female patient pregnant, culminated on August 23 in the dismissal of the superintendent of the Asylum, Dr. Sponogle. Governor Gage delivered a lengthy report on the investigation, with its findings, and his own investigation of the evidence submitted. His report says in part: "I have carefully considered all the testimony taken on the 12th and 13th days of July of this year, relating to the investigation of affairs at the State Hospital at Agnews, especially having reference to the unfortunate female patient known as Mrs. Chaffers, and have reached the conclusion therefrom that Dr. Sponogle is and has been culpably negligent in the premises, and from the testimony already taken and also from other investigations had, I have reached the further conclusion that he is and has been a person of immoral character for years,

and should be dismissed forthwith; should be deposed on the ground of incompetency and also on the ground of immorality of character and general unfitness. Such a startling and infamous outrage as has been permitted to fall on this helpless patient is also just cause for the dismissal of both of the other physicians, at least on the ground of insufficient care in the conduct of their offices." The report also alleges other crimes against Dr. Sponogle, who has announced through his attorney, his refusal to retire from his position and his intention to file a suit for \$100,000 damages, for libel and defamation of character, against Governor Gage.

Correspondence.

Hawaiian Islands, Climate, Leprosy, Insanity, Crime.

(Special Correspondence.)

(On Board Steamship *Australia*, en route to San Francisco.)

I left Chicago on July 7, and in three days reached San Francisco, and there met Prof. N. Senn, who had just completed, with great eclat, the Lane lectures at the Cooper Medical College. President Lane of this college, with an unheard of generosity, gives \$2,000 a year for a course of ten lectures, that are intended, first, for the students of the Medical College, and second, for the practitioners of the coast generally. Dr. Senn's lectures were on military and emergency surgery, and were the fourth course. The first course was given by Macewen of Glasgow, on "Cerebral Surgery," the second by Heath of London, on "Practice of Surgery in England," and the third by Clifford, on the "Heart." The course given by Dr. Senn gathered together a much greater number of practitioners than any of the others, and was received with great enthusiasm. The great surgeon added to his laurels by these brilliant lectures. He is now engaged in making them the basis of a new book on surgery.

We left San Francisco on the *Mariposa*, and on the seventh day landed in Honolulu, on Oahu, not the largest, but the most populous of the eight populated islands. Just before entering, our steamer was boarded by Dr. F. R. Day, the port physician, an active member of the Hawaiian Board of Health, and a successful practitioner. But having no sickness on board we were permitted to land without delay. These Hawaiian Islands are a remarkable group; they are in the tropics, and yet the maximum temperature in the shade in Honolulu at sea-level is only 83 F. in August, and the minimum 62.9 F. in February. This remarkable condition is due, probably, to two causes: 1, the constant trade winds from the northeast, bringing coolness from Alaska; and 2, the small size of the islands, the temperature of the ocean being about 80 F. You can have almost any climate you desire: wet or dry, by getting on the windward or leeward side of the islands; warm or cool, by staying at sea-level or ascending the mountains. We spent a week on Molokai Island at an elevation of 1500 feet, and slept under blankets every night.

There was great excitement in Honolulu when we arrived, on account of the recent eruption of a volcano on the Island of Hawaii, and catching the enthusiasm, we engaged passage by the first steamer for this island—the steamer *Kinau*, a little tub, with a capacity for rolling and pitching that exceeded by far any previous experience of either of us, but by maintaining the recumbent posture most of the time I got there without "feeding the fishes." Dr. Senn has had no personal experience with mal de mer, and really enjoyed the trip. Hilo, the principal port of the island, is about 200 miles southwest of Honolulu. The rainfall on this island is greater than that on Oahu, and consequently vegetation is more luxuriant, as it is more tropical. The trip to the volcano was over thirty-one miles of a superb mountain road, through a luxuriant tropical

forest, with here and there a clearing for a sugar or coffee plantation, or a picturesque cottage, surrounded by tree ferns, tropical fruit trees and flowering shrubs. The eruption had ceased before we got there, but we could see the new crater and new lava from the Volcano House, and contented ourselves with visiting the almost extinct crater of Kilauea, the largest, but one, on the island, if not in the world. It is almost circular in form and about three miles in diameter; there is much smoldering fire beneath the lava and considerable steam and sulphur fumes constantly escaping from one portion of it. They have utilized the sulphur fumes at the Volcano House for bathing purposes.

One of the most interesting studies of the islands is leprosy. This disease was introduced from China in 1853, and has spread with frightful rapidity among the natives; somewhat among the other races, but to a very trilling extent among the Anglo-Saxons. The want of resistance to this bacillus, among the Hawaiians, may be due to their almost universal infection by syphilis. The government began the work of segregating them about thirty years ago, selecting for that place a tongue of land on the Island of Molokai, ten miles long and one mile in breadth, bounded by the ocean on one side and a perpendicular precipice 2000 to 3000 feet high on the land side. The soil is fertile, water abundant and pure, and no better place could be found in the country for a leper asylum. The lepers are the wards of the government, and are generously cared for. Numerous cottages have been built for their use and no expense has been spared in having them organize comfortable homes of their own, the property reverting to the government at their death. Every inducement is offered, even to money prizes, to have them cultivate trees, flowers, vegetables, and excellent pasturage is furnished for horses and cows. They are furnished rations, clothing, bedding and, indeed, every thing necessary for their comfort—all this at a cost to the islands of \$100,000 annually. There are now about 1200 lepers at the settlement, only six of them whites. The total population of the islands is 109,000, so that the cost is about \$1 for every inhabitant. The total native population is about 31,000, hence deducting about 200 from the population of the settlement, for those who are not natives, leaves a proportion of 1 to about every 31 of those that are segregated, and they have not been ferreted out. This must be by all odds the largest proportion of leprosy to total population of any nation. There are on the settlement two homes provided by philanthropic individuals, one for orphan girls and helpless women, the other for orphan boys and helpless men; they are in charge of Roman Catholic sisters and lay brothers, who are doing admirably a most self-sacrificing work. It is interesting to note that although this work has been going on for about fifteen years, none of these good people have become infected. One government physician, Dr. Richard Oliver, lives in the settlement, and fills this lonely post with skill and fidelity. He has been there about eight years, and has also escaped infection. The only precaution these faithful workers seem to take is careful cleanliness, especially of the hands. The care of the lepers is directly under the Board of Health, the physicians of which are Drs. F. R. Day, C. B. Wood, N. B. Emerson, R. P. Myers, and H. W. Howard; assisting them are the various government physicians of the islands, of whom there are from three to six on each island. These government physicians, the sheriffs and police find the suspected cases and send them for study and examination to the receiving station, about four miles from Honolulu; here the above medical members of the Board of Health meet and diagnose each case. The examination is very thorough and includes not only the clinical history and physical examination, but in all doubtful cases a bacteriologic study as well. If the case is determined to be a leper, he goes to the settlement as soon as possible; if there is doubt he is called a "suspect" and either remains at the station for further study or is permitted his liberty, but required to report to the government physician at

least once a month, when he is before the board again if necessary. I had the privilege of being present at one of these examinations, and can testify to the care and scientific skill displayed. I was surprised to find that several of the cases had been lepers for two or three years, due to the fact that so soon as a native suspects that he has the disease he hides himself, and his family and friends, having no fear of the disease, aid without hesitation. Leprosy is slowly diminishing. The rate would be more rapid if all cases could be segregated earlier. The average duration of life of the tubercular form is about seven years, of the neurotic form about twenty.

A free discussion of the subject with these several physicians, and my own observation, lead up to the following: The period of incubation is uncertain, probably not less than four years. Heredity diminishes resistance, but alone can not produce the disease. The disease is the result of inoculation. There is a home for the girls of leprous parents at Honolulu, that has been in operation for fifteen years; twenty-five have been under observation for this period and no case has developed and, indeed, in no inmate of shorter duration. The youngest child who has become leprous was 4 years old. Direct evidence in favor of the theory of inoculation are two cases, one, that of a man condemned for murder, who was inoculated in the arm and in due time developed the tubercular form of the disease, in that arm, and died a leper. In this case there has been some contention as to heredity, but I think it well established that while there is and was leprosy in collateral branches, yet there has been none among his direct progenitors. The other is the case of a German, who, with a varicose ulcer, slept in a bed, on several occasions, that had been occupied by a leper with the tuberculous form; after about eight years he developed the disease in that limb and died a leper.

Dr. L. F. Alvarez, the accomplished bacteriologist of the Board of Health, is earnestly endeavoring to procure pure cultures of the bacillus of Hansen and to produce the disease experimentally. He thinks he has made some impression on the mongoose, an animal imported to destroy the rats in Hawaii, but further inoculations are necessary. The very close morphologic relation of this bacillus to that of tuberculosis is interesting, being so near like it that an expert is necessary to differentiate. Yet their natural history is different.

The palliative treatment found most beneficial is hot baths, tonics, iron, quinin and strychnin, intestinal antiseptics, salad especially, and an abundance of easily digestible and nutritious food. I have no doubt the native's diet, consisting almost entirely of "poi," a preparation made from the taro, a plant much like arrow-root, and fish, usually raw, has something to do with his want of resistance to the bacillus lepre. There is much said in Honolulu of the benefits to be derived from the baths of Kusatsu Hot Springs, Japan. Sulphur is the principal ingredient, in the form of sulphates of iron, aluminium, calcium, magnesium, soda and potash, with a large percentage of free sulphuric and hydrochloric acids. This water, artificially prepared at the settlement, has been found no better than ordinary hot water. The springs are situated in the mountains in a very salubrious climate, which doubtless has much to do with the benefits derived—no cases have been cured.

Our recent acquisition of territory, and our close commercial relations with China and Japan make the question of leprosy one of increasing importance.

We visited the Oahu Insane Asylum with Dr. F. H. Humphris, the acting superintendent, and found there 89 males and 23 females; the excess of males is quite surprising. We found every patient out of doors under the shade trees, or on verandas; such is the climate that this is possible every day of the year, artificial heat never being necessary. Of the numbers above given, 35 were Hawaiians, 33 Chinese, 3 American. The number of Chinese on the island almost equals the number of natives. Paresis, paranoia and suicides are never

found among the natives, and the types they do present are not very active. The buildings, ground and general management deserve commendation.

The great questions of criminology must be considered more seriously by the people of the islands as elsewhere, for here, also crime is increasing. I visited, with Dr. Chas. B. Cooper, the Oahu Prison, the penitentiary of the islands. We found there 155 males and 1 female, who were as well taken care of as possible. I have no doubt they will soon erect a new building and arrange for the better employment of these delinquents. From the last report of the Attorney-General of the Republic, there were in two years 19,177 arrests and 13,344 convictions. This is no small proportion for a population of only 109,000. The total number of prisoners in jails was 1325 during the period of 1896-1897; of these 937 were for misdemeanors, the principal being drunkenness, gambling and possession of opium. The crimes against property and persons number 288, of which the chief were larceny, assault with weapons, and distilling liquor. The number of criminal cases before the Supreme and Circuit Courts has increased in ten years from 165 to 837.

We left the islands with great reluctance, and will ever be mindful of the generous hospitality that we met on every side, well satisfied that in these gems of the Pacific we have a great acquisition, and one in which most important racial problems are in process of solution, regretting that without any prophetic power one can easily see the passing of the Hawaiian.

D. R. BROWER, M.D.

The Government Hospital for the Insane.

NEW YORK CITY, Aug. 20, 1899.

To the Editor:—Notwithstanding the fact of numerous applicants for the post of superintendent, the vacancy in the Government Hospital for the Insane yet awaits a successor to the late incumbent whose death occurred several months ago. We learn from Washington that the delay in making the appointment is a matter of no small concern among those interested, who are chiefly the applicants for the position, the hospital attendants and the inmates themselves, many of whom, though of unsound mind, have enough intelligence to feel and express a lively interest in the matter.

That this institution, so well endowed by the Government, and having so many possibilities in the way of clinical material that might be utilized for the advancement of science, should have a competent specialist in mental and nervous diseases as its medical head is a consummation devoutly to be wished. We have no unkind remarks of any sort to make concerning superintendents of insane asylums, many of whom are among our best friends, but candor forces us to admit that as a class they have been criticized for old fogyism and non-progressive-ness. At a meeting of the AMERICAN MEDICAL ASSOCIATION, a few years ago, it was the general agreement of the speakers who debated the question that when a member of our profession becomes the superintendent of an insane asylum he ceases to be a physician, his multifarious duties obliging him to be a farmer, a politician, a gardener, jailer, boarding-house keeper, disbursing officer, and the like. Besides, it does not appear that any one ever connected with an insane asylum has made any important discovery regarding the brain or nervous system, nor has any one of them written a book of importance, or done anything to improve the condition of the insane; all such discoveries and improvements having originated with persons unconnected with asylums, just as advances in army sanitation and in ordnance have originated with civilians.

Despite these facts, it is a common fallacy among the populace, and even among lawyers otherwise well informed, that a superintendent of an asylum must necessarily know a great deal about insanity, and his testimony is accordingly often sought in courts where a medicolegal question is being considered; but as a matter of truth, most of them are profoundly in-

nocent of any great erudition in psychiatry or neurology, and lack the accuracy, credibility, and skill of the real expert. On this subject a high authority compares the janitor of a medical school, who for years sees cadavers come into the dissecting-room by the hundred, but does not know as much about anatomy as any intelligent medical student who has dissected but half the body. It is therefore not the great number of cases of insanity that one sees, but rather the amount of intelligent study and observation brought to bear on a few cases that make one an expert.

It is probably owing to the false system of selection, more than to other causes, that the services of incompetent men are secured in asylums. Few of them, before appointment, have had either practical or theoretic experience in the treatment of mental or nervous disease, while those who have had asylum experience, having seen chronic cases only, are totally unfamiliar with the incipient stages of insanity and are uninformed in contemporary neurology. Hence, it is not surprising that a superintendent of an asylum adds luster to the profession when on the witness stand, in a matter of life and death, he solemnly tells the court there is no such thing as nocturnal epilepsy; that quinia has no effect on the brain; that heredity is not a factor in insanity; and that there is no such thing as hysteric insanity, or he would have heard of it in his thirty years of asylum experience.

An average medical student in his first course would make a better showing than this, although he may not know that at least fifty treatises have been written on hysteric insanity; that it is also mentioned in Le Grand Du Sault's "Legal Medicine," and in Campbell Clark's "Mental Diseases," not to mention the fact that numerous cases are treated by neurologists.

Arraignment, we are aware, does not include the whole class of whom we write, for judicial fairness obliges us to say there are notable exceptions, but to particularize them would be invidious and foreign to the present purpose, which is merely to express condemnation of a vicious system of appointment that secures incompetent men.

We trust that President McKinley, in making a selection, will secure the services of some competent and up-to-date neurologist who has the confidence and support of his colleagues. That there are such among the members of the American Neurological Association, we all know, but it is a matter of grave doubt whether the small salary attached to the position is an inducement that would tempt any specialist of the kind with even a fair practice.

Locomotor Ataxia Has No Relation With Syphilis.

NEW YORK CITY, August 25, 1899.

To the Editor:—The German correspondent of the *Phila. Med. Jour.*, August 19, page 333, speaking of Heidelberg clinics and the dread nature of syphilis, says: "Professor Erb, from his researches in one thousand cases, believes that 'tabes' (locomotor ataxia) is almost without exception due to syphilis."

How would Professor Erb explain the fact, that in Japan, where syphilis has scourged the population for 1300 years, locomotor ataxia is unknown? In a venereal clinic of ten thousand cases I did not find a single case of locomotor ataxia. Nor did I meet a native physician who knew of such a disease as "tabes."

Opposed to this opinion of Professor Erb, in Germany there stands that of Professor Virchow, who believes that syphilis has no relation whatever to locomotor ataxia.

ALBERT S. ASHMEAD, M. D.

[Apropos of the above from Dr. Ashmead, we quote the following abstract from the August number of the *Journal of Nervous and Mental Disease*, referring to a paper on "Tabes Dorsalis and Syphilis," by A. Guttmann (*Zeitschr. f. Klin. Med.*, 35, 1898, p. 212): "The reaction, evident of recent years, against the view of the etiological significance of syphilis in

tabes, is made more pronounced in the statistics of the author. In all some 136 cases of tabes were closely studied, and of these, deducting six doubtful cases, 28.6 per cent. had had syphilis, while 71.4 per cent. were distinctly nonsyphilitic." The author also considers the evidence derived from the fruitfulness of syphilitic medication, and gives his approval of the general methods used to strengthen the body—baths, massage and electricity."—[Ed.]

"The Spooner Bill."

MILWAUKEE, Wis., August 26, 1899.

To the Editor:—In a communication from Dr. H. M. Bracken of Minneapolis, in the August 5 number of the JOURNAL, appears the statement that, at the annual meeting of the Conference of State and Provincial Boards of Health of North America, held at Richmond, Va., "as a matter of fact there were probably not more than twenty voters in the room when an indorsement of the Spooner bill was called for." This statement gives the impression that the Spooner bill was indorsed at this Conference by a very small faction. The facts are, however, that by actual count there were thirty-six in the room at the time the vote was taken, and when it is borne in mind that those thirty-six represented about twenty or more states in the Union, the vote was more significant than would appear by Dr. Bracken's statement.

The positive statement in the communication of Dr. Bracken: that "the Spooner bill will never give an organization established on as firm a foundation as the army or navy, or the marine-hospital service" strikes one with astonishment when one considers its source as against the combined intelligence of the AMERICAN MEDICAL ASSOCIATION, the largest medical organization in the country, and the American Public Health Association, the largest sanitary body in the world, and the New York Academy of Medicine, together with many state medical societies and the great majority of leading sanitarians of the country.

Respectfully,

U. O. B. WINGATE, M.D.

London.

(From Our Regular Correspondent.)

LONDON, Aug. 15, 1899.

BRITISH MEDICAL ASSOCIATION.—Whatever benefit the recent unprecedented hot weather may have been to the harvest, it sadly interfered with the success of the sixty-seventh annual meeting of the British Medical Association at Portsmouth. The most hospitable and elaborate arrangements had been made by the local committee, but of the 1890 members anticipated hardly 800 turned up, and the Isle of Wight and the New Forest saw more of a third of these than did the sections. And no wonder, for the weather was stiflingly hot. The president's address was delivered to a fair audience, largely of townspeople; the address in medicine had about 200 hearers—at the beginning; the address in surgery had hardly 75, and the final general meeting could not have secured a quorum if two dozen were the minimum. The medical and surgical sections were, as usual, the best attended, with about 150 to 200 in each, but the oft-denounced "lack of interest in scientific medicine" brought the attendance at the section on pathology down to an average of about fifteen, and in that of anatomy and physiology there were at one painful epoch precisely three persons present in addition to the chairman and the reader of the paper. These facts are mentioned not in any fault-finding or even critical spirit, for considering the weather and the abominable ventilation of the rooms, with reference to the limits of human endurance, the attendances were excellent, but simply to console those of our own brethren who think the American profession is "going to the dogs," because the excursions and entertainments seem to draw more attention and attendance than the scientific sessions of the A. M. A. Even the English profession, with its high standards and solemn sense of duty and

dignity, is human like the rest of us—and we like it all the better for it.

A curious touch of picturesqueness and ceremony was given to the general meetings by the custom observed by the president of the Association and the deliverers of the addresses, of appearing in the scarlet gowns of their university or college degrees.

The rôle played by the general meetings was certainly much less than our own annual gatherings, the real business of the Association being evidently transacted by the powerful, well-organized General Medical Council. After the addresses had been delivered, the "business" matters were often discussed by a mere handful of members, there being almost as many on the platform as in the body of the hall, at times. There seems to be a general impression that the Council shapes the ends of the Association about as it chooses, let the members roughen them as they will, and so this gentle amusement is left to a mere handful of hopeful enthusiasts. A vote of censure was passed on a certain action of the Council at this meeting by a vote of 16 to 5, and some 800 members were registered as in attendance.

The management of the programs in the sections was excellent, most of the papers were mercifully short and to the point, and the discussions followed suit. Those who ran over their time were promptly checked, either by the chairman or by a most unmistakable change in the atmosphere at the meeting. There was no attempt to lay out a complete program for the four days, the list of papers for each day being issued early that morning, and those who were to read being notified the evening before. There was the usual overcrop of papers, but by grouping together papers on kindred subjects for simultaneous discussion, or introducing epitomes of them into such of the big discussions as they were germane to, the docket was cleverly cleared in nearly all sections. The great discussions on set subjects were the chief centers of interest and attendance, as with us. No better way of getting a clear and illuminating working conception of a subject or problem, from all points of view, has yet been invented. Their only fault is that they flatten the separate papers into a hopeless background, and the object of such meetings is to encourage original work as well as to diffuse information and broaden the view of the profession.

VACCINATION.—The Leicester Board of Guardians has decided not to appeal but go manfully to prison, sooner than comply with the mandamus and appoint a vaccination officer, as referred to previously in these columns.

Canada.

(From Our Regular Correspondent.)

TORONTO, Aug. 26, 1899.

CEREBROSPINAL MENINGITIS IN ONTARIO.—The bacteriologist of the Provincial Board of Health, Dr. John J. Mackenzie, in his report before that body, deals with this subject. The laboratory during the first four months of the year, received four specimens from cases of suspected cerebrospinal meningitis. After dwelling on the characteristic differences between the diplococcus of pneumonia and the specific organism of cerebrospinal meningitis, the diplococcus intracellularis meningitidis, and the appearance of epidemics within the past year in Boston, Baltimore and Philadelphia, he states the first specimen was received on March 20, 1899. To quote from the report: "The specimen was from a fatal case with an illness of about forty-eight hours. The specimen consisted of about 25 c.c. of bloody cerebrospinal fluid, with a white sediment and containing white flocculi. On centrifuging it separated into a layer of reddish sediment with a clear blood-stained fluid above. A number of cultures were made from the material on different media, but they all remained sterile. Stained preparation showed that the sediment consisted of red blood-corpuscles, polynuclear leucocytes and large mononuclear leucocytes. Certain of the polynuclear leucocytes contained diplococci some-

what flattened 1.0 m. by 0.75 m. in pairs. These organisms did not take the Gram stain. Two grey mice were inoculated, one subcutaneously with .5 c.c. of the fluid, the other intraperitoneally with .25 c.c. of the same material. Both animals lived, the second showing slight illness for a day. The germs were apparently dead when received. "Within a month, three other specimens were received from the same county; but in no case could a positive diagnosis be made, although in one the same intracellular diplococci were found." Dr. Mackenzie emphasizes the importance of physicians throughout the Province making thorough diagnoses in these cases in order to prevent the possibility of any epidemic such as occurred in Boston and elsewhere.

THE GRASS BACILLUS.—The same bacteriologist has also lately been making investigations into the character of a bacillus found in grass, resembling the tubercle bacillus. He states in the same report, this bacillus was first described by Moeller, but that its first recognition was due to Rabinowitch, in butter. Dr. Mackenzie found this organism present in different specimens of hay, and from one succeeded in isolating it in pure culture. "Its growth in culture-media is not unlike that of the bacillus of tuberculosis except that it is much more luxuriant and rapid. It stains with ordinary tubercle stain, and in cover-glass preparations looks so like the tubercle bacillus as to give rise to doubt to one not well acquainted with the true form." He was able to demonstrate that its peculiar staining characters were due to a fatty envelope, as in the bacillus of tuberculosis. This fatty envelope can be readily dissolved off with alcohol, and on being boiled in the same medium the organism will not then take the peculiar stain. There is danger of confusing it with the tubercle bacillus in butter and milk.

STUDYING THE TENIA ECHINOCOCCUS IN MANITOBA.—Dr. Gordon Bell has been making experimental studies in the laboratory of the Manitoba Medical College. From Dr. Chown of the same city, Winnipeg, who had operated on the liver of a patient, the experimenter received a few hours after such operation, daughter hydatid cysts, which he fed to two dogs. Subsequently, after the lapse of five weeks, one of the dogs was killed, but either on account of the time being insufficient for the development of worms, or else because of the scolices being unable to obtain a hold—the animal being affected with an intestinal catarrh at the time, there was nothing whatever found. In the case of the other dog, nine weeks were allowed to elapse before the animal was killed and examined, when it was found that hundreds of mature tenia infested the lower part of the duodenum and upper part of the jejunum. Their appearance was that of delicate white filaments, ranging from 1/8 to 1/6 of an inch in length, the head being firmly planted in the villi of the intestine. They could not be dislodged under the force of a stream of water, and even after being placed in a solution of formalin, they still retained their hold. Viewed microscopically they consisted of four segments, the last one alone containing eggs, and in some of them the proscelox could be made out quite distinctly. Clear refractive granules were scattered throughout all the segments, including the head, but their significance not determined. This was the first instance of the mature tenia having been demonstrated in Manitoba, although hydatid cysts are more common there than in any other part of America. Still withal, there is no instance of a case having originated in this country, they being without exception imported from Iceland.

SEWAGE FARM AT MONTREAL.—Montreal is to have a sewage farm; and it is expected that the work, which is an experiment on the part of that city, will be fully completed by September 1. The plan, which is similar to that in several English and Continental cities, in Canton, Ohio; in Marlboro, Mass.; at the Asylum for the Insane in London, Ont., at the St. Laurent College and in St. Laurent, Jacques Cartier County, P.Q., consists in bringing the sewage waters on a field prepared especially to receive them. Then they are filtered through the earth, purified

and ultimately returned to their natural water-courses. In this case the natural water-course will be Back River. The farm comprises an area of ten acres, which will be used as a truck farm with thirty beds, 77x100 feet across, which will be employed for the purpose of raising melons, cauliflowers, cucumbers, etc. The tank-house will be twenty-four feet square, and the work of laying the pipes is now proceeding under the direction of the contractor. Nothing will be lost by this system; the waste separated from the water, by filtration, will become in turn fertilizer for the farm. The sewage will be passed through large eighteen-inch mains, and the water, filtering down through the earth, will then pass through perforated farm tiles laid three and one-half feet underground, covered over with one foot of coke. When completed the work will cost in the neighborhood of \$20,000.

Book Notices.

BOOKS AND PAMPHLETS RECEIVED.

Acknowledgement of all books received will be made in this column, and this will be deemed by us a full equivalent for those sending them. A selection from these volumes will be made for review as dictated by their merits, or in the interests of our readers.

INTERSTITIAL GINGIVITIS OR SO-CALLED PYORRHEA ALVEOLARIS. By Eugene S. Talbot, professor of Dental and Oral Surgery, Northwestern University, Etc. Octavo. Cloth. Pp. 192. Seventy-three illustrations. Philadelphia: The S. S. White Dental Mfg. Co. 1899.

TEXT-BOOK OF DISEASES OF THE NOSE AND THROAT. By D. Braden Kyle, M.D. Clinical Professor of Laryngology and Rhinology, Jefferson Medical College; Consulting Laryngologist, Rhinologist and Otologist, St. Agnes' Hospital; Bacteriologist to the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases, Etc. Octavo. Illustrated. Pp. 646. Price, Cloth, \$4.50; Sheep, \$5. Philadelphia: W. B. Saunders. 1899.

THE HYGIENE OF TRANSMISSIBLE DISEASES: THEIR CAUSATION, Modes of Dissemination and Methods of Prevention. By A. C. Abbott, M.D. Professor of Hygiene and Bacteriology, and Director of the Laboratory of Hygiene, University of Pennsylvania. Octavo. Cloth. Illustrated. Pp. 312. Price, \$2. Philadelphia: W. B. Saunders. 1899.

GENERAL PATHOLOGY, or the Science of the Cause, Nature and Course of the Pathologic Disturbances which occur in the living subject. By Dr. Ernst Ziegler, Professor of Pathologic Anatomy and of General Pathology of the University of Freiburg in Breisgau. Translated from The Ninth Revised German Edition, by Drs. Theo. Dunham, E. M. Foote, Philip H. Hiss, Jr., Walter B. James, Wm. G. Le Boutillier and Matthias Nicoll, Jr., New York, Dr. B. Meade Bolton of Philadelphia, and Drs. Leonard Woolsey Bacon, Jr., John S. Ely, and R. A. McDonnell, New Haven, Conn. Editor, Dr. Albert H. Buck of New York. Complete in one octavo volume of 621 pages, illustrated by 544 wood engravings in black and numerous colors, and lithographic plate. Extra muslin, \$5, net; brown sheep, \$5.75, net. New York: Wm. Wood & Co. 1899.

TRANSACTIONS OF THE AMERICAN MICROSCOPICAL SOCIETY. Edited by the Secretary. Twenty-first annual meeting held at Syracuse, New York, Aug. 30, 31 and Sept. 1, 1898. Volume XX. Octavo. Paper. Pp. 369. Lincoln, Neb.: Hunter Printing Co. 1899.

MIND AND BODY, HYPNOTISM AND SUGGESTION APPLIED IN THERAPEUTICS AND EDUCATION. By Alvan C. Halphide. Illustrated. Octavo. Cloth. Pp. 231. Chicago: Published by the Author. 1899.

SELECTED PAPERS ON STONE, PROSTATE AND OTHER URINARY DISORDERS. By Reginald Harrison, F.R.C.S. 8vo. Cloth. Pp. 190. Price, \$1.75. London: J. & A. Churchill. Philadelphia: P. Blakiston's Son & Co.

THE GROSS AND MINUTE ANATOMY OF THE CENTRAL NERVOUS SYSTEM. By H. C. Gordinier, A.M., M.D. Professor of Phys-

iology and of the Anatomy of the Nervous System in the Albany Medical College; with 48 full-page plates and 213 other illustrations, many of which are printed in colors, a large number being from original sources. Octavo. Price, net, \$6, cloth; \$7, sheep. Philadelphia: P. Blakiston's Son & Co. 1899.

ARCHIVES OF THE ROENTGEN RAY (formerly Archives of Skiagraphy). Edited by THOMAS MOORE, F.R.C.S., and Ernest Payne, M. A. (Cantab.). Nos. 3 and 4. Quarto. Illustrated. Price \$1 a part. London: The Rebmam Publishing Co. 1899. American Agent, W. B. Saunders, Philadelphia.

PRACTICAL ANATOMY, including a Special Section on the Fundamental Principles of Anatomy. Edited by W. T. Eckley, M. D., Professor of Anatomy in the College of Physicians and Surgeons, University of Illinois; Professor of Anatomy in the Northwestern University Dental School; Professor of Anatomy in the Chicago Clinical School, Etc. With 347 illustrations, many of which are in colors. Octavo. Price, \$3.50, net, cloth; \$4, net, oil-cloth. Philadelphia: P. Blakiston's Son & Co.

A TEXT-BOOK OF PHARMACOLOGY AND THERAPEUTICS, OR THE ACTION OF DRUGS IN HEALTH AND DISEASE. For the use of Students and Practitioners of Medicine. By Arthur R. Cushny, M.A., M.D., Aberd. Professor of Materia Medica and Therapeutics in the University of Michigan Medical Department, Ann Arbor. In one octavo volume of 728 pages, with 47 engravings. Cloth, \$3.75, net. Philadelphia and New York: Lea Brothers & Co. 1899.

INTERNATIONAL CLINICS: A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynecology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology and Dermatology, and Specially Prepared Articles on Treatment and Drugs, Etc. Edited by Judson Daland, M.D. Volume II, Ninth Series 1899. Octavo Cloth. Pp. 310. Philadelphia: J. B. Lippincott Co.

Deaths and Obituaries.

MAX THORNER, M.D., Cincinnati, Ohio, a graduate of the University of Munich, Germany, 1884, died suddenly August 26 at his home in Cincinnati. Dr. Thorner was 40 years of age, professor of clinical laryngology and otology in the Cincinnati College of Medicine and Surgery; laryngologist and aurist to the Cincinnati Hospital, and a member of the Cincinnati Academy of Medicine. AMERICAN MEDICAL ASSOCIATION, Ohio State Medical Society, and others. He was also at one time president of the Cincinnati Medical Society and was secretary of the section on otology at the first Pan-American Medical Congress. He was a Fellow, and in 1889 vice-president of the American Laryngological, Rhinological and Otological Society, and a Fellow of the Berlin Laryngological Society and the American Academy of Medicine. At a called meeting of the medical profession, August 28, on which occasion Dr. E. W. Mitchell, president of the Academy of Medicine of Cincinnati, presided, the following resolutions were adopted:

WHEREAS, The medical profession of Cincinnati having met on Monday, August 28, for the purpose of taking action on the death of Dr. Max Thorner, adopted the following resolutions:

In the death of Dr. Max Thorner the profession has suffered a severe loss. He was a man of eminent professional attainments and broad, progressive and generous character. He was a man of high ideals and constantly strove to attain the greatest possible professional skill. His devotion to the science of medicine was intense and disinterested, and in all his relations with his fellowmen his zeal for what was good and worthy distinguished him.

The profession has lost a beloved member and the public a citizen of probity, learning and industry.

The medical profession desires to extend to the bereaved family its sincerest sympathy.

T. V. FITZPATRICK,
PHILLIP ZENNER,
H. W. BETTMAN,
WM. C. HARRIS,
A. H. FREIBERG,

Committee.

Also at this meeting the following resolutions from the medical staff of the Cincinnati Hospital were read:

WHEREAS: We learn with profound regret of the death of our esteemed colleague, Dr. Max Thorner. Therefore be it

Resolved, That in the death of Dr. Thorner the Cincinnati Hospital has lost a very able and useful member of its medical staff. One whose conscientious and honorable conduct rendered his services especially valuable to the institution.

Resolved, That the members of the medical staff extend their sympathy to the family of the deceased in its sudden and untimely bereavement.

J. C. OLIVER,
G. A. FACKLER,
S. E. ALLEN,
Committee.
W. EDWARDS SCHENCK,
Secretary of Meeting.

JOHN J. LINSON, M.D., New York Medical College (now extinct), 1856, died of cardiac disease at Tarrytown, N. Y., August 27. He was a Civil War veteran, having served with the 6th New York Heavy Artillery, and was at one time surgeon of the provost marshal's office in his residential district. He leaves two daughters and four sons, one of them ex-Senator John J. Linson of Kingston, N. Y.

SAMUEL BROWN WYLLIE MCLEOD, M.D., died at his home in New York, August 23, after a brief illness, remotely attributable to an accidental fall from a trolley car. He was of Scottish ancestry, a son and a grandson of a clergyman, as well as a cousin of the late Dr. Cornelius R. Agnew. His birthplace was Galway, N. Y., and his entrance on a collegiate career began in 1849 in his 20th year, at the University of Pennsylvania, while his grandfather was both provost and professor of languages. After graduation in 1852 from the College of Physicians and Surgeons, New York, he went to Paris for the continuation of his studies. His life was full of medical and charitable activities, besides being identified with the theological seminary attached to the church over which his father presided. As a staunch member of the AMERICAN MEDICAL ASSOCIATION and a high official in many medical societies he was widely known to the profession. He was an authority on obstetrics and to a certain extent in medical jurisprudence.

J. PEMBERTON THOM, M.D., Baltimore, Md., died August 21, after an illness of six months. He was born in Culpeper County, Va., 71 years ago, and served gallantly throughout the Mexican War. He was graduated at Jefferson Medical College and entered the navy as surgeon and had been a member of the City Council and Speaker of the House of Delegates of Maryland. He was also one of the founders of the Hospital for the Women of Maryland. Dr. Thom retired from practice a number of years ago.

JOSEPH COBLENTZ, M.D., formerly of Reading, Pa., died, aged 72 years at Vaughn, Wash., August 6.

SAMUEL B. GILMORE, M.D., a graduate with the last medical class of the University of Pennsylvania, died in Philadelphia from typhoid fever, August 13, aged 23 years.

ALEXANDER CRAIG, M.D., Jefferson, 1865, died of apoplexy, aged 61 years, at his home in Columbia, Pa., August 17.

JAMES L. KORTRIGHT, M.D., College of Physicians and Surgeons, New York, 1881, formerly of Brooklyn, N.Y., died at Middletown, N.Y., August 14. He was born in Brooklyn in 1859, and as a gynecologist was favorably known. He was at one time an attending physician at the Kings' County Hospital, New York State.

WILLIAM A. JACOBS, M.D., Centre Hall, Pa., died in that township on August 16. Dr. Jacobs served in the Civil War as second lieutenant of Company G., 148th Pa. Vols. He was a graduate of the University of Pennsylvania.

JOHN FISHER, M.D., aged 38, died August 15, of hemorrhage of the lungs, in Baltimore. He was born in Germany and came to Baltimore thirty-two years ago, and received his degree of M.D., from the College of Physicians and Surgeons of Baltimore in 1862.

GEORGE W. AMMON, M.D., Reading, Pa., died August 13, aged 37 years. . . . Randolph V. Barksdale, M.D., Danville, Va., August 21, aged 83 years. . . . John Binney, Mount Olive, Ill., August 14. . . . S. G. Blythe, Nora Springs, Iowa, August 10. . . . John W. Dederick, M.D., St. Francisville, La., August 19, aged

80 years. . . John S. Harris, M.D., Dublin, Miss., August 8. . . R. C. Holladay, M.D., Hot Springs, Ark., August 23. . . J. M. Logan, M.D., Kansas City, Mo., August 12, aged 54 years. . . J. C. Maxwell, M.D., Greenwood, S. C., August 12, aged 62 years. . . Julius Northleifer, M.D., St. Louis, Mo., August 14, aged 43 years. . . Emory Pedigo, M.D., Edmonston, Ky., August 11, aged 55 years. . . Joseph Shields, Punksutawney, Pa. . . Andrew Schrenk, M.D., New York City, August 20. . . Edward Sprague, Cornopolis, Pa., August 12, aged 65 years. . . Edward T. Shepard, New Orleans, La., August 12, aged 55 years. . . James L. Stone, M.D., Roanoke, Va., August 17.

DEATHS ABROAD.

Professor Balbiani of the College de France, the last of the group that surrounded Claude Bernard. His research in comparative embryology, histology and physiology is now classic. Descended from a titled Italian family, he was born at Havana in 1823, educated in Germany, and became professor at Paris, where he founded the *Archives d'Anatomie Microscopique*.

Canadian Medical Association.

(Thirty-Second Annual Meeting, held in Toronto, Ont., Aug. 30, 31 and Sept. 1, 1899.)

[Telegraphic report by the JOURNAL'S Special Representative.]

FIRST DAY—MORNING SESSION.

The opening session was held in the normal school building, at 10:30 a.m., under the presidency of Dr. Irving H. Cameron of Toronto, Dr. F. N. G. Starr of Toronto acting as secretary. After the routine business was transacted, Dr. A. J. Johnson presented the report of the Committee on Arrangements for the guidance of visiting members to the city.

SIGNIFICANCE OF BOVINE TUBERCULOSIS.

PROF. J. GEORGE ADAMI, of McGill University, Montreal, read a paper on the "Significance of Bovine Tuberculosis and Its Eradication and Prevention in Canada." He pointed out that, in connection with this, three main questions have to be asked and answered: 1. Is tuberculosis in cattle a source of danger to other cattle, so as to seriously affect their well-being and to be a source of loss to the owners? 2. If infectious from animal to animal, is it infectious from animal to man and thereby a grave source of danger to the human race? 3. If infectious from animal to man, what are the commonest modes of infection and, as a sequel to this, how are we to diminish the danger?

To the first question he gave an unqualified affirmative answer and further stated, we have abundance of evidence here in Canada that the introduction of an infected bull into a herd previously free from the disease, has been followed within a short time by symptoms of the disease in members of the herd. He then proceeded to compare statistics between Canada, Berlin, Leipzig, Saxony, Bavaria, England and Scotland, to the infinite advantage of his own country. These were taken from slaughter-house records. In Leipzig alone, from 1868 to 1895, the spread of the disease, according to tables by Professor Conn, shows a growth of from 11.1 to 33.3 per cent. Comparing these with statistics of our own country, he stated, no country could point to such favorable results as in Canada. Of 90,000 cattle inspected at Montreal in 1894, only sixty animals were rejected by the inspectors and, of these sixty, two were recognized as suffering from tuberculosis, and even in these this was local.

The Doctor emphasized the importance of keeping all imported cattle for breeding purposes in quarantine for at least seven weeks, when, if at that period they fail to react to the tuberculin test, they may be handed over to their owners. He then considered the results of this disease on the animal itself as to its value as a milker, breeder and meat giver.

His answer to the second question was unhesitatingly affirmative, but he thought the reliable evidence of direct transmission of tuberculosis from cattle to man, singularly slight. After demonstrating the differences between bacilli gained from the human and bovine species, he took up the question of children developing the disease through the alimentary canal, by the milk of tuberculous cattle, and stated that there was a lack of positive evidence afforded in these cases. So far as he can see there is no large tract of country in the North Temperate Zone in which cattle are so free from tuberculosis

as are the Canadian cattle. In 1894, the lungs of 2504 animals were examined in the abattoirs of Montreal, St. Johns, N. B., and Halifax, N. S., and among these there were only fourteen cases of tuberculosis, a percentage of 0.6. No other country can show such low figures. Speaking of prevention, a corps of inspectors might be empowered to make complete and perfect visitations, kill off all animals showing clinical evidence, isolate or buy at full value and place on government reserves all animals reacting to tuberculin.

The discussion on the different matters dealt with in the paper was by Professor Oldright of Toronto University, Dr. J. J. McKenzie, bacteriologist to the Ontario Provincial Board of Health, Dr. Clarence Starr of Toronto, Dr. Turnbull of Pennsylvania, Dr. P. H. Bryce, secretary of the Provincial Board of Health of Ontario, and Drs. Roddick and F. Montzambert of Ottawa.

RESULTS ALREADY ACHIEVED AT THE MUSKOKA COTTAGE SANITARIUM.

DR. J. H. ELLIOTT, medical superintendent of this institution, presented this topic, giving the results already achieved there and a detailed historic review of the establishment of this institution, with the present methods of management. He stated, in his classification of cases, that he followed Trudeau, employing the terms incipient, advanced and far advanced. On discharge they are classified under the terms: "Apparently cured," "disease arrested," "improved," "stationary," "failed" or "died." After defining these terms, the Doctor gave a statement of 72 cases discharged during the last nine months of the year up to June 30, 1899. The average stay was 152 days. Of the 72 cases, 61 had bacilli on admission and 47 had them when discharged. A total of 25, or 35 per cent. of those treated, had no bacilli on discharge. Of the 72, 83 per cent. gained in weight, the average gain being 11½ pounds. The maximum gain for one month was 18 pounds, and the maximum total gain 43 pounds. This, Dr. Elliott stated, was a much more satisfactory result than achieved in the first year of the institution's history. Of the 17 incipient cases, 11 or 65 per cent. were apparently cured; 80 per cent. might have been with a longer stay. From twelve to eighteen months have now elapsed since the discharge of the patients of the first year. Twelve were reported apparently cured, and in none of these has there been a return of the cough, and all are in perfect health.

The treatment, broadly speaking, is rest when prexia is present, regulated exercise in apyretic cases, suitable diet, and hygiene and fresh air the entire twenty-four hours daily. There is constant supervision of the patient's daily life.

Dr. Powell of Ottawa, Dr. Lafferty of Calgary, N. W. T., Dr. N. A. Powell of Toronto, and Dr. T. H. Adams of Toronto discussed this paper.

FIRST DAY—AFTERNOON SESSION.

"CHRISTIAN SCIENCE."

Prof. J. H. Richardson of Toronto University was the essayist on this subject, and the manner in which he dealt with Eddyopathy was singularly effective. He elicited a good bit of hilarity from his auditors when he announced that this illustrious, or rather notorious, expounder of this "ridiculous muss," as he styled it, had thrice been left a widow. His remarks were closely followed, being both humorous and sober.

PRESIDENT'S ADDRESS.

DR. I. H. CAMERON delivered a scholarly address, taking for his subject the overcrowding of the profession and the means necessary to overcome this evil. He pointed out that all students, before entering on medical studies, should have a good English education. This would no doubt keep out undesirable practitioners. He also thought the younger men were not showing the respect due the older members of the profession. He spoke of the high compliment paid the medical fraternity when Her Majesty conferred the honor of knighthood on three members of the profession in England, Michael Foster, Burdon Sanderson, and Mitchell Banks, and he referred feelingly to the recent deaths of prominent members of the Association in Canada.

AN EXPERIENCE IN FORMALDEHYDE DISINFECTION.

DR. F. MONTZAMBERT, director-general of public health, Ottawa, read an interesting account of the recent smallpox outbreak on board the *Lake Huron*, twenty-five days out from port on the Black Sea. The vessel had 2400 Doukhobors on

board, bound for northwestern Canada, and was ordered into quarantine. All of the passengers were landed on June 9, just three days after the vessel was first sighted, and a new crew was in charge by June 14. For disinfection, formaldehyde was used, and twelve ounces of this solution was allowed for each 1000 cubic feet of space. Two and one-half months have since elapsed and there has not been reported a single outbreak of the disease.

MASSAGE AND RELIEF OF EYE STRAIN IN THE TREATMENT OF GLAUCOMA.

Dr. GEORGE M. GOULD, Philadelphia, Pa., contributed a paper on this topic. He illustrated his work in this direction by citing several cases he had treated in this manner, with beneficial results in all. By this method of massage, in these cases, all spaces with venous and lymph stasis are cleared and broken. He fully described how this massage was performed with the soft parts of the thumbs and tips of the fingers. At the conclusion of his paper, Drs. Reeve and Burnham complimented him on his results in this direction.

TREATMENT OF ACUTE DIGESTIVE DISORDERS OF INFANCY.

Dr. A. R. GORDON, Toronto, read a paper with this title. After going carefully into the causes of these disorders, and describing them fully, he detailed his treatment. He thought that cow's milk should be the very last of the diet to be followed, while some of the malted foods might be used first. He dwelt on the importance of purgatives, such as calomel, castor-oil and gray powder, to be first employed to clear the alimentary canal; also washing out the stomach and flushing of the rectum and colon. Even after the child is showing signs of recovery, phosphate of soda or aromatic syrup of rhubarb might be used to keep the bowels in condition. He was dubious about the employment of antiseptics, considering bismuth, in large doses, the best sedative, and opium indicated in some cases.

Dr. HOLMES, Chatham, Ont., contributed to the discussion by relating his experience and the good results achieved from systematic bathing and cold sponging.

Dr. BENEDICT, Buffalo, N. Y., deprecates antiseptics, and never gives opium to children. He has found catnip tea a good sedative.

A CASE OF SUBCUTANEOUS EMPHYSEMA.

Dr. FRED FENTON, Toronto, reported this case, which occurred in a child 6 months old. It began at the junction of the clavicle and sternum and spread over the neck, face and head, and downward over the chest and abdomen, to Poupart's ligament on either side. At the autopsy, the lungs, spleen and liver were found tuberculous. The child had had two or three attacks of acute bronchitis between 3 and 6 months of age. The father, aged 50, was tuberculous.

SPECIFIC IRITIS.

Dr. G. H. BURNHAM, Toronto, gave the histories of the successful treatment of three cases of specific iritis by his combined plan of treatment. He employs pilocarpin, hypodermically, 1/10 to 1/4 grain. This is given in a series of sittings of from ten to fourteen injections. The intervals between sittings range from three to eight weeks. During this time the patient is having the bichlorid and iodid of potash administered internally. The patient is made comfortable in a room at 75 degrees before each injection. This procedure requires from three months' time to three years, according to each case. In some cases, a few months' treatment will suffice.

BEST METHOD OF DEALING WITH THE CONSUMPTIVE POOR.

Dr. E. J. BARRICK presented this subject. He advocated governmental sanitaria and the levying of a tax, if necessary for their maintenance. Each county, or at the least a group of three or four counties, should have a sanitarium for this class of cases.

Dr. BRITTON, Toronto, took issue with Dr. Barrick on this subject, and thought the hospitals should deal with these cases. The attendance for the first day was about three hundred.

(To be Continued.)

Miscellany.

Spotted Typhus.—To prevent the spread of spotted typhus in the Caucasus, where so many persons go to seek work, from the famine-stricken districts of Russia, quarantine inspection and disinfection of cars and baggage has been ordered.

Intoxication from Silk Waist.—A robust young woman recently died with symptoms of intoxication ascribed to a green silk waist. The perspiration made the color come out under the arms, where there happened to be some pimples.—*Vienne Freie Presse*, August 11.

Pathology in Art.—Several portraits by Titian and Velasquez are pronounced types of neurosthenic subjects, and the recent exhibition of the collected works of Lucas Cranach has called attention to the rounded backs of the women in the days before the corset was invented. Scoliosis is apparent in at least one portrait.

Temperance Restaurants.—One of the practical results of the international antialcohol congress is the opening of a subscription for temperance restaurants, by Dr. Legrain, physician-in-chief at Ville-Evrard. One subscriber gave \$5,000, and a home-like restaurant has been opened in a poor neighborhood in Paris, with reading and lounging rooms. The prices are very low, and a single glass of wine or beer is served with the meals, none at other times, but tea, chocolate and coffee can be had at any time for from 1 to 2½ cents. The success of the "Petits Repas Hygieniques," as it is called, has amazed even the most enthusiastic promoters.

Queries and Minor Notes.

PRACTICE IN CALIFORNIA.

TOPERA, KAS., Aug. 28, 1899.

To the Editor:—Will you kindly inform me of the requirements of the law to practice medicine and surgery in California? Very truly yours,

H. O. T.

ANSWER.—Any one intending to practice in California must present his diploma to one of the three state examining boards—regular, homeopathic or eclectic—with affidavit relative to medical studies pursued. If the diploma and affidavit are found satisfactory and genuine, a certificate will be issued, for which a fee of \$5 is required. The applicant must also present an affidavit that he is the lawful possessor of the diploma and is the person named therein. The boards meet monthly, at the offices of their respective secretaries. For blanks or for additional information address the secretary of the Board of Medical Examiners. The secretary of the regular Board is Dr. C. C. Wadsworth, 1104 Van Ness Ave., San Francisco, Cal.

RAILWAY HYGIENE.

DENVER, COLO., Aug. 16, 1899.

To the Editor:—Interested as I am in railway surgery, I am seeking information on the subject of hygiene in its application to railway service and travel. Can you refer me to any literature on the subject?

Very truly yours, W. W. G.

ANSWER.—The subject of railroad hygiene is rather a wide one, but it has as yet apparently not been treated in a monographic way in our language. There was a work published in London in 1867, by Fletcher, on railways in their medical aspects, but that is hardly modern. Its literature is scattered through a large number of journals in various languages, only a comparatively small portion of it, it would seem, in our own. The most extensive recent memoirs noticed in the "Index Catalogue" and *Index Medicus* are those of Braehmer, "Handbuch der Hygiene," Jena, 1897-7, vi, pp. 239-311, and the reports of the International Conference on Railway Sanitation, etc., Brussels, 1898. A number of valuable articles bearing more or less directly on the subject have been published in this country, as those of Conn on "Car Sanitation" (*JOURNAL*, xxiii, 1894, p. 757), and elsewhere on "Hygiene of Railroad Employees"; of Lemen, on "Sanitary Regulations of Railroads" (*Ibid*, xvi, 1896, 102); of Pritchard on "Diseases of Railroad Men" (*Ibid*, xxviii, 1899). The list of titles covers over a page in the "Index Catalogue" (First series).

ST. LUKE'S HOSPITAL AGENCY.

KANSAS CITY, MO., Aug. 25, 1899.

To the Editor:—The St. Luke's Hospital Association of Niles, Mich., are representing some one, whom they style "Professor of Surgery in the Kansas City Medical College," a member of their staff. This is misrepresented. No one associated with the Kansas City Medical College, has graphed certificate of membership, nor is in the slightest manner connected with the above named hospital. Yours truly,

FRANKLIN E. MURPHY, Secy, Faculty Kansas City Med. Coll.

PRACTICE IN SOUTH CAROLINA.

WILLIAMSBURG, KY., Aug. 14, 1899.

To the Editor:—What are the regulations of the State Board of South Carolina governing the practice of medicine?

E. S. M.

ANSWER.—All applicants for a state certificate to practice are examined, provided they hold diplomas from reputable medical colleges or schools, in the following branches: Anatomy, general and regional physiology and histology, chemistry, toxicology, practical urinalysis, materia medica and therapeutics, surgery and surgical pathology, practice and diseases

of children, obstetrics and gynecology. An average of at least 75 per cent. on the whole list of subjects must be obtained by each applicant and he must not make less than 60 per cent. in any one branch. Examinations are held in May, on the third Tuesday, at Columbia, and elsewhere as may be necessary. The fee for examination is \$5, which is refunded if the applicant fails to pass. Temporary licenses are granted after an oral examination.

THE WIDAL TEST.

NEWCASTLE, COLO., August 17, 1899.

To the Editor.—Just what is required and how is the "Widal Test" for typhoid fever made? If this is asking too much, where can I secure the information?

W. G. L.

ANSWER.—The Widal test, as modified by Wyatt Johnston, is given in Hare's "Practical Diagnosis" as follows: "The lobe of the patient's ear having been pricked, the drop of blood is placed on a clear glass slide as follows: Lay a loop (drop) upon it up by a loop of platinum of bouillon culture of the typhoid bacillus is now placed on an absolutely clear cover-glass and to this is added a large drop of a watery solution of the dried blood. From the mixture of blood and typhoid bouillon a "hanging drop" preparation is made and examined with a one-sixth or one-eighth dry objective when it will be noticed, if the patient is suffering from typhoid fever, that the typhoid bacilli rapidly forms clumps."

As described by von Jaksch, in his "Clinical Diagnosis," twenty-five drops of Koch's nutrient bouillon are deposited by means of a platinum loop on an ordinary microscope slide and each drop is then inoculated with a young typhoid culture, previously examined under the microscope to make sure of the bacilli being in active motion. A drop of the suspension is added and the whole well mixed together and one drop placed in the cavity of a glass slide and examined under an oil-immersion lens. Von Jaksch prefers this 1-25 dilution as better than higher ones that may react only with severe infection or lower ones that are not decisive for typhoid. The macroscopic test as given by him is as follows: "3 c.c. of Koch's nutrient bouillon sown with typhoid bacilli from fresh culture—under one day old if possible—are mixed with five drops of serum. If this be a typhoid patient will be noticed that the sample turns turbid, the liquid becomes flocculent, and in twenty-four hours the bottom of the test-glass will be covered with a flaky sediment.

Widal's reaction is probably not exclusively met with in typhoid, but its occurrence in other disorders is exceptional and not so characteristic. The status of the reaction on medical opinion was stated rather fully in an editorial in the JOURNAL of April 15, last. We would advise our correspondent to read R. C. Cahot's work on "The Serum Diagnosis of Disease," published by Wm. Wood & Co., New York. The price is \$1.50.

STILL MORE COMMERCIALISM.

In this column last week, under the caption "For Sale to the Highest Bidder," we published a letter from a physician asking for bids for his practice. We did not publish the letter, but we thought we fully in the way we ought to have done so, as it would then have given those surgeons who give bribes for patients—if there are any—a chance to make a bid.

Appropos of this kind of commercialism we have just received a letter from Dr. C. D. Wescott, Chicago, in which he says: "Enclosed I hand you a letter which is sure will interest you. I know nothing of Dr. D., save that he is a homeopath living on the west side." Accompanying the above is a mimeograph circular letter supposed to have been written by the general manager of a mineral water company. The letter says: "It has been suggested that we make a special proposition to prominent medical men, something like this: We pay you fifty cents per case for all orders received through your aid. The average number of cases now being treated by this patient is about ten each; consequently you will observe, it will not require many customers to largely increase your revenue. Please advise us at your earliest convenience if this proposition interests you. You can easily send us names of people to whom we will send circulars, and if you like, we will attach a slip saying: 'Show this circular to your physician, and ask his opinion of the analysis of this natural water.' That will give you an opportunity to both recommend and endorse the water to mutual benefit."

"P. S.—Dr. C. D.—, of Chicago, mentioned your name favorably to us."

Note what a smooth game they propose to work by the "slip": "Show this physician and ask his opinion of the analysis of this natural water." The question arises: Can such an outrageous insult to honesty and intelligence be met as it ought to be? It is a species of bribery, and a low species at that.

In the same mail came the following:

FERRVILLE, OHIO, Aug. 28, 1899.

"I enclose herewith a letter and card which I have just received and which are self-explanatory. You may well believe I was thoroughly disgusted with their contents and the liberal 'proposition' made by this 'hereditary' specialist.

"Believing that it is the duty of self-respecting physicians to expose these 'bleeders' whenever they make such propositions, I forward these to you once with the request that you publish in your esteemed JOURNAL the liberality of this great reformer of 'exploded' theories. I wish to express my appreciation and emphatic endorsement of the warfare or rather crusade which you are making against this class of persons. I trust you will favor me by lending your great influence against this man."

L. P. H., HARBENBERG, M. D.

Following is a copy of the letter sent to Dr. Babcock, which you will find you send make you a proposition:

"Any person afflicted with cancer who may call on you for treatment, if you will bring to meet them my services, will give you 20 per cent. of the money I receive for treating each patient you may send to me. My charges for treating and curing a cancer are from 50 to 250 dollars. Kindly let me hear from you."

Circulars and "pictetes" tell what wonders are being done by this miracle-worker. "My father and grandfather cured cancer when I was an infant," he tells us, and for this reason, as the circular says elsewhere, he is, "by inheritance, by intuition, by study, and by a broad and varied experience, thoroughly qualified to practice my specialty—treating and curing all forms of cancer." Further comment will be made later.

The Public Service.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., to and including August 24, 1899.

Robert W. Andrews, appointed lieutenant and asst.-surgeon, Vols., to rank from August 7, 1899, and assigned to the 49th Inf. Vols., at South Framingham, Mass.

Frank E. Artand, appointed captain and asst.-surgeon, Vols., August 17, 1899, and assigned to the 45th Inf. Vols., at Fort Snelling, Minn.

Charles L. Baker, acting asst.-surgeon, from Leetown, W. Va., to Washington, D. C., reporting to the surgeon-general for instructions.

Shadworth O. Beasley, appointed lieutenant and asst.-surgeon, Vols., August 10, 1899, and assigned to the 11th Cav. Vols.

Edward G. Beeson, appointed lieutenant and asst.-surgeon, Vols., August 17, 1899, and assigned to the 39th Inf. Vols., at Fort Crook, Neb.

William Duffield Bell, appointed captain and asst.-surgeon, Vols., August 17, 1899, and assigned to the 42d Inf. at Fort Niagara, N. Y.

William F. Bernart, acting asst.-surgeon, to duty at the Army and Navy General Hospital, Hot Springs, Ark.

R. M. Bonar, acting asst.-surgeon, from Hebron, Ohio, to duty in the Department of California.

Ira C. Brown, major and surgeon, Vols., from the Division of Cuba to duty in the Department of California.

Euston Burchard, appointed lieutenant and asst.-surgeon, Vols., August 17, 1899, and assigned to the 40th Inf. Vols., at Fort Riley, Kans.

George L. Cable, acting asst.-surgeon, from Matanzas, Cuba, to New York City, to await orders.

Joseph T. Clark, captain and asst.-surgeon U. S. A., relieved from Madison Barracks, N. Y.; appointed major and surgeon, Vols., August 17, 1899, and assigned to the 47th Inf. Vols., at Camp Meade, Pa.

William Cogswell, appointed major and surgeon, Vols., August 17, 1899, and assigned to the 46th Inf. Vols., at South Framingham, Mass.

Samuel F. Cottrell, acting asst.-surgeon from Camp Meade, Pa., to accompany the 29th Cav. Vols., to Manila, P. I.

George D. DeShon, appointed major and surgeon, Vols., to rank from August 10, 1899, and assigned to the 11th Cav. Vols.

Frederick S. Dewey, appointed captain and asst.-surgeon, Vols., August 17, 1899, and assigned to the 38th Inf. Vols., at Jefferson Barracks, Mo.

Frank Donaldson, appointed lieutenant and asst.-surgeon, Vols., August 17, 1899, and assigned to the 45th Inf. Vols., at Fort Snelling, Minn.

E. W. Fowler, acting asst.-surgeon, from the hospital ship *Terry* to duty in the Division of Cuba.

Chas. W. Fry, acting asst.-surgeon, from Huntington, Ind., to Vancouver Barracks, Wash., for duty with the 33rd Inf. Vols.

Charles L. Furush, appointed captain and asst.-surgeon, Vols., August 17, 1899, and assigned to the 44th Inf. Vols. at Fort Leavenworth, Kans.

Alexander D. Ghiselin, appointed captain and asst.-surgeon, Vols., August 10, 1899, and assigned to the 11th Cav. Vols.

John G. Gibson, major and surgeon, U. S. A., orders to Manila, P. I., revoked; he is assigned as attending surgeon and medical superintendent of transportation at San Francisco, Cal.

James D. Glennon, captain and asst.-surgeon, U. S. A., relieved from Fort Myer, Va.; appointed major and surgeon, Vols., August 17, 1899, and assigned to the 38th Inf. Vols., at Jefferson Barracks, Mo.

Herman W. Groves, acting asst.-surgeon, previous orders directing him to accompany the 29th Inf. Vols., to Manila, P. I., revoked.

John Sturgeon Hill, acting asst.-surgeon, previous orders directing him to report for duty in the Department of California revoked.

Deane C. Howard, captain and asst.-surgeon, U. S. A., from temporary duty at West Point and from further station at Fort Columbus, N. Y., to duty at Fort Hancock, N. Y.

Merritt W. Ireland, captain and asst.-surgeon, U. S. A., relieved from Fort Wayne, Mich.; appointed major and surgeon, Vols., August 17, 1899, and assigned to the 45th Inf. Vols., at Fort Snelling, Minn.

Thomas T. Jackson, appointed lieutenant and asst.-surgeon, Vols., August 17, 1899, and assigned to the 44th Inf. Vols., at Fort Leavenworth, Kans.

D. J. Johnson, acting asst.-surgeon, former orders revoked; he is relieved from Fort Terry, N. Y., and assigned to duty with the 47th Inf. Vols., at Camp Meade, Pa.

George H. Jones, acting asst.-surgeon, from Toledo, Ohio, to Jefferson Barracks, Mo., for duty with the 38th Inf. Vols.

Frank M. Kemp, lieutenant and asst.-surgeon, U. S. A., from Fort Hamilton to West Point Military Academy, N. Y.

W. L. Kneeder, captain and asst.-surgeon, U. S. A., to duty on the hospital ship, *Missouri*, now at Brooklyn, N. Y.

Henry H. Lee, appointed captain and asst.-surgeon, Vols., August 17, 1899, and assigned to the 46th Inf. Vols., at South Framingham, Mass.

William F. Lippitt, Jr., captain and asst.-surgeon, U. S. A., relieved from Washington Barracks, D. C., appointed major and surgeon, Vols., August 17, 1899, and assigned to the 44th Inf. Vols., at Fort Leavenworth, Kans.

Morris S. Lord, acting asst.-surgeon, to duty at Madison Barracks, N. Y.

Arthur W. McArthur, acting asst.-surgeon, from Chillicothe, Mo., to Fort Niobrara, Neb.

Walter D. McCaw, captain and asst.-surgeon, U. S. A., relieved from

Fort Porter, N. Y.; appointed major and surgeon, Vols., August 17, 1899, and assigned to the 42d Inf. Vols., at Fort Niagara, N. Y.

Thomas R. Marshall, appointed captain and asst.-surgeon, Vols., August 17, 1899, and assigned to the 41st Inf. Vols., at Camp Meade, Pa.

Edward B. Moore, major and surgeon, U. S. A., previous orders revealed; he is relieved from the Presidio of San Francisco, Cal., and will proceed to Manila, P. I., for assignment.

Edward L. Munson, captain and asst.-surgeon, U. S. A., relieved from duty in the office of the surgeon-general and assigned to Washington Barracks, D. C.

Seaton Norman, appointed captain and asst.-surgeon, Vols., August 17, 1899, and assigned to the 39th Inf. Vols., at Fort Crook, Neb.

Thomas U. Raymond, captain and asst.-surgeon, U. S. A., relieved from duty as attending surgeon and medical superintendent of transportation in San Francisco, Cal., appointed major and surgeon, Vols., August 17, 1899, and assigned to the 40th Inf. at Fort Riley, Kan.

William E. Richards, lieutenant and asst.-surgeon, U. S. A., sick leave extended.

Edward A. Romig, appointed captain and asst.-surgeon, Vols., August 17, 1899, and assigned to the 40th Inf. Vols., at Fort Riley, Kan.

Allen M. Smith, captain and asst.-surgeon, U. S. A., relieved from Fort Hancock, N. J.; appointed major and surgeon, Vols., August 17, 1899, and assigned to the 41st Inf. Vols., at Camp Meade, Pa.

Henry D. Snyder, captain and asst.-surgeon, U. S. A., relieved from post duty; appointed lieutenant and asst.-surgeon, Vols., August 17, 1899, and assigned to the 43d Inf. Vols., at Fort Ethan Allen, Vt.

Alexander N. Stark, captain and asst. surgeon, U. S. A., to turn over the hospital ship, *Terry*, to the quartermaster's department and report for duty in the Division of Cuba.

Henry R. Stiles, captain and asst.-surgeon, U. S. A., from duty with the *Relief* at San Francisco, Cal., and from station at Fort Preble, Me., to duty at Benicia Barracks, Cal.

William J. Wakeman, captain and asst.-surgeon, U. S. A., to examine certain recruits at Camp Meade, Pa.

Philip G. Wales, captain and asst.-surgeon, U. S. A., relieved from Fort Niobrara, Neb.; appointed major and surgeon, Vols., August 17, 1899, and assigned to the 39th Inf. Vols., at Fort Crook, Neb.

Joseph M. West, appointed lieutenant and asst.-surgeon, Vols., August 17, 1899, and assigned to the 43d Inf. Vols., at Fort Ethan Allen, Vt.

Oddillon B. Weed, acting asst.-surgeon to duty at Fort Wayne, Mich.

George Reeves White, acting asst.-surgeon, from New York City to duty in the Department of California.

Movements of Navy Medical Officers.—Changes in the medical corps of the U. S. Navy for the week ending August 26, 1899:

Medical Inspector C. U. Gravatt, ordered to duty at the New York Navy Yard as member of board of medical examiners, September 5.

P. A. Surgeon C. F. Stokes, detached from duty as member and recorder of board of medical examiners at the New York Navy Yard, September 5, and ordered to continue on duty at the naval hospital, New York.

P. A. Surgeon M. S. Guest, ordered to the Boston Navy Yard.

Pharmacist S. Englander, detached from the Mare Island Navy Yard and ordered to the New York Navy Yard.

Pharmacist L. R. G. Lewis, detached from the New York Navy Yard and ordered home and to await orders.

Marine-Hospital Changes.—Official List of Changes of Station, and Duties of Commissioned and Non-Commissioned Officers of the U. S. Marine-Hospital Service, for the seven days ended August 17, 1899.

Surgeon Fairfax Irwin, to proceed to Marseilles, France, and Lisbon and Oporto, Portugal, for special temporary duty.

Surgeon Eugene Washin, to report at Washington, D. C., for special temporary duty.

P. A. Surgeon H. D. Geddings, to proceed to New York, N. Y., for special temporary duty.

P. A. Surgeon A. C. Smith, to proceed to Hampton, Va., and report to Surgeon J. H. White for special temporary duty.

P. A. Surgeon W. C. Richardson, to report at Washington, D. C., for special temporary duty.

Asst.-Surgeon T. F. Richardson, detailed as quarantine officer for the port of Neivitas, Cuba.

Acting Asst.-Surgeon F. J. Schug, granted leave of absence for 30 days from August 15, 1899.

Hospital Steward C. H. Woods, granted leave of absence for 15 days from August 16, 1899.

Hospital Steward S. W. Richardson, to proceed to Birmingham, Ala., for special temporary duty.

Hospital Steward F. H. Peck, to proceed to Hampton, Va., and report to Surgeon J. H. White for special temporary duty.

Hospital Steward E. J. Thurston, to be hospital steward and chemist.

PROMOTION.

Board convened to meet at the U. S. Marine-Hospital, New York, N. Y., at 10 o'clock, a. m., August 16, 1899, for the physical examination of a candidate for appointment to the Revenue Cutter Service.

Detail for the Board: Surgeon George W. Stoner, Chairman; Asst.-Surgeon W. C. Hobdy; Asst.-Surgeon W. C. Billings, Recorder.

A board of officers will be convened at the Service Building, 378 Washington Street, New York City, Wednesday, October 4, 1899, for the purpose of examining candidates for admission to the grade of Assistant-Surgeon in the U. S. Marine-Hospital Service.

Candidates must be between twenty-one and thirty years of age, graduates of a respectable medical college and must furnish testimonials from responsible persons as to character.

The following is the usual order of the examination: 1. Physical. 2. Written. 3. Oral. 4. Clinical.

In addition to the physical examination candidates are required to certify that they are free from any ailment which would disqualify for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists in examination on the various branches of medicine, surgery and hygiene.

The oral examination includes subjects of preliminary education, history, literature and natural sciences.

The clinical examination is conducted at a hospital, and when practicable candidates are required to perform surgical operations on the cadaver.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur.

Upon appointment the young officers are as a rule first assigned to duty at one of the large marine hospitals, as at Boston, New York, New Orleans, Chicago or San Francisco.

After five years' service, Assistant-Surgeons are entitled to examinations for promotion to the grade of Passed Assistant-Surgeon.

Promotion to the grade of Surgeon is made according to seniority, and after due examination as vacancies occur in that grade. Assistant-Surgeons receive sixteen hundred dollars, Passed Assistant-Surgeons two thousand dollars, and Surgeons twenty-five hundred dollars a year. When quarters are not provided commutation at the rate of thirty, forty or fifty dollars a month, according to grade, is allowed.

Surgeons above the grade of Assistant-Surgeon receive longevity pay, ten per centum in addition to the regular salary for every five years up to forty per centum after twenty years' service.

The tenure of office is permanent. Officers traveling under orders are allowed actual expenses. For further information, or for invitation to appear before the Board of Examiners, address, Supervising Surgeon-General, U. S. Marine-Hospital Service, Washington, D. C.

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended August 25, 1899:

SMALLPOX—UNITED STATES.

Florida: Jacksonville, August 14 to 29, 1 case.

Louisiana: New Orleans, August 12 to 19, 1 case.

Massachusetts: Boston, August 12 to 19, 2 cases.

Ohio: Cincinnati, August 12 to 19, 2 cases.

Pennsylvania: Allegheny, August 12 to 19, 5 cases.

Virginia: Portsmouth, August 12 to 19, 3 cases.

SMALLPOX—FOREIGN.

Brazil: Rio de Janeiro, July 7 to 14, 11 deaths.

Colombia: Panama, August 1 to 8, 2 cases, 1 death.

Egypt: Cairo, July 15 to 22, 4 cases.

England: London, July 29 to August 5, 1 case.

Greece: Athens, July 29 to August 5, 7 cases, 3 deaths.

India: Bombay, July 11 to 25, 14 deaths; Madras, July 1 to 8, 2 deaths.

Mexico: Chihuahua, August 7 to 14, 1 death; Mexico, July 31 to August 6, 4 cases, 3 deaths; Nuevo Laredo, July 5 to August 12, 1 death.

Russia: Odessa, July 29 to August 4, 4 cases, 1 death; St. Petersburg, July 22 to 29, 8 cases.

YELLOW FEVER.

Brazil: Rio de Janeiro, July 7 to 14, 6 deaths.

Costa Rica: Port Limon, August 18, 1 case.

Cuba: Havana, August 3 to 17, 25 cases, 5 deaths; Sancti Spiritu, August 24, 2 cases; Santiago, July 30 to August 12, 10 cases, 5 deaths.

Mexico: Tuxpam, July 31 to August 8, 5 deaths; Vera Cruz, July 27 to August 10, 32 cases.

CHOLERA.

India: Bombay, July 18 to 23, 2 deaths; Calcutta, July 8 to 15, 7 cases.

PLAGUE.

India: Bombay, July 12 to August 25, 121 deaths; Calcutta, July 8 to 15, 3 deaths.

Portugal: Oporto, August 16, 39 cases, 13 deaths.

Turkey: Smyrna, July 30, 4 cases, 3 deaths.

CHANGE OF ADDRESS.

Adams, W. T., to 2453 5th Ave., Pittsburg, Pa.

Ash, J. C., from Chicago to Good Hope, Ill.

Burrell, R. H., from 332 Madison St. to 213 13th St., Ann Arbor, Mich.

Beacharach, H., from Chicago to Fairbault, Minn.

Chapman, J. A., from Hillsboro, Texas to 841 N. Rampart St., New Orleans, La.

de Beque, W. A. E., from Des-Moines, Iowa to Mexico City, Republica Mexicana, Sucubras B. Apartado, No. 2067.

Deming, N. L., from 29 E. 39th St. to 2907 Prairie Ave., Fort Wayne, Ind.

Green, G. W., from 326 to 298 Beacon St., Boston, Mass.

Wiley, W. H., from Martinsburg, W. Va. to 704 2d St., Evansville, Ind.

Forster, J. D., from St. Louis, Mo. to Wellston, Mo.

Frish, Marie, from Tuscon, to Pole House, Madison, Ill.

Goldspohn, A., to 517 Cleveland Ave. Sta. A., Chicago.

Garwin, W. G., from Vassar to Willington, Mich.

Gardiner, W. C., from 1432 to 1455 Erie St., Toledo, Ohio.

Gammot, C. F., from Chicago, Ill. to Fomeroy, Wash.

Grier, D. F., from Fargo to Adrian, N. D.

Grasse, M. J., from Denver, Colo. to 785 Sheridan Road, Waukegan, Ill.

Hotovick, J. M., from Minneapolis to 2807 Prairie Ave., Chicago.

Herzog, M., from 277 Seminary to 174 E. Chicago Ave., Chicago.

Koenick, T. A., from New York City to 107 Pelham St., Newport, R. I.

Klokke, W. E., from 235 So. Lincoln St., Chicago, Ill. to 2033 Park Ave., St. Louis, Mo.

Kennedy, F. P., from Dublin to Topaz, Texas.

Lockwood, W. D., from St. Joseph to No. St. Joseph, Mo.

Lull, H., from 1276 Adams to 2387 Prairie Ave., Chicago.

Lyons, E. W., from 612 Dix Ave. to 759 Junction Ave., Detroit, Mich.

McDill, J. R., from 209 Wisconsin to 470 Jackson St., Milwaukee, Wis.

Martin, M. L., from Galveston to Denton, Texas.

McClure, H. J., 475 Ogden Ave., Chicago to 610 Olive St., St. Louis, Mo.

Stagg, W. H., from Washington to Whitehouse, La.

Snow, B. G., from Caldwell to Tamarack Mine Hospital, Calumet, Mich.

Schmidt, Oscar, from Campbellsport to Mendota, Wis.

Hilgen, H. J., 475 Ogden Ave., Chicago to 610 Olive St., St. Louis, Mo.

Veldhuis, J. G., from Great Falls to Ft. Benton, Mont.

Vacien, W. E., from Priost to Triune, Tenn.

Wright, S. D., from 140 Ashland Boul., Chicago, Ill. to 409 E. Prospect St., Cleveland, Ohio.

The Journal of the American Medical Association

VOL. XXXIII

CHICAGO, ILLINOIS, SEPTEMBER 9, 1899.

No. 11.

Original Articles.

A FALLACY OF THE REST-CURE TREATMENT*

BY GEORGE M. GOULD, M.D.

PHILADELPHIA.

Even in this day of enlightenment as regards etiology and pathology, there are thousands, very many thousands, of patients being systematically treated for functional diseases of the body that are due to diseases of the eyes. There are other thousands being treated for organic diseases of the body which originally were caused by ocular diseases. In both cases neither the patient nor the doctor has the remotest suspicion of the ocular origins of the functional and organic abnormalities. Sneering and top-lofty contempt of the specialist "hobby-rider" will not change the facts, nor lessen the hobby-riding. Moreover, the assertion that the patient has been in the hands of an ophthalmologist of good reputation does not in the least lessen the truth for which I contend.

Out of perhaps a hundred classes I wish to-day to choose one small class of cases illustrative of the general thesis. This group is composed of "nervous" hysterical patients, usually women, neurasthenics, who, when we do not know what is the matter with them, and when we can relieve them by no other means, we call "nervous breakdowns," and order the rest-cure. Modern medical practice is made up in too large degree of this sort of work in the dark—I mean with patients whose diseases we may name but can not thoroughly diagnose, and the treatment of which we order with a sickening feeling in our own hearts that we are blind and ignorant of any clear reason for our doing. In no class of cases is there such great reason to look after the eyes as in this class of hysterics and neurasthenics, which, by a morbid philology we allow to be called "nervous." I am told that Dr. Spivak of Denver has advanced the theory that hyperchlorhydria and other functional gastric troubles are the principal affections relieved by the rest-cure. To this I would add that nothing is more certain in my mind than that such functional gastric derangements are frequently the direct result of eye-strain.

Out of a large number of such cases I have seen permit me to epitomize in simple language, I mean without the cacophonous jargon of the oculist, three typical ones:

CASE 1.—Six years ago a woman came to me with a long history of sick-headaches, functional digestive trouble, anemia, and the hundred ill-defined symptoms of nervousness, hysteria, etc., so often conjoined in our pathetic, characterless, useless, childless, muscleless, hothouse flowers of modern womanhood. I found a complex unsymmetric astigmatism—the fruitful mother of

such daughters. The woman at once took fright and with horror asked me, "But Doctor, I will not have to wear glasses, will I?" I said, "If you come to me you will not only wear glasses, but spectacles, and you will wear them every hour of your waking life. If not, I can not be your adviser." She would not listen to this. The devil of pride ruled her heart and was stronger than her belief in me, and she at once consulted an oculist who allows his patients to do as they please in regard to treatment. In the years that have flown since then the woman has taken several rest-cures. She thereby gets fat; of course, the doctor is praised and the fame of the mythical metaphysical treatment gains ground. But somehow the nervous breakdowns recur, institutions of various styles of euphuistic titles—one certainly a family inheritance and hence inalienable—are visited for long or short terms, the husband's business and mind grow weedy, and the slow journey down the tragical road, a literal *descensus averni*, continues with increasing speed and certain ending.

CASE 2.—Five years ago a school-girl of 16 years was sent me because of poor vision, headaches, and sundry nervous phenomena. She had an enormous astigmatism and with the best glasses I could give her there was only two-fifths vision in each eye. My spectacles were worn and the vision in a month had regained normal acuity, the headaches entirely disappeared and perfect health was enjoyed for two or more years. Then as the young men gathered about the lovely flower, the glasses were left off, the health ran down, malnutrition, headaches, the Lord knows what not, returned, and, of course, the great nerve-specialist had to be consulted. He never asked or said a word about eyes, but put her to bed for three months, and she got as "fat as butter," and "Great was Diana of the Ephesians." Then after the neurologist's victory she was brought to the poor little oculist again, "just to show him, etc.," and "to get new glasses should they be needed now," and lo, again the vision reduced to one-half or two-thirds of the normal! I hope she has her husband by this time—but I pity him!

CASE 3.—The patient was a young man—and when you find a young man needing the rest-cure, I would advise looking into the matter with all the 'scopes at command, and for a hundred or two years at least! He had for ten years suffered everything that a strong, fine organism could suffer and not die. The reflexes from a pair of eyes with high compound unsymmetric astigmatism had expended themselves on mysterious functional digestive disease. Every kind of dieting, every treatment suggested by the finest physicians had been tried; he was wearing glasses from an ophthalmologist of national reputation; his natural intellectual mind was getting "fuzzy" with ten years of torment, loss of business, failure in ambition, etc. Reading for ten minutes "tied his stomach into a knot," and because he had no loss of visual acuity, and no pain or trouble whatever with the eyes—these are just the cases that wreck lives—

*Presented to the Section on Practice of Medicine, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

and because he had glasses from a great oculist, even his quick perception had been unable to see that the eyes were the cause of the trouble. For a diabolical refraction-error he was wearing simply and only a pair of weak prisms in his spectacles. It would have done him more good to have buried a lock of his hair at midnight at the crossing of the country roads, with a black cat held by the tail over the grave. Well, the neurologist put him to bed with forced feeding, stopped his reading, and gave him back his lost forty pounds of flesh. When he got about again, his stomach began tying knots when he read, and the old woes began their old round. The heretofore unused mydriatic, when he came to me, gave instant relief of all symptoms and so long as the ciliary muscle was paralyzed there was no stomach-tie or misery of any kind. A few days' gymnastic exercise of the weak muscles of the eyeballs made disappear the exophoria for which he was wearing prismatic spectacles. Glasses correcting his far-sightedness and his unsymmetric astigmatism were ordered, switching of the axes watched, and the almost-ruined neural and digestional functions will, it is hoped, right themselves in time. Perhaps, however, cure will not be effected, because it is a simple truism that in disease, stopping the cause does not always stop the effect. Secondary diseases may have been induced, and such injuries that health can not be perfectly restored. Functional disease leads to organic disease.

I should be sorry to be misunderstood. I by no means say or believe that in every case, or that in the majority of cases requiring the rest-cure, the origin or chief factor of the disease is eye-strain. I do not say or believe that the rest-cure is unnecessary even in cases of reflex ocular neuroses. What I do believe and wish to emphasize is:

1. It is positively criminal negligence to ignore eye-strain in any case requiring the rest-cure treatment.

2. It is not enough to know that the oculist has examined the eyes, especially if it has been done without a mydriatic.

3. To mydriaticize a pair of eyes for a month or two would often do more good, would certainly be more logical, would be an infinitely better means of differential diagnosis in obscure nerve-trouble and functional nutritional diseases than to put the patient's body to bed for the same time.

DISCUSSION.

DR. G. BETTON MASSEY, Philadelphia—I have had some experience with the rest-cure treatment in cases of neurasthenia and I merely wish to take exception to the assumption of the reader of the paper that the "rest cure" is a proper method of treating this affection. The results of my observations have been that the rest-cure treatment is most effective in hysteria, not neurasthenia. After many years' experience with such cases I have never heard of any cure by this means in neurasthenia. In cases of hysteria and anemia, approaching the neurasthenic condition, this treatment may prove thoroughly effective, but it will often do harm in non-hysterical neurasthenia.

CATAPHORIC TREATMENT OF CANCER.*

BY G. BETTON MASSEY, M.D.

PHILADELPHIA.

The insertion of nascent salts of mercury within the human body by electric diffusion in a strength that will deluge a given tract of tissue or a growth with these germicides without materially affecting the remainder of the body constitutes a novel therapeutic procedure which the writer contributed to medical science as a

cure for cancer, in a paper before this Section of the ASSOCIATION at its Philadelphia meeting, in 1897. Further experience with this method in primary cancers and local recurrences in accessible situations has demonstrated an even greater usefulness than was anticipated, as the technic has improved and greater currents have been used.

The importance of this method of destroying germs within the body would be sufficiently great if its applicability to the cure of local cancerous foci is alone considered, for cancerous affections are increasing rapidly in frequency throughout the country, but an examination of the method will show that it may be used for the destruction of any accessible focus of germ growth of any kind, there being but one essential condition to its use, and that is a path for drainage of the products of the dead germs, with which, in the worst cases, certain portions of the stroma are separated. It is, therefore, a most convenient, certain and speedy method of destroying tuberculous deposits in any part of the body except the brain, lungs and abdomen. It may be used to destroy the germ of carbuncle, under ether, leaving a painless and aseptic core to be separated in two or three weeks without inconvenience. It may be used to destroy the infection of wounds, when yet local, and all torpid or indolent ulcerations. I will not dwell at great length on these possible applications of the method, further extensions of which will readily occur to you, but will proceed at once to state in what the method consists, and what success has been attained by it in the treatment of cancer since my last report.

Since the method, in its major applications, is a painful one, it is necessary to place the patient under an anesthetic, and this gives full opportunity for the immediate destruction of all the germs in a cancer, no matter how large it may be. With the patient thoroughly anesthetized, therefore, and lying on a large pad connected with the negative pole of a battery of sufficient power, a small tubular gold electrode that has been amalgamated with mercury is inserted into the growth through a small opening, and an excess of metallic mercury is injected into it through a rubber tube and glass syringe connected with the instrument. This gold-mercury electrode is connected with the positive pole of the battery, this being the pole from which these substances may be radiated. When, now, a strong current is gradually turned on through this circuit electrolysis of the growth and of the mercury occur simultaneously, resulting in the formation of an oxychloride of mercury, which is radiated from the electrode in all directions toward the opposite pole. The effect of the diffused chemicals is evident to the sight in a few moments when a powerful current is used, a whitish-gray color spreading in all directions from the electrode. The exact speed at which the atoms of mercury travel has not yet been experimentally determined, but it is dependent on the voltage of the current. At a pressure of 110 volts it is probably nearly a centimeter in ten minutes. The density of the diffused chemical is, of course, greatest at the point of diffusion, at the electrode; this results in the area nearest the electrode receiving the diffused chemical in such proportion as to necrose all protoplasm in this situation, producing an area of total destruction, the limits of which are shown not only by the discoloration but by the subsequent formation of a line of demarcation. Beyond this line of demarcation the diffused chemical infiltrates the tissues in a decreasing density, producing a zone of infiltration within which outlying germs and colonies of cancer are destroyed

* Presented to the Section on Practice of Medicine, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

while a mere physiologic reaction occurs in the healthy tissues.

The essence of the method, therefore, is the production of an area of total necrosis coterminous with the apparent limits of the cancer, beyond which a zone of infiltration causes the death of outlying colonies and latent germs, thus insuring against local recurrence. All this is accomplished in a time varying from fifteen minutes to an hour and a quarter, in accordance with the size of the growth. The aseptic and odorless slough occupying the area of necrosis separates painlessly in from twelve days to three weeks, leaving a cavity that rapidly fills with healthy granulations.

The method is mainly applicable to primary cancerous foci, though certain infected glands may also be destroyed at the same time as the primary growth, and also early recurrent carcinomas and sarcomas may be placed under the method. When the infection gains access to the blood-vessels or to inaccessible portions of the lymphatic system this method is useless. In the larger growths it has been found wise to conjoin the cauterant action of the oxychlorid of zinc from amalgamated zinc electrodes with the pure mercuric cataphoresis for the quicker production of the area of necrosis.

SUMMARY OF CASES.

Since the paper previously read before this body¹ twenty-six cases of carcinoma and sarcoma have been subjected to this method in some manner, in my hands, many of them extremely bad cases—mere forlorn hopes. Of these 10 were operable cases and results are as follows:

Operable cases—Cured, 8; probably cured, 1; failed to cure, 1.—Total, 10.

Inoperable cases—Cured, 2; probably cured, 1; failed to cure, 13.—Total, 16.

Recapitulation—Cured or probably cured, 12 cases; failed to cure, 14 cases.

The fact that two cases have been cured and one probably cured out of sixteen inoperable cases of cancer is a sufficient excuse for the effort to determine the usefulness of this method in advanced cases of malignant disease, but in spite of this modicum of success it is my wish to avoid further efforts in this line, though it may be said that nearly all these unfortunate patients were benefited temporarily by the palliative action of the applications.

It is far different when we consider the result in the operable cases. Among these but one failure occurred, due to neglect on the part of the patient to submit to a second application—a recurrence in an accessible group of glands of the region where the primary growth had been destroyed. All other operable cases—nine in all since the former report—are well to-day and bid fair to remain well. Many of these patients, moreover, retain the organ affected, such as the breast, etc., with unaltered functions, since it is possible by this method to destroy an incipient cancer in an organ without destruction or removal of its unaffected portions.

DETAILS OF SUCCESSFUL CASES—SECOND SERIES.

CASE 1.—W. O., aged 39 years, an employe of a sugar refinery in Philadelphia, consulted me Oct. 11, 1897, with a rapidly growing neoplasm of the upper jaw projecting into the mouth. It had been first noticed by a dentist six months before, on the occasion of some teeth dropping out. It had displaced, by thus loosening them, four healthy teeth in this situation, and the part projecting into the mouth was about two inches by one inch in

diameter. There were evidences, however, of much greater penetration into the upper maxilla, for the cheek on this side showed a decided projection, and what was even more significant, the hard palate was flattened downward on the right side. The clinical evidences thus pointed to sarcoma of the superior maxilla, and this diagnosis had been confirmed by the chief surgeons at the Hospital of the Jefferson Medical College and at the Medico-Chirurgical Hospital, where extirpation of the superior maxilla had been advised.

On Oct. 27, 1897, he was placed under ether, and the pure mercuric cataphoresis with 300 milliampères was applied by means of a gold electrode, for fifteen minutes, with the assistance of Dr. Lindsay and in the presence of Dr. E. P. Bernardy. It was found that the gold instrument was too short to be used conveniently within the mouth, and the application was discontinued before we were certain that a complete effect had been obtained. The next day it was seen that some of the diseased tissue remained, but that the greater portion was well included in the area of necrosis. When the devitalized portion had separated, two weeks later, it was determined to see what could be done by office applications of sharp zinc-mercury points, the growth being but moderately sensitive, though painful as a whole. This was accordingly begun with an average strength of 30 milliampères, and fully completed at the end of two months. This left a healthy sinus extending into the antrum.

This patient has been under frequent inspection since and remains well at this date, a year and a half after. The projection of the cheek bone below the malar prominence has disappeared, and even the flattened arch of the hard palate has receded into place.

CASE 2.—Mrs. B., aged 63 years, of Philadelphia, had had the right breast and a diseased gland in the axilla removed for carcinoma ten months before consulting me for several recurrent nodules situated in the line of the lymphatic vessels leading from the scar to the clavicle. There were seven of these lumps the size of hazel nuts.

On Dec. 11, 1897, with the assistance of Drs. Ida E. Richardson and W. C. Thompson, she was placed under ether and pure mercuric cataphoresis employed with 500 milliampères distributed between three small gold electrodes. The duration of the application was but fifteen minutes, at the end of which time all the lumps were soft. The area of necrosis separated promptly and the cavity healed in five weeks. This patient has remained well during the year and a half that has followed the application with the exception of two minute spots of suspicious texture higher up in the line of the infected lymph vessels. Each of these spots has been removed in ten-minute office applications under the local use of cocaine, a small zinc-mercury needle being used with about 10 milliampères of current.

CASE 3.—Mrs. S., aged 56, of West Philadelphia, applied for treatment Dec. 21, 1897, with an indurated and foul ulceration under the left side of the tip of the tongue. A lump had been growing in the situation of the left sublingual gland for six months. Two months before seeing me ulceration began, and it was then so painful as to confine her to liquid diet and leave her sleepless.

On Dec. 28, 1897, she was placed under ether, with the assistance of Dr. S. J. Gittleton, and gold-mercuric cataphoresis was applied with a current of 350 to 400 milliampères for thirty minutes. The ulceration was found to be a cavity in the sublingual gland with indurated edges, about the size of a horse chestnut, emitting probably the foulest odor possible, the surrounding

¹ Medical Record, July 31, 1897.

tissues being deeply indurated. After the current had been flowing fifteen minutes this odor disappeared entirely and did not return subsequently. But little pain remained the next day after the reaction had subsided. Separation and healing were complete in four weeks, except for a small spot in which the disease still existed. She was accordingly given a second application with less current, the healing this time being free from doubt. At the present time, a year and a half after the application, the patient remains well, the mouth being normal except for some cicatricial awkwardness of the lingual movements.

CASE 4.—Miss B. of Philadelphia, aged 51, presented herself Nov. 11, 1898, with a growth in the outer and lower quadrant of the left breast about one by two inches in dimensions. It had appeared only recently and was



Appearance of scar in Case 4 six months after application. The two minor elevations near external corner show where unused mercury came away after healing. They have since disappeared.

beginning to give much pain. On palpation the growth was found to be movable and to present the contour of an acinous carcinoma of the breast. The case had been seen by Dr. Bruce Burns of Frankford, who pronounced it malignant, and advised removal of the breast. On Nov. 16, 1898, she was placed under ether at her home, and a major application of mercuric cataphoresis made, with the assistance of Dr. W. Oakley Hermance. A small gold canula-electrode was inserted into the growth, through which the mercury was injected, and 350 mil-

liampères of current turned on. The current was subsequently raised to 475 milliampères. A grayish necrosis began to form immediately around the electrode, and it was shortly noticed that the malignant hardness began to soften at the periphery of the growth, this softening progressively increasing from without inward. At the end of thirty-five minutes the whole growth had softened. It was now thought best to impregnate the region with the oxchlorid of zinc also, so the current was turned down and the gold instrument replaced by an amalgamated zinc electrode, the current being again turned on for five minutes, making forty minutes in all.

During the following night there was some pain in the zone of infiltration surrounding the necrosed area, readily controlled by morphia, but this pain did not recur again throughout the convalescence. At the end of six weeks the dead portion had come away, leaving a cavity with healthy walls which quickly filled with normal granulations. Several globules of mercury came away during the healing process, showing that an excess had been used. There were no evidences of general absorption of the mercury in a dose capable of detection.

At the present time the breast is soft and movable and entirely free from disease. It shows only a narrow linear scar about one and a half inches long with a depression in the breast at its site. (See cut.) This is the first case in which a carcinoma has been eradicated from the breast—with full preservation of the healthy portion of this organ, under the use of cataphoresis.

CASE 5.—A gentleman aged 79, a resident of Philadelphia, was referred to me by Dr. M. J. Grier, who had removed a wart from the face at the angle of the nose two years before by means of negative electropuncture. The growth had recurred in the same situation, being the size of a small strawberry, and giving evidence of mild malignancy. The problem was to remove or control this growth without detriment to the very feeble health of the aged patient, who could not possibly stand general anesthesia. The effect of very slight currents of but 2.5 milliampères was accordingly tried, applied by means of a sliver of amalgamated zinc inserted into it slightly. Each application of this extremely mild cataphoric method has appeared effective in destroying a bit of the growth, and at the present time only an infected base remains that could easily be cleared away were it possible to make a very slight increase in the current or frequency of application. Meantime the growth is kept under full control.

CASE 6.—A physician of York, Pa., aged 66, had been the subject of rodent cancer of the face for twenty years, during which time the growth had been operated on once at the Hospital of the University of Pennsylvania with but temporary results. On January 16 last he applied for treatment by the cataphoric method. The erosion was at this time about four inches long by two wide, extending from above the eye on the right side of the face to the middle of the cheek. The right eye was being threatened, the orbicular muscles and outer canthus being eroded through, and the outer table of the skull had been eaten away, leaving the skull exposed over a small area.

As the patient dreaded anesthesia, he was treated by the mild method, with prolonged daily applications of small zinc-mercury points and currents varying from two to ten milliampères, the pain being lessened by the local use of cocain. The effect of each application was immediate, both locally and at a distance, and now as a result of about three months' treatment, with intervals of non-treatment, all malignancy has been eradicated

and the site of the growth has filled in with healthy skin by extension from the edges. This case was a beautiful instance of the efficacy of the zone of infiltration, by which a remedial effect was obtained far beyond the mere area of cauterization.

CASE 7.—Mrs. M. S., aged 57, a patient of Dr. A. F. Müller of Germantown, Pa., who kindly referred her to me, was suffering from a carcinoma involving the whole of the left breast. The growth had been discovered about ten months before and was rapidly increasing in size and beginning to give pain. The axillary and supraclavicular glands were healthy.

The condition here was a completely diseased breast that could easily have been removed entire with the knife. The problem was to so remove the disease as to insure a greater immunity from recurrence than the knife gives. The large bulk of the growth, situated just over the heart, suggested to me that the greater portion of it could be impregnated with the chemicals by a local circuit, which would permit a larger current and greater expedition than would otherwise be possible in this situation. With the kind assistance of Drs. Müller and Hernance, the patient was etherized and a ring of zinc-mercury electrodes was inserted around the periphery of the growth, each electrode pointing toward the center. All were connected to the positive pole of the battery. On the center of the growth was placed a cotton-covered disc, saturated with Fowler's solution, to act as the negative pole. When the current was turned on the mercury and zinc radiated from the peripheral electrodes and arsenic from the central disc, thus attacking the growth from both directions, the two sets of materials rapidly devitalizing the whole substance of the cancer. Eight hundred milliampères were found to be possible in this manner, though above this amount had a temporarily depressant action on the circulation and respiration. After complete softening and necrosis of the growth had been secured the negative cord was shifted to a large pad on which the patient lay, the current being turned off, and 400 milliampères were employed for a time in this monopolar way to produce an efficient zone of infiltration. The total time of application was an hour and a quarter, and the subsequent history of the patient was the same as that of Case 4. The whole tumor, consisting of the entire breast and underlying fatty tissue, came away on the twenty-second day, having been odorless and painless throughout. The cavity left on separation measured 7 by 4 inches, which has greatly lessened in area in the healing process.

I will not occupy further space with the details of the remaining cases, in one of which, a carcinoma of the breast, a diseased gland in the axilla was destroyed at the time of the application to the breast, for sufficient time has not yet elapsed to insure accuracy of results.

CONCLUSIONS.

1. The massive diffusion of nascent mercuric salts within a growth or cavity of the body by an electric current constitutes a novel therapeutic procedure of great value in the destruction of foci of malignant or non-malignant germ growths, when said growths are so situated as to permit of penetration and drainage.
2. This cataphoric destruction of the germs of a primary cancerous growth in situ, including outlying colonies and so-called roots of prolongation permits the preservation of the unaffected portions of the organ in which it is situated, and offers greater security against a recurrence of the growth than efforts to remove the living malignant organisms by cutting operations.
3. While the cataphoric method may be employed as a

palliative in non-operable malignant growths, and may at times cure them, its chief value is in the total destruction of the malignant germs in the early stages of primary growths, and in the same stages of purely local recurrences.

TREATMENT OF ANEURYSMS BY EXTIRPATION: WITH REPORT OF CASE OF POP-LITEAL ANEURYSM TREATED BY THIS METHOD.*

BY JOHN CHADWICK OLIVER, M.D.

Surgeon to the Cincinnati Hospital; Professor of Descriptive Anatomy, Miami Medical College; Surgeon to the Presbyterian and Christ's Hospitals.

CINCINNATI, OHIO.

The following report of a case of traumatic aneurysm of the popliteal artery occurring in a syphilitic subject can be used as the text for a few remarks on the general subject of aneurysms, but more particularly on those which develop in the popliteal space.

John Taylor, a strong, well-developed negro, 29 years of age, had enjoyed good health until six years ago, at which time he contracted syphilis. Primary and secondary manifestations left no doubt as to the nature of his malady. He was admitted to my service in the Cincinnati Hospital, Feb. 24, 1899. Four weeks previously he had slipped and in falling had struck his ankle and the outer surface of the left knee against the curbstone. He is not certain as to whether a swelling was immediately apparent, but a dull, throbbing pain was present almost from the time of injury. This pain was always worse at night, and was increased by attempts to extend the leg. Sometimes there was a feeling of numbness in the leg. He had been treated for rheumatism.

When admitted to the Hospital his pulse was 80 and his temperature 99.6 degrees. He complained of great pain and walked with much difficulty. The left leg was semiflexed and held rigid because of the pain produced by extension or movement. The typical symptoms of aneurysm were present, but the tumor seemed more superficial than would be expected in true aneurysm. The swelling extended more toward the outer than the inner side of the popliteal space.

Because of the ease with which fluctuation could be elicited, and because of an elevated temperature—ranging between 99 and 101—it was deemed expedient to rule out the possibility of the swelling being dependent on an abscess. A hypodermic needle introduced into the mass withdrew a syringeful of clear blood. The knee of the left side was one and one-half inches greater in circumference than its fellow. Pulsations in the dorsalis pedis artery were not present, nor could we be sure as to their presence in the posterior tibial; sometimes there seemed to be slight pulsations, but they were never so strong as to remove the element of doubt from our observation.

It seemed good policy to thoroughly prepare the patient for operation by the administration of iodid of potassium in large doses. This remedy was not given for the purpose of producing any direct action on the aneurysm, but to, theoretically at least, put the artery in a better condition to retain a ligature. Codeia was given to relieve pain. The leg was immobilized by bandaging it to a posterior splint. This treatment was continued for three weeks.

On March 16 the operation was performed. Two Es-

*Presented to the Section on Surgery and Anatomy, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

march straps were used, one above and one below the knee; the upper one being placed sufficiently low to permit of ligation of the superficial femoral at the apex of Scarpa's triangle, should such a procedure become necessary. No particular difficulty was experienced in locating the nerve and vein, nor was there any embarrassment in identifying the sac of the aneurysm. During an attempt to get around the aneurysm from its inner side—the popliteal vein was on the outer side—the sac was ruptured, and a large blood clot was expressed. This accident proved to be of service in two ways: it showed conclusively that we were dealing with a false aneurysm, and by exploring the interior of the sac the points of entrance and exit of the artery were made plain; these served as excellent guides.

The vessel was dissected out and divided between ligatures one inch above the aneurysm. An attempt was now made to completely isolate and remove the sac, but because of its extreme tenacity and fragility the effort was but partially successful. During the attempt to remove the sac *en masse* a lateral tear in the popliteal vein occurred, which was repaired by lateral suture with fine catgut. The artery below the aneurysm was cleared to its point of bifurcation, and ligatures placed just above the bifurcation, at which point the vessel was divided. The original rupture in the vessel had taken place on its posterior surface. The anterior portion of the vessel could be identified as constituting part of the anterior wall of the sac. All of the vessels arising from this part of the vessel were exceedingly soft—ligatures applied with but moderate force would readily cut through the walls of the arteries.

The after-history was perfect except that the patient continued to complain of continual, dull, crampy pain on the dorsum of the foot and on both sides just behind the malleoli. This was at first attributed to ischemia, but when six or seven weeks had passed without relief some other explanation became imperative. Dr. F. W. Langdon was asked to see the case. He discovered marked ankle-clonus of both feet, hyperactive reflexes, weakness of right hand and arm—which the patient first noticed March 10—ptosis of left eyelid—this was an old condition, having been present many years—an area of anesthesia over the first metatarsal bone and plantar surface of the foot—the temperature sense was also absent in this area. Dr. Langdon gave it as his opinion that there was enough to justify a diagnosis of cerebrospinal syphilis, and that the symptoms were probably produced by thrombi.

The patient at the present time has entirely recovered from the operation, but the symptoms on the part of the nervous system persist but are much less pronounced.

Any method of treating an aneurysm must accomplish two objects: it must remedy the diseased condition, and this must be accomplished in such a manner as to inflict a minimum of damage on the tissues. The oldest method, that of Antyllus, which consisted in ligating the artery above and below the aneurysm and then splitting the sac, possessed one great drawback, i. e., it left a suppurating mass in the popliteal space, which took many weeks to close. This suppuration must have done harm by causing useless cicatricial contraction, and it also predisposed to the occurrence of secondary hemorrhage. In the treatment of popliteal aneurysm this method gave way to the Hunterian operation—ligation of the artery at some distance above the aneurysm. Time has proven this method to be inferior to that of Antyllus. Nevertheless, it has been adhered to as the classic operation. Mr. A. A. Rowley¹ makes the statement that

at St. Bartholomew's Hospital the superficial femoral had been ligated twenty-two times in the preceding ten years, for the cure of popliteal aneurysm. Gangrene of the limb took place in four cases—18.2 per cent.—and recurrent pulsation in two—9.1 per cent. These results were not the sequence of injury to the femoral vein. The number of cases here quoted is entirely too small to justify one in drawing general conclusions, but a method giving more than 27 per cent. of failures can not be considered an ideal one. This procedure is open to the objection that it is by no means a certain cure for the diseased condition, and it inflicts more damage on the limb than is necessary or advisable. It would appear therefore that the Hunterian operation should be abandoned providing a better method exists.

It can not be gainsaid that one single method may not be applicable to all varieties of aneurysm, so the present discussion will be limited to a consideration of the treatment of popliteal aneurysm.

The method by extirpation presents some advantages and some disadvantages. A proper appreciation and weighing of these may lead to an accurate opinion of its value and its range of application.

The first advantage of the method by extirpation lies in its attacking the disease directly. There is a double advantage in this—it gives one a very clear idea of the local conditions, and it permits the operator to vary his procedure in order to meet the exigencies of the particular case. The Hunterian operation has the double disadvantage of leaving one in doubt as to the local condition and it permits of no variation. It is simply the classic operation of tying the superficial femoral artery at the apex of Scarpa's triangle.

A second advantage of the method by extirpation is that it interferes with the circulation of the leg much less than does the operation of Hunter. Only that portion of the vessel which is involved is obliterated, and the ligature is much farther from the heart than when the superficial femoral is tied. This permits of the more ready establishment of the collateral circulation and diminishes the risk of gangrene.

A third advantage of the method of extirpation consists in the greater certainty of cure. When one comes to deal with this statement he finds that the figures are small, but the deduction seems to be irresistible. Ransohoff² records twenty-eight cases in which aneurysm of the large vessels of the extremities was extirpated. All were cured. Gangrene and secondary hemorrhage did not occur at all. A comparison of these figures with those of Bowlby (quoted above) seems to prove the very decided advantage of extirpation as a curative measure. Aside from the greater probability of cure the mortality following extirpation is less than that of proximal ligation. Delbet places the mortality following extirpation at 11.32 per cent., and that following proximal ligation at 18.92 per cent.

Certain disadvantages, some real and some imaginary, have been urged against extirpation of popliteal aneurysms. In the first place it is said that the operation is a harder one than that of tying the superficial femoral. Even granting this to be true one can scarcely urge the difficulty of its performance as an argument against its adoption. The same line of argument would deprive us of many of the modern operations. If the results are better, mere difficulty of performance can not be held as a valid objection to its use. We all know that ligation of the superficial femoral is a classic operation, but one

¹ British Med. Jour., Nov. 29, 1890, p. 1237.

² Annals of Surgery, 1894, p. 83.

may well doubt whether it is in all cases easier of performance than is ligation above and below with extirpation of the sac. Injury to the femoral vein will almost certainly eventuate in gangrene and amputation; while injury to the popliteal vein has frequently been reported—it occurred in the case reported above—without any evil after-effects.

A second objection urged against extirpation is the likelihood of the vessel, in the immediate vicinity of the aneurysm, being the seat of disease. Bowly has shown that this assumption is unwarranted, and that there is just as much likelihood of the femoral being diseased as of the popliteal. The non-occurrence of secondary or recurrent hemorrhage in a single case is the very best answer to the above assumption.

A third, and real, disadvantage is the greater danger of infection with its attendant consequences. The parts are more disturbed and torn in extirpation than in proximal ligation, still there is no reason why, under proper asepsis, suppuration should be a frequent sequence. The ill effects of suppuration are well illustrated by a case reported by C. E. Harrison.² In this case extirpation was practiced after compression had failed; suppuration occurred, followed by gangrene and secondary hemorrhage. Amputation was necessary to save the patient's life. The aneurysm, in this case, followed a penetrating wound of the popliteal space, and this was undoubtedly infected prior to the extirpation. This case may also prove that it is unwise to resort to prolonged compression as a means of treating aneurysm.

A fourth objection to the operation of extirpation is the length of time required for its performance. In the case of a young, vigorous person this feature is not a serious one, but when dealing with the old and decrepit it assumes increased importance. One may safely assert, however, that a person who is too weak to stand the additional time required, is, in all probability, not a proper subject for any such serious surgical operation.

Kubler⁴ has collected 40 cases of aneurysm treated by extirpation; 28 of these cases were arterial, and 12 arteriovenous aneurysms. The aneurysms were non-traumatic in 11 cases, and the result of injury in 29 cases; 39 of these cases were completely successful and no mention of either gangrene or secondary hemorrhage is made.

The latest statistics of this method of treatment are those of Dr. W. Kopfstein³, who records 86 cases of aneurysms, in various localities, which were treated by extirpation—27 were spontaneous and 59 traumatic. He also reports 16 cases of arteriovenous aneurysms similarly treated—2 spontaneous and 14 traumatic. Twenty-nine cases of popliteal aneurysm treated by extirpation gave 27 successes and 2 failures—1 death from gangrene and 1 amputation secondary to extirpation. This is a much better showing than that given by Bowly for the Hunterian operation—6 failures out of 22 cases.

Kopfstein also records the extirpation of 15 femoral aneurysms with 14 successes and 1 death from secondary hemorrhage on the tenth day. The method was uniformly successful in 4 cases of aneurysm of the anterior and posterior tibial arteries, in 3 of the carotids, in 1 of the subclavian, 3 axillary, 9 brachial, 7 radial, 5 ulnar. In 10 aneurysms located in various vessels, 9 were successful, and 1 of the posterior occipital, gave a fatal result from primary hemorrhage. In 86 cases of aneurysm in various parts of the body there were 82 complete successes. Death occurred in but 2 of the 86 cases—about

2.33 per cent. Failure to cure is recorded in but 4 cases, 4.66 per cent.

These figures are suggestive and indicate that a much more extended trial of this method is advisable. From the facts quoted above, the following conclusions seem to be justified:

1. The operation by extirpation is the most scientific of all methods thus far proposed for the treatment of aneurysms of the extremities.
2. It is by far the safest method.
3. It gives a greater percentage of cures and a less percentage of deaths than any other method.
4. The operation by extirpation should be resorted to without previous attempts at cure by any other method.

DISCUSSION.

DR. LEONARD FREEMAN, Denver, Colo.—As regards Dr. Oliver's interesting paper, I agree heartily with it, and if I should have a similar case, I should treat in the same way. Dr. Rickett's paper¹ is a good one, but he has left out of consideration gangrene of the lower extremity due to the injury of the vessels in the popliteal space. This is probably not due so much to the vascular injury or to the absence of collateral vessels, as to the fact that much blood is extravasated beneath the popliteal fascia, stopping the feeble circulation by its pressure. I would suggest that in the operation which Dr. Oliver has given us for extirpation of a popliteal aneurysm, it would be well to pay marked attention to this feature, and provide ample drainage.

DR. J. P. LOEB, Omaha, Neb.—I want to detain you a moment to recite a case bearing on the first paper. I was asked by a physician of Omaha to see a patient, in consultation with him, who had just come from the country, and who three months previously had been thrown from a wagon in a runaway. The young man was 20 years of age and had sustained an injury of the knee. He was laid up for about ten days with this injury, and then he was able to get about on crutches. The knee became no better and took on considerable enlargement. He came to Omaha. I saw him on his bed. There was this quadrilateral shape of the knee seen in hydrops articuli, and there was some local heat, from which I inferred that there had been infection. There was some edema of the foot, which indicated to my mind that this extensive accumulation about the knee had simply interfered in a mechanical way to produce this swelling. The parts were very painful because of a slight amount of inflammation, the temperature was only about 101 degrees, and I immediately made a diagnosis of abscess, of tubercular knee, incited by the trauma. The parts being very tender, I did not make a careful examination, finding that there was some fluctuation. In view of the fact that I thought an amputation might subsequently be a necessity, I made a lateral incision for the evacuation of this accumulation within the capsule of the knee. Much to my surprise I found a very extensive blood clot. This had extended half way up the thigh, underneath the quadriceps extensor muscle, and finding that it came from below and from the midst of the joint, I began to dig out the wound, when my hand went into cancellous bone structure, which seemed to be very much absorbed and very ragged. I then apprehended that we were dealing with an aneurysm of the popliteal artery, traumatic in character. Having gone this far I decided to clear out the blood clot, which I did. In the midst of this, a very free hemorrhage took place, which necessitated the immediate application of the Eschmarch, and on extending the incision I found, for a distance of four or five inches posteriorly, the bone had been completely hollowed out, so that there was simply a small spicula of bone anteriorly that held the shaft together. This was broken in our effort to hold up the limb while the tourniquet was being applied. Here was a desperate situation; consent for amputation had not been secured, but the amputation was done. I found on examination of this specimen that the distal end of the artery was completely occluded by blood clot, and here was this enormous accumulation from this traumatic aneurysm, and it was most incredible to me that this man had suffered from this condition for three months without any more disturbance of circulation in this extremity. It occurs to me also, that, had a diagnosis been early arrived at in this case, this limb might have been saved by the proper treatment, as indicated by the first paper.

³ Lancet, Jan. 21, 1896, p. 130.

⁴ Beiträge zur Klin. Chir., Bd. ix, H. 1.

¹ See Journal, August 12.

SOME COMPLICATIONS RESULTING FROM RECTAL OPERATIONS.*

BY WILLIAM M. BEACH, A.M., M.D.

Surgeon to Presbyterian Hospital; Fellow of American Proctological Society.
PITTSBURG, PA.

To sacrifice the minimum tissue and preserve the perfect function of an organ is the highest art in an operation for the eradication of disease. This proposition is especially germane to operative measures involving the anorectal region, for the reason that the mutilation of a single anatomic structure may determine disastrous sequences in the health and comfort of the patient. The notion is wide-spread in the profession, and taught by proctologic writers, that bold incisions and dissections of this region entail no permanent loss of function, trusting to the reparative processes of Nature to restore perfect order out of chaos.

Legitimate surgery of the anus and rectum involves the consideration of certain anatomic landmarks that must not be disregarded. Martin writes: "The three typical visible topographic features of the anal rectum are the white line of Hilton, the pecten of Stroud, or anal pilasters and the linea dentata." The integumentary membrane of which these visible landmarks are a part rests on a quantity of loose connective tissue, which permits of a great range of mobility of these features independent of movement of the structures, constituting the palpable landmarks of the fixed rectum. Marked pigmentation of the anal skin is observable in a circumscribed area about the anus; beneath this area of darkened skin lies the surgically unappreciated corrugator cutis ani.

In addition to these delicate structures that have peculiar physiologic functions pertaining to the act of defecation, the gut is poised and controlled by a motor apparatus, exact in its arrangement and composite in action. This muscular automaton consists, as stated above, of the corrugator cutis ani, the rectal sphincter whose aggregate fibers passing between the coecyx and central tendon form an ellipse surrounding the terminal portion of the gut. In the female, these fibers continue to form the sphincter vaginae by a figure-of-eight. At the central tendon, fibers of the transversus perinei unite with it. The function of the rectal sphincter is accessory to the anal sphincter in controlling the escape of the fecal column, and is for the most part voluntary, while the involuntary terminal circular fibers or anal sphincter regulates, through the cerebrospinal centers, the passage of rectal contents. The levator ani is a broad muscle forming the basis of the pelvic floor, and serves to lift the relaxed anus over the fecal mass in its descent.

With these perfunctory observations before us, we now pass to a brief consideration of some complications following operations or injuries on the fixed rectum, or that portion limited above by the levators ani, and below by the corrugator cutis ani: 1. Incontinence. 2. Stricture. 3. Elongation of the anal rectum. 4. Ulceration and hemorrhage. 5. Loss of rectal sense organs. 6. Suppuration and phlebitis. Any or all may be the sequelae to operations for the removal of hemorrhoids, fistulae, adenoids, fissure or malignant neoplasm, but the writer has in mind the minor operations only.

Incontinence is probably the most common complication arising from the operation for fistulae; especially is this true if the disease occupies the anterior quadrant, because by the surgeon's severing the fibers of the

rectal sphincter, the incised extremities are kept apart by the contracted transversus perinei, and thus prevent union.

In a recent exhaustive paper by Dr. Kelly, on rupture of the perineum, he lays important stress on the function of the anal sphincter, and its repair necessary for complete control of the bowel. These fibers retract permanently when cut or torn, by aid of the transversus perinei—hence to avoid this accident the divided portions should be adapted by suture. Multiple incisions are to be avoided, since the fibers will retract toward their points of insertion and be held up by levators ani, and we are constantly reminded that the muscle is to be cut but once in the lateral quadrants even in multiple fistulae.

Incontinence is liable to follow divulsion in syphilitic and tubercular patients. In such cases the efforts of the proctologist to relieve his patient will be followed by disgust and ingratitude—indeed, what more unenviable position could a patient be placed in? It ostracises him completely. Incontinence may follow the removal of hemorrhoids explicable on the ground of muscular impairment.

The direct antithesis of incontinence is stricture. This is the result of vicious cicatrices consequent on the unskillful use of the clamp and cautery, and hence is a not uncommon complication following operation for the removal of piles. The danger in the clamp and cautery is the removal of too much tissue, especially the integumentary membrane, which will be followed by contraction. An operation is recommended for the cure of pruritus ani, which consists in the dissection of the peri-anal skin. Though it may be the lesser of evils, contraction is almost certain to follow, besides complete destruction of the integumentary muscle. It is argued that stricture following operations, readily and permanently yields to secondary divulsion.

Elongation of the anal rectum is a permanent contraction due usually to the removal of internal hemorrhoids without complete divulsion, or vicious cicatrices from incisions for fistulae. This complication is a corollary to stricture.

Hemorrhage is a temporary danger following cutting operations. This is especially true of the removal of polypi, since they are exceedingly vascular, each being supplied by an artery in the pedicle. In this connection it is pertinent to state that hemorrhage is a complication most to be feared in valvulotomies, and requires special instruments for its control.

The "hemorrhoidal inch" will sometimes form the site of single, multiple or continuous ulcers following operations, which become a nidus for bacteria and toxins, producing tenesmus and chronic diarrhea, or rather mucorrhea. These patients will complain of a seeping and a constant sense of moisture. Post-operation ulcers may be avoided by antiseptic measures to encourage healthy granulation.

In lieu of the existence of the special rectal sense of Stroud being necessary to the healthy activity of a normal rectum, any operation conceived that will destroy this organ is to be deplored and condemned as unsurgical and unscientific, especially in the removal of piles. For this reason, we mention Whitehead's operation only to reject it. The pectinæ, in which resides the end bulb, form the basis of the pile, and care should be taken to remove such portions of the hypertrophy as will leave the end organ intact. Destruction of the rectal sense organ leads to delayed defecation and constipation with the usual train of sequelae.

*Presented to the Section on Surgery and Anatomy, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

Wounds not healing by first intention invite infection, which leads to suppuration and phlebitis. The occurrence of ischio-rectal cellulitis and abscess is a complication that entails disfigurement incomparably greater than any disease for which a minor operation is required. Healing by first intention should always be encouraged if possible, by the free use of catgut sutures, and the period of convalescence be thereby materially lessened.

The technic of minor operations on the anal rectum, and the strict application of the principles of antiseptics will contribute incalculably toward success, and remove that fear extant among the laity that operative measures are fatal, or are not conducive to permanent cure.

DISCUSSION.

DR. J. R. PENNINGTON, Chicago.—While it is true that strictures, ulcerations, incontinence of feces, etc., occasionally follow rectal operations when done by the inexperienced operator, yet we rarely find these sequelae when the operation has been performed by a skilled proctologist and efficient after-treatment administered. I believe that in many cases the final result depends as much on the after-treatment as the operation itself. After most of my rectal operations, especially those for hemorrhoids, I introduce into the rectum a rubber-covered rectal tampon. I find this a most valuable method, far superior to any gauze dressings. Its removal is painless and it leaves the wound in such a condition that the bowel movements are also painless, a point which seems to us of much importance.

DR. CHARLES MARTIN, Cleveland, Ohio.—It seems to me that a more fitting title would be, "Bad Results of Bad Surgery and How to Avoid Them." There has been much mutilation practiced on the rectum. There are one or two points suggested in this paper on which I would like to make comments. There has been during the past few years practiced in this country an operation known as "the American operation," a most un-American procedure—for it is American to permit the greatest individual liberty and privilege and to encourage the accumulation of possession and the retention of those things which we have. I sent, into the central western states three years ago, 7000 circulars, to the profession, inquiring as to the results of the mis-called "American operation," and I have many letters reporting over six hundred cases of most disastrous results from that operation, results worse than the conditions which it was designed the operation should relieve. There is another point referred to in Dr. Beach's paper, having particular reference to the mechanism of the sphincter ani and of the transversus perinei—he refers to the difficulty of getting coaptation of the anterior quadrants of the sphincter when the ends are divided in surgery or torn by accidental means. These sphincter-ends may be sutured and made secure provided an additional operation is performed on the transversus perinei muscles and on the coccyx, which will take all the tension off the sphincter and give it time to unite. If an incision is made through each transversus perinei muscle, and if the tip of the coccyx—last bone—is divided from its fellows, all the muscular structures about the anus are set adrift and almost immediate union of the sphincter follows.

USE OF ACETANILID IN VARIOUS COMBINATIONS AS A SUBSTITUTE FOR MANY PROPRIETARY DRUGS AND MIXTURES.

BY LOUIS FAUGERES BISHOP, A.M., M.D.
NEW YORK CITY.

Those of us who are confused by the claims of the ever-appearing antipyretic analgesics should consider one method by which we can obtain definite knowledge of this special class of drugs. It is better to know one drug well than many partly. For a long time I have not prescribed any new drugs of this class, but have substituted acetanilid in such a combination as seemed desirable for the case. In doing this I have also returned somewhat to the custom of prescribing liquid medicines. Acetanilid is not soluble, but it is readily suspended in

syrupy mixtures so that one can write for acetanilid combined with ammonia in any of its forms—salicylic acid, nux vomica, digitalis, codein, creosote, bromid of potash, or indeed almost any drug, and obtain a prescription that can be much more readily adapted to the case than is possible where any of the ready-made combinations are used that are sold under so many registered names to such enormous profit to the alleged proprietors of the same. The fact should be known to the profession that the foundation of most of these drugs is practically acetanilid, and any particular virtue that is claimed for them is obtained by the admixture of bicarbonate of soda, caffeine, carbonate of ammonia or some other such drug. Now these may or may not enter into chemical combination with the drug. The difference between a mixture and a loose chemical combination of organic products is often so slight that it is not worth considering. Practically in the body these drugs are broken into the acetanilid radicals and the other drugs, and for that reason it is much more professional and scientific to write for the mixture that we wish to use than to be the slaves to a secret medicine fad.

This is as much a pharmaceutical as a therapeutic problem. It is for pharmacy to decide the truth of the familiar claims of the owners of proprietary medicines, that they are in possession of some magic process of combination, or some method of purifying drugs unknown to the pharmacist in general that gives them the right to control and own particular remedies. It would seem that a man who had devoted himself to a profession, such as pharmacy, would be able to discriminate promptly between true and false claims of this kind. The *bete noir* of the proprietary medicine man is the substitution, by the pharmacist, of an equivalent combination for his elaborately advertised and prettily named remedy. Nor in the long run is it judicious for physicians to countenance this habit. However, it is within the legitimate province of the physician to substitute just as much as he pleases in prescribing, and the number of mixtures written for under specific names will be in inverse proportion to his knowledge of their constitution and composition.

There is another great class of remedies that is particularly abused, namely, the preparations of iron. In time the greed of the manufacturer often transfers his remedy from the domain of professional use to that of a nostrum, chiefly employed by the public. It is hard to see how the respect of the profession can be maintained by the foras of advertising that have already been put into use. Perhaps the most generally useful combination of acetanilid when used as an analgesic is the migraine tablet. This is equivalent to at least several of the most widely used secret mixtures that are sold under a specific name. It consists of two grains of acetanilid and one-half grain, each, of caffeine citrate and monobromate of camphor. The caffeine neutralizes much of the depressing effect of the acetanilid and monobromate of camphor acts favorably on the nervous system. These tablets are convenient for office use and for the pocket case as a general and efficient analgesic. Another useful combination that can be prescribed in capsules is acetanilid and quinin. A grain of acetanilid will neutralize the disagreeable effect of four or five grains of quinin. As a general tonic, when a patient is very uncomfortable from a cold, 1 grain of acetanilid with 2 grains of quinin three times a day, makes a good adjuvant to other treatment. In rheumatic conditions and those in which there is a suspicion of

*Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

intestinal fermentation, acetanilid and salol can be prescribed in capsules. For the disagreeable disturbances of circulation and neuroses of the menopause, a useful prescription is a mixture that will give 2 grains of acetanilid, 15 grains of bromid of potash to 1 dram of simple elixir. The acetanilid does not dissolve, but is well suspended in the viscid vehicle.

Indeed, a small amount of acetanilid can form an ingredient of any one of a large number of familiar prescriptions, supplying a valuable anodyne and antiphlogistic remedy. For instance, a useful cough mixture can be composed of acetanilid, aromatic spirits of ammonia and syrup of tolu. It combines well with bromid as a hypnotic, and may be prescribed in powdered form to be mixed with water. It is a useful addition to various mixtures for acute indigestion, helping distinctly in the relief of pain; for instance, in these very severe cases of flatulence, causing tremendous distress after meals, relief is obtained by a teaspoonful of the following tincture.

Acetanilid	5iij
Tinct. nux vom.	5iij
Tinct. capsicum.....	5ss
Tinct. gentian. comp.....	5iv

M.

As a substitute for iodoform and a host of other antiseptic dusting powders acetanilid has been found to be very efficacious. It has the endorsement of successful surgeons, and there seems no reason to doubt that acetanilid in powdered form, or mixed with equal parts of boric acid, can easily replace the long list of antiseptic powders used in surgical disorders. There is a danger of toxic absorption, but this is true of all the others, and it is more likely to be understood, recognized and guarded against if one substance is habitually used than if the surgeon is constantly changing from one antiseptic to another.

In making this study of the practical therapeutics of acetanilid, it is not my desire to in any way antagonize those who deal in these preparations corresponding to these various prescriptions. My plea is rather for a better knowledge of these compounds so that the physician, if he does not wish to write his prescription, may use them intelligently. It is for the chemists to tell us what proportion of the new substances that are brought out represent important discoveries in pharmacy, and what proportions are mixtures, or such slight chemical modifications of well-known substances that they serve more to introduce mystery and confusion into therapeutics than to advance knowledge.

What is needed by the profession to-day is a better knowledge of drugs that it is using. It would be well if the new pharmacopeia could be the work of a genius, eliminating the thousands of drugs that have fallen into disuse, and enumerating only those of practical importance, so that in the next generation physicians could concentrate their attention on fewer drugs, and acquire thorough knowledge of these. It is impossible to eliminate patented drugs from use, but there should be some authority which fearlessly would give a true and impartial opinion as to their construction and therapeutic value. One hardly realizes how much the profession really stands in fear of the influence of some of these drug companies. I remember that once, at a state society, I spoke in a disparaging way of the most widely advertised secret acetanilid mixture, and was approached after the meeting with the advice that it would be better not to antagonize a company that gave so much advertising to the medical press. I noticed that my remarks were eliminated from the report in the most

prominent medical journals. It should not be the duty of any individual to lay himself open to lawsuit and possible persecution in behalf of the medical profession in exposing the true value and construction of drugs. It would seem that the time had come when there should be some central body which could be entrusted as a court to give a verdict on the true composition and value of drugs. Some foreign countries have laws prohibiting the sale of secret preparations and making it a misdemeanor to sell drugs at a greater price than a reasonable profit.

There will be a stubborn fight on the part of the owners of certain secret remedies for their introduction into the pharmacopeia, and it is almost certain that they will not be admitted. While it must be acknowledged that some patented synthetics must be admitted, still care must be exercised that under the cover of these really new drugs a great many worthless ones are not also introduced.

PROGRESS IN SERUM THERAPY*.

BY GEO. W. COX, M.D.

CHICAGO.

The gradual unrolling of the scroll which displays the evolution of serum therapy brings into view one of the most pleasing pictures to be found in the gallery of medical art. It presents to us the image of a system whose present status was attained with a suddenness bordering on abruptness; and whose steady growth gives promise of eventually placing it in line with established sciences. My definition or conception of serum therapy must not be construed to limit the practice to the administration of antitoxins; but to embrace the treatment of disease with all such substances as are the natural outgrowth of applied bacteriology, which in turn is the result of the germ theory. Strictly and technically speaking some of these would necessarily be excluded from consideration under this head, because they are not serums, as that term is popularly understood and applied. However, the principle involved is essentially the same; and inasmuch as it would be impracticable to create a separate department for each substance, I hope the general term serum therapy may, for the present, at least, be accepted in such a broadened sense as to include medication by toxins, antitoxins, all blood-serums and vaccines; and let subdivisions of the subject be determined by future study and development.

An idea may be transformed into a theory instantly, and a theory into an art with moderate precipitation; but the conversion of an art into a science is a process of deliberate growth and can only be accomplished through the media of time, of skill, of patience and of labor.

Serum therapy is an art; and while its position as such is of recent date, it is descended from an idea so ancient that no man can reckon its birth or point its origin. Even the second degree of progression, the stage of theory, is so veiled in the gloom of antiquity that history fails to record the transition. The human race seems to be endowed with one principle which is common to all peoples in all ages, namely, the intuition to worship and to heal. Even among nations that are regarded by us as wholly uncivilized, where letters are unknown and environment the most crude, some sort of deity is recognized and some sort of "medicine man" is found; and concerning these two personalities, the spark of genius has, from age to age, occasionally flashed forth to break the blackness of the general gloom.

*Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Fifteenth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

Anxiety for present health and for future life and happiness may constitute the only beam of intelligence discernible in an entire tribe; and no matter how benighted the race or barbarous their habits, on these two points the power of reasoning has never been entirely lost. The idea of deity and the idea of physical cure are co-existent with human life; and while in each instance the idea may have stopped far short of reason, as we are able to discern and exercise it, it has usually been sufficiently progressive to crystallize into some form of theory. So it has long been with the art which we are now able to demonstrate, and the science which we hope to establish. Serum therapy, in principle, if not in name, has been a theory for many centuries, playing hide-and-go-seek with the seekers after truth, but never forgotten, never entirely lost, and constantly suggesting to inquisitive minds the possibilities of ultimate victory in the line of great achievement and of great usefulness. Before the days of Jenner, of Galen, of Celsus or even of Hippocrates, the idea of cure by inoculation had passed to the theoretic stage, and had even been put to practical test by a people whom we have been taught to regard as hereditary heathen. From this most anciently known source, then, inoculation has extended through succeeding centuries, and has at various times been practiced by the Chinese, the Hindoos, the Persians, the Arabians, the Egyptians, the Turks, the Continental Europeans, and finally by the English, who first established it on its present practical footing by the marvelous discovery of Jenner. Crude as their methods must have been; unsatisfactory and disappointing as their results, in the main, surely were; without the advantages of modern education and equipment; with no knowledge of bacteriology, of chemistry, of the microscope, the spectroscope or even of human anatomy and physiology, the ancient physicians were like a mariner in mid-ocean without compass or sextant, without rudder or sail. But even so, they did not sit down to waste and starve in idleness; they did the best they could—they looked at the stars and plied the oars.

Perhaps it is not entirely just to our ancient brethren to assume a position for them that would make their achievements look altogether like the result of accident or of instinct, for occasionally we find traces of practices that could only have been devised under the guidance of a well-balanced reasoning power. For example, in the department of serum therapy, the very latest addition to our galaxy of "new discoveries," in a very ancient Hindoo medical work entitled "Sacteya Grantham," the following remarkable description of smallpox vaccination occurs: "Take the liquid of the pustules of the cow's teat, or from the arm of a human being, between the shoulder and the elbow; place it upon the point of a lancet, and introduce it in the arm at the same place, mixing the fluid with the blood; the fever of variola (Bhadvidee) will be produced. This disease will be mild, like the animal from which it is derived; it need not cause fear, and requires no remedies; the patient may be given the food he desires. The pustule is perfect when it is of good color, filled with a clear liquid and surrounded by a red circle." Nothing short of sound reasoning, close observation and practical experience could invent such a systematic procedure as this; and it would even be difficult to more accurately describe it. Where the Hindoos received their knowledge of inoculation, or how long, or with what success they practiced it, are among the things that erratic history does not record; but notwithstanding their familiarity with the subject, as evidenced by the above

terse description, the art was permitted to become entirely lost, leaving nothing but traces of the theory, or even of the primitive idea, for succeeding generations to grasp and build upon. And so tradition and history furnish us with occasional glimpses of the medical mind during a period of two or three thousand years that prove conclusively that much originality, much ingenuity and much practical knowledge have, from time to time, been displayed throughout the centuries that are dead. This does not detract in the least from the halo that decks the brow of modern fame, for the re-discovery of a lost art by means of original research is entitled to all the glory that clusters about archetypal production. The work of Jenner and that of Pasteur are as truly original as any that was done in the long forgotten past, or ever will be done in the years to come; and it is to the genius of these two men that the world is indebted for the saving of more human lives than to that of any other score of men who ever lived. Jenner applied smallpox vaccination empirically, to be sure, for he was without bacteriologic knowledge necessary to account for his magnificent clinical results on a scientific basis; but if he had waited for the acquirement of this knowledge before applying his remedy, several decades would have rolled by and millions of helpless victims would have yielded to the relentless power of variola.

Half a century after Jenner's great triumph, the first promise of a solution of the entire vaccinal problem was given in Pasteur's discovery of the cause of fermentations. From that moment, and from that incident, bacteriology began to take form and to grow into the ever-spreading science whose branches have now extended around the globe to shed blessings on suffering humanity in every land. Pasteur not only pointed the way for others to follow, but by original discoveries and demonstrations, rendered their work of development comparatively easy. Through Pasteur's discoveries it was made possible for us to know just how and why vaccination protects against smallpox and other diseases, and thus the great work of Jenner is rounded out and made into a monument to the genius of both the beginner and the finisher. In like manner it was Pasteur's work that paved the way for the discovery of every disease-germ that has been found since his time or that shall be discovered hereafter.

The discovery and demonstration of the cause of a disease is a long stride in the direction of controlling the disease itself; and inasmuch as the science by which this is accomplished with respect to infectious maladies is founded on such a solid basis, and is in a state of such healthy growth, we have come to regard such discoveries as a matter of course, and but little surprise is expressed at the announcement of the capture of a new offender. Likewise, we are constantly expecting to hear of the discovery of new remedies along the lines of serum therapy, and our patience grows weary because they are not more rapidly forthcoming.

Between the time of the discovery of the bacillus anthracis by Pollender, and that of the vaccin which so completely controls the disease caused by it (anthrax), by Pasteur, there is a period of thirty-two years, notwithstanding the fact that a noted French physician had, in the meantime, experimented with the germ sufficiently to establish an undeniable etiologic relationship between it and the disease. In 1876 Pasteur began the methodic study of anthrax; and while he was the acknowledged leader in the line of work pertaining to micro-organisms and their effects, it was not until 1881 that he was prepared to announce and demonstrate the

discovery of a vaccin that would effectually prevent the disease. This announcement, together with the faith that had been inspired by his former discoveries, seemed to stimulate bacteriologists to greater effort; so that not a year has elapsed since that time in which something new and useful has not been recorded, either within the walls of the great laboratories founded by Pasteur, by some pupil of his or by some one who had profited by his teachings. In all, something like two hundred pathogenic micro-organisms have been discovered, many of which have yielded up their secrets and their power to the superior force of science. Nearly three-fourths of the entire number belong to the class known as bacilli, almost one-fourth to the division called microbes, while a few only are included in the group designated spirilla.

Following closely on Pasteur's discovery of anthrax vaccin came, from a pupil and co-worker of his, the announcement of the discovery and successful application of a vaccin for the prevention of symptomatic anthrax, or blackleg, as it is more familiarly known in this country. Anthrax and blackleg had become so prevalent, and their ravages so great, in many parts of the stock-raising world that financial ruin was not only threatened but actually experienced in many instances. The two vaccins just mentioned have so fully and completely fulfilled the requirements as preventives, that where vaccination is practiced at the proper time, outbreaks of anthrax and of blackleg are now simply matters of history. In no branch of medical science has the power of a remedy ever been so beautifully shown and universally successful as in the control of these two animal scourges; and if serum therapy had stopped short at this stage of its progress, its name on the escutcheon of fame would have been written in letters of living light. But it did not stop here. Forging its way by slow and tortuous steps, it has advanced until to-day we have it in a system which promises absolutely perfect and definite results in its important, if limited, sphere. Hog cholera, which has cost the American farmers multiplied millions of dollars during the present generation, seems just on the verge of losing its terrors through preventive inoculation; veterinary tetanus and purpura hemorrhagica are more amenable to serum treatment than to any other, while the certain detection of tuberculosis and of glanders in their earlier stages is made easy, and their general management greatly simplified, by the application of the principles of serum therapy. Other veterinary diseases, such as pleuropneumonia, rinderpest and a number of others of less importance, have been studied with great interest, and usually with encouraging results, but their further consideration must be left to the future.

Passing now from the veterinary field to a consideration of serum therapy as applied to the human subject, we find that the vastly increased importance of our theme is more than proportionately recognized and acknowledged by the profession. The efficacy of antitoxin in the treatment of diphtheria is no longer a debatable question, for by dint of proofs innumerable and incontestable, the remedy has gained the enthusiastic indorsement of an overwhelming majority of the medical profession. It seems to me to be particularly fortunate for the system of serum therapy that one of the most dreaded of all infectious maladies should have been the first to completely yield to its influence; for it is a reasonable argument that if diphtheria may be thus conquered, many, if not all of the others, must sooner or later fall into the line of subjugation. If the first statements of Roux and Behring had not been borne out by subsequent tests,

and their promises had not yielded such immense returns, it is quite likely that incredulity and lack of interest would have largely predominated in the public and professional estimate of the antitoxin theory, and many years might have elapsed before another impetus was given to its slow but persistently onward motion. However, as the tide of fate was favorably turned thus early, investigators all over the world at once took a renewed interest in their work, and subsequent developments have fully justified their efforts. Up to the present time, no other human disease has so completely yielded to the curative power of serotherapy as has diphtheria; but from some of the most recent investigations a number of valid reasons have been discovered and cited for this, and which have in no way discouraged the friends of the system beyond that degree which belongs to unavoidable delay. For example, it has been found that infectious diseases are frequently so complicated by the invasion of other micro-organisms that two or more distinct pathologic conditions coexist in the same subject. The complications may either intensify or mask the original malady; and in a paper I presented to this Section one year ago, I cited a number of cases of tuberculosis which presented all the classic symptoms of far-advanced pulmonary phthisis, but which, after being freed from their complicating factors proved to be mild and easy to control. The most striking of these cases is still under observation; and the tubercular element, while still in evidence, has apparently not advanced in the slightest degree for more than two years, and the patient is attending to business interests that he had wholly relinquished in the fall of 1896. Before the days of serum therapy, cases like this would have been either abandoned as hopeless or sent to some mountain or seaside resort—too late to receive any benefit from the change. Climatic changes are of great importance in properly selected cases, and I do not wish to undervalue them; but cases like the one just mentioned could receive no benefit from climatic influences alone, and having practiced for ten years in one of the most noted resorts in the United States for the climatic treatment of tuberculosis, I can recall a number of similar cases that came to us only to sink rapidly to dissolution. It is not claimed that there is an antitoxin or an antitubercle serum that can be depended on to combat tuberculosis in its various forms and phases; but it is claimed that serum therapy furnishes us with a sure means of detecting the disease in its incipency—even before its location in the organism can be made out—and far in advance of any other means of diagnosis. The importance of early diagnosis is self-evident. If no complications exist, and the general conditions are favorable, tuberculosis is quite manageable in almost any climate; but if for any reason a change becomes necessary or desirable, serum therapy enables us to advise that change at a time when benefit might reasonably be expected. Moreover, if the case has been permitted to progress until the infected area has been invaded by organisms far more destructive than the tubercle bacillus, serum therapy, while not perfect, not infallible, offers the only hope that comes within the range of our present knowledge. This hope grows brighter as the days go by and we note the advancement of this rapidly growing art; and to those of us who keep track of its progress the day of full fruition seems more than a possibility.

It is already well known to us that blood-serums act in different ways in different conditions, and that a full explanation of this variation is impossible with our present knowledge of the subject. Some of them have

a direct germicidal effect, some an antitoxic effect, while still others seem to act principally by cell stimulation or by producing phagocytosis. Sufficient time has not yet elapsed for a full investigation of all these phenomena so that explicit reasons may be given for apparent discrepancies; but when we remember that small-pox vaccination was practiced with wonderful success for fifty years before its action could be fully explained, our impatience at the present time seems just a trifle unreasonable. The very latest addition to our knowledge of smallpox infection is the discovery of the bacillus of vaccinia by Stanley Kent, of St. Thomas Hospital, London, the announcement of which was made but a few weeks ago. The discovery should forever put an end to the former dangers encountered by the use of impure vaccinia virus and thus remove the only remaining reasonable objection to vaccination.

During the past year, while no astounding revelations have been made, such as electrified the world when Roux read his famous paper at Budapest, yet a number of important advances have been made and a few important discoveries announced. The antipneumococcal serum, which was entirely new at the time of my last report, has grown in favor, not only by Pane, its originator, but also by others who have given it a trial. Pane's own experience in Naples has been quite extended and very satisfactory; while at Guy's Hospital, Eyre and Washbourne have conducted a series of experiments which have established the value of the remedy to their entire satisfaction.

Tetanus antitoxin has grown wonderfully in favor during the year, owing, no doubt, to a better understanding of its action. Its greatest field of usefulness still continues along the line of prophylaxis, and in this respect it has no superior in any branch of medicine. Surgeons and veterinarians have come to recognize this fact to such an extent that a large number of them now make a routine practice of administering one or more immunizing doses of the serum after such accidents or surgical operations as are usually followed by attacks of tetanus; and in no case, so far as I know, has the disease developed after such immunizing treatment. The curative properties of tetanus antitoxin are also better appreciated than formerly, chiefly through the improved method of administering it. I refer to the intracerebral injection devised and first practiced by Prof. Roux, of the *Institut Pasteur*, Paris. This method, while rather too formidable for the general practitioner's application, is easily within the scope of the ordinarily skilful surgeon, and many successful operations have been reported since its first introduction, a little more than a year ago.

STREPTOCOCCAL INFECTION.

It has been my good fortune to see and study a large number of cases due to the streptococcus microbe as well as to report on their treatment with Marmorek's serum. From the very first, my experience ran in pleasant lines, and the favorable impressions expressed in former papers are intensified by more recent investigations. So uniform has been the success of the remedy in my hands that in no case have I had reason to regret its use.

Now, please discriminate between the legitimate action of the serum and the recovery of a patient who, among a multiplicity of pathogenic conditions may chance to number streptococcal infection with them. All that is claimed for the Marmorek serum is that it destroys the streptococcus germ and relieves such symptoms as are caused by it. If the case is one of purely

streptococcal infection, as we see in most cases of erysipelas, one or two efficient doses of the serum will quickly destroy the germs, relieve the symptoms, cure the disease and restore the patient's health. On the other hand, if the case is one of multi-infection, so frequently noticed in advanced cases of tuberculosis, in diphtheria, in scarlatina, etc., then the Marmorek serum will simply eliminate the one factor on which it is intended to operate and leave those remaining to be combated by appropriate means. In many cases of tuberculosis with mixed infection, the complication is far more destructive, or at least more rapidly destructive, than the original malady; and in some of these the most brilliant results are obtained from the timely use of Marmorek's serum. These, of course, are cases in which streptococcal infection is the only, or at least the principal, complicating factor, as mentioned in some of my former papers.

I have mentioned on several previous occasions that the antistreptococcal serum is one of the most difficult of its class to properly prepare; that it has been poorly made by several manufacturers; that it has been indiscriminately used by many physicians without regard to appropriate indications; that it has been given for cure of the patient, and not for the cure of streptococcal invasion; and as a result of these combined causes a number of failures have been reported. It has been my purpose to point out these facts and to endeavor to correct the errors and prevent the disappointments that are sure to follow laxity in judgment and method. To this end I have advised the use of the serum made by Dr. Marmorek himself, and not to trust to those prepared by manufacturers who even express a lack of confidence in their own productions. Carrying out this idea in practice, my experience with Marmorek's serum has been eminently satisfactory, and it is with much pleasure that I can refer to a number of fellow practitioners whose enthusiasm exceeds my own. Referring to the report of the committee of the American Gynecological Society, just filed, it is precisely in line with a prediction I made six months ago¹, and should not deter one from using the Marmorek serum promptly, fearlessly and confidently in all cases where the streptococcus is found.

Two discoveries have been announced during the year, which, if they prove to be well founded, are of such importance as to command our heartiest congratulations. I refer to the germs of cancer and of scarlatina; and I am only too sorry that the time since the announcements were made is so short that full confirmation is impossible. Most of the other diseases that have been subjected to serum treatment, including a few new ones added during the year, are still undergoing investigation, and nothing of special importance can be mentioned concerning them. However, it may be said that a few of the most dreaded, such as the bubonic plague, leprosy, yellow fever and Asiatic cholera, give greater promise of yielding to treatment than do those of a milder type. With men like Sanarelli, Yersin, Koch, Haffkine, Archinard, Marx, Sternberg, Jellinek, Ashmead, Clewom and others constantly on the trail of these terrible maladies, but little surprise will be expressed when their final subjugation is announced.

Since the writer's study of serum therapy began, about four years ago, a few glaring faults have been noticed and frequently commented on in the hope of seeing them corrected. One is the permission granted by our authorities for the indiscriminate manufacture and sale of antitoxins, blood-serums and vaccins without proper supervision. These are delicate substances, delicate in struc-

¹ New York Med. Jour., Jan. 14, 1896, p. 63.

ture, in nature and action; they are perishable and changeable to a degree unknown in any other class of remedies; their preparation deals with the infinitely small; contamination and ruin may creep in all unobserved and unsuspected by the novice manufacturer; the quality and strength of the finished product can not be determined by one of limited skill and experience; and finally, special equipment and favorable surroundings are an absolute necessity for the proper prosecution of this work. Clean, pure, reliable antitoxins can not be produced in a livery stable or in a veterinary hospital, any more than linen can be cleansed and purified in a blacksmith's shop. The fad for making antitoxins began as soon as antitoxins became articles of recognized utility, and the craze extended until antitoxins and blood-serums are on tap at short notice in many a dingy barn where not a single sanitary prerequisite for their production is to be found. All this is to be deplored; for no matter how little the manufacturer may possess, either in skill or equipment, a certain amount of his product will find its way to the consumer, where its failure will be noted and charged up against the entire system.

2945 Groveland Avenue.

EXPERIMENTS WITH PARALDEHYDE.*

BY C. C. HERSMAN, M.D.

Member Staff South Side Hospital, Medical Department; Lecturer on Materia Medica and Therapeutics South Side Hospital Training School for Nurses; Physician to St. Francis Hospital for In-sane; Member American Medical Association; West Virginia State (Honorary); Pennsylvania State; Allegheny County, etc.

PITTSBURG, PA.

This remedy was first introduced to the medical profession by Cervello. I think he was an Italian, as it was soon after reported by Morello and Bergesio at a meeting of the Italian Medical Association.

Paraldehyde is formed from an aldehyd or dehydrogenated alcohol by the action of an acid, either acetic, nitric, sulphuric or sulphurous. Some writers have called it an exaggerated aldehyd, as its molecular composition is a multiple of the latter by three, aldehyd being represented by the symbol C_2H_4O , and paraldehyde by $C_6H_{12}O_3$. When acted on by chlorin it is said to be converted into chloral. It is a colorless liquid, having an unpleasant taste and peculiar odor, which remains with the breath many hours after its administration. Its specific gravity is 0.998, boils at a temperature of 225 F., and is miscible in eight times its bulk of water. Some of the Italian medical profession recommend it as a sedative and hypnotic. For it are claimed all the good qualities of chloral, without its dangers; that it acts first on the cerebral hemispheres without the preceding excitement so common to hypnotics, and subsequently affects the medulla and cord; that in fatal doses it paralyzes the center of respiration, and the heart is last to act; that its hypnotic effect can be maintained by the repetition of sufficient doses; that no ill effects, no nausea, depression nor headache have been noticed after its free administration. This is in substance a quotation from the *Medical News*, on introducing the drug to the medical profession as founded on the experience of Italian reporters.

Another quality of the drug discovered by Cervello is its antagonism to strychnia, although strychnia does not antagonize paraldehyde, the antagonism not being reciprocal¹.

Of the American profession, Dr. C. L. Dana of New York, Dr. J. C. Wilson of Philadelphia, and Dr. J. R.

Uhler, have reported their experience with paraldehyde², and recently Dr. John V. Shoemaker of Philadelphia.

It has been used in sciatic and supra-orbital neuralgia, but gave only temporary relief. The dose was from .5 to 1 dram, with no bad effects. Dr. Dana thought it somewhat less sure and powerful than chloral, but that it might prove useful when that failed or was contraindicated. Dr. Wilson's observations do not seem to have been so favorable. He thinks it requires a speedy increase of the dose, and that while it may be safe, it will never supersede chloral. Dr. Uhler thinks the sleep produced by this agent is not so profound as that of chloral, but if a patient has to use a sleep-producing agent for a long time, paraldehyde is probably the best, as it does not cause excitement in the early stages of its action, nor interfere with the heart, and is probably a safer remedy. Dr. Shoemaker gives the most flattering report. It may be well to add that the taste and odor are so unpleasant that a patient would very likely not become addicted to its use except in case of necessity.

EXPERIMENT No. 1.

Six patients in the hospital were selected for the experiment.

The first patient, Mr. W., was given .5 dram, pulse 68; dose repeated in 30 minutes, pulse 65; returned in twenty minutes, found patient asleep, pulse 64; patient still asleep at 5 a. m.; on the following morning, pulse 84; no ill effects.

The second patient, Mr. T., was given .5 dram, pulse 68; dose repeated in thirty minutes, pulse 80; returned in twenty minutes, pulse 64, patient not asleep, but slept most of after part of night; bad headache next morning, pulse 72.

The third patient, Mr. K., was given .5 dram, pulse 88; dose repeated in thirty minutes, pulse 80; returned in twenty minutes, pulse still 80; patient slept very little, if any, during the night; no ill effects.

The fourth patient, Mr. C., was given .5 dram, pulse 84; dose repeated in thirty minutes, pulse 65; returned in twenty minutes, pulse 64; patient up all night and tore up his bed; no ill effects.

The fifth patient, Mr. N., received a dose of .5 dram, pulse 68; repeated in twenty minutes, pulse 64; returned in twenty minutes, patient dozed, pulse 60; he slept well during the night; no ill effects.

The sixth patient, Miss C., was given .5 dram, pulse 96; repeated in thirty minutes, pulse 100; twenty minutes later, pulse 92; patient slept two hours during the night, no ill effects.

At another time five female patients were selected, who were kept on the medicine for a number of nights in succession.

The first patient, Miss C., same as before mentioned, was given .5 dram, which was repeated in thirty minutes; only slept a few minutes during the night; the second night she was given 1 dram, but slept none; next morning she had a headache, dry mouth, and was crying and begging the nurse to give her something to relieve her misery and put her to sleep. She ever after refused to take the medicine.

The second patient was given .5 dram, repeated in thirty minutes, and slept well; the second night she was given a dram and slept after one hour. The third night she was given 2 drams and slept in half an hour; the fourth she was given 2 drams, seemed stupid, but slept very little during the night.

The third patient was given .5 dram, repeated in thirty minutes, but slept very little all night; the sec-

*Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

¹ Med. Record, November, 1883.

² *Ibid*, August 25; N.Y. Med. Jour., Dec. 15, 1883; JOURNAL, May 3, 1884.

ond night she was given 1 dram, and still slept very little; the third night she was given 2 drams, but had very little sleep, and the fourth night she was given 2 drams, but remained up all night.

The fourth was given .5 dram, repeated in thirty minutes, with no sleep; the second night she was given 1 dram and rested moderately well; the third she was given 2 drams and slept very little, and the fourth night she was given 2 drams and slept well.

The fifth patient was given .5 dram, repeated in thirty minutes, with no sleep; the second night she was given 1 dram and slept very well; the third she was given 2 drams and had very little sleep during the night, but the fourth, given 2 drams, she rested much better than on the previous night.

On the fifth night, the night-watch reported all as resting well with one exception, but to her great surprise was informed that none of the medicine had been given.

This remedy has been resorted to in a number of other cases in which it acted like a charm, but in many it has failed me altogether. I tried the remedy on myself, but with such ill effects that I did not care to repeat it. As this was tried mostly in cases of insanity, it is, probably, not a fair test either for or against it.

Alcohol, we are sure, is a violent poison in large doses. In the dose of less than an ounce it has been known to kill a medium-sized dog, and many cases are on record of fatal effects being immediately produced in the human subject after comparatively small quantities have been swallowed. As paraldehyde is a preparation from alcohol, and much more concentrated, it is proof that it is more poisonous, unless it is denatured during the process of preparation. From reports of different experimenters, a number of patients who were given large doses complained of feeling very similar to those following debauch. Judging from the opinions of others, and that of my own experience, I do not consider it a good hypnotic. I found .5 and 1 dram doses to act better than larger doses. Headache was less liable to follow. Out of eleven cases selected, I can boast of but one happy result. In other cases I had some good and some bad results, occurring with the same patients. Also, we notice in most of the cases, the increase of dose seemed to add to the bad effect. In some cases I recorded pulsations, but took no notice of respiration. It is certainly a hypnotic, and while it may be safe, given in proper doses, I fail to notice any property which makes it equal to other remedies at our command.

EXPERIMENT NO. 2.

In testing it as a germicide I used the following:

Sugar (gram.)	.....	gr. xx
Yeast (dried) aa	.....	gr. xx
Paraldehyde	.....	ʒi
Distilled water	.....	ʒi

Misce.

I let the mixture stand one week in a warm place, with no fermentation whatever. From this and further observation I believe paraldehyde to be a germicide, but do not know the minimum per cent. at which it will act as such.

Finally, the taste of the drug is very disagreeable. A large quantity of water is necessary to dilute it for use, and the fact that it does not supply the demand already met by other agents, will, in my opinion, prevent its extensive use both in private and in hospital practice.

EXPERIMENT NO. 3.

A large dog was given strychnin sulphate, gr. i, at 9:45 a. m., but on account of the very disagreeable odor and taste of the antidote—paraldehyde—its administra-

tion per ore was a failure, as only one dram was given in one and a half hours. Still the effects of the poison did not show until about 3 p. m., possibly being retarded by the antidote. At 6 p. m. I found him in tetanic spasms of a very severe type, a mere touch being sufficient to throw him into convulsions. At this time I gave hypodermatically, paraldehyde, m. xl, at 6:30; half an hour later I repeated, m. xlv, also hypodermatically, and left him for the night. On the following morning the dog was reported dead. At 4 p. m., on learning that he was alive, I proceeded to his kennel, at which time he partook of raw beef freely. He made a complete and rapid recovery.

Three weeks from the time of this experiment, at 9:30 a. m., I administered to the same dog, paraldehyde, m. xxv per ore, at the same time giving him strychnin sulphate, gr. i., immediately after followed by paraldehyde, m. xxiv, hypodermatically. In one hour, m. l, two hours later, m. l, and at this time he ate raw beef freely. At 6 p. m. I repeated, m. xxv—all hypodermatically, except the first m. xxv—and left him for the night. During this experiment he did not reach the spasmodic stage, although locomotion was very much disturbed, which possibly was partially caused by the free use of the paraldehyde. Next morning he refused to eat, but I think it was possibly on account of a sore mouth, caused by the first dose of paraldehyde, fearing that the meat was again saturated with it. At noon, however, he ate with relish, but deglutition was somewhat disturbed. On the following morning he ate again, and took water freely, deglutition still slightly disturbed. He made a perfect recovery. With this limited experience I am forced to believe that it is at least partially a physiologic antidote to strychnin. However, to establish this conclusion further observation must be made.

The experiments of Prof. Bokai confirm what I have stated. "In no case did the strychnin produce death, neither in moderate nor lethal doses, but in fatal doses of paraldehyde, strychnin had no effect in removing the poisonous symptoms, or to delay its fatal processes. Hence the antagonism is probably one-sided." The hope is not unreasonable then—and in fact, proven in my case—that if paraldehyde be given soon after symptoms of a poisonous dose of strychnin it might serve to antagonize it. Should it prove to be an antidote, its use for this purpose would be almost without risk, since it is freer from unfavorable action on the heart and respiratory center than that possessed by chloral and chloroform, which are known to have some antagonistic power to strychnin. But before these conclusions can be accepted as established, much more elaborate experimental research must be made.

The Italian observers give us the most favorable reports. I have observed, however, that in large doses we may have, in some, symptoms similar to those following a debauch. I have often used it in acute alcoholism, with very marked hypnotic effects when other hypnotics have failed to produce sleep. In properly selected cases I find it to act very well, but as a universal remedy I do not think it as good as some others at our command.

Since the cord in a dog is much larger in proportion than in a man, and the principal physiologic effect is on the cord, would not a grain dose of strychnin be greater in proportion to the relative sizes of the spinal cords of the dog and man? This so, it would require a much smaller dose to counteract the same amount of strychnin in a man.

It might be well to mention here the dangers of a con-

tinued use of paraldehyde, as a number of cases of drug habit have been published which seemed to be as serious in its nature as that of any other drug habit.

ACCIDENTAL WOUNDS OF THE FEMALE BLADDER.*

BY FREDERICK HOLME WIGGIN, M.D.
NEW YORK CITY.

Accidental opening of the bladder has, for many years, been considered one of the most serious accidents that could occur in the course of the complicated work which gynecic surgeons are often called on to do. It was not until 1886 that a successful case of intraperitoneal suture of the bladder was recorded by Sir William MacCormac and Mr. George Heaton, while White, in the course of an article in Dennis' "Surgery," states his belief that sutures placed in the wall of the bladder for the purpose of closing extraperitoneal wounds of the viscus are useless. This, coupled with the fact that there are on record comparatively few cases of injuries to the bladder successfully treated by suture, while accidents of this nature must be of common occurrence, makes it important that all individual experience bearing on this subject should be recorded.

Injuries to the inferior surfaces of the bladder generally occur in the course of the separation of the uterus from this wall, when the peritoneal cavity is entered by means of an incision made in the anterior vaginal wall. The accidental opening of the bladder in this situation is, however, less common than might be supposed, else as is the relation between the organs and the frequency of this procedure.

The following case is offered in illustration of this type of injury:

M. M., 37 years of age, was admitted to the gynecic division of the New York City Hospital, Nov. 1, 1897, suffering from ovarian disease, chronic endometritis and interstitial myomata, for which a vaginal hysterectomy was performed by means of an incision along the anterior vaginal wall, beginning about one inch below the meatus urinarius, and carrying it down to, and around the cervix. During the dissection of the right vaginal flap from the bladder, such persistent oozing of blood was encountered as to render the proceeding extremely difficult. On nearing its junction with the cervix, the bladder was opened, but the accident was immediately discovered. The wound was forthwith closed by means of three Lembert sutures of fine silk, which were introduced through the muscular coat only. The wound was disinfected, and the operation completed in the ordinary manner. The wound in the vaginal wall was brought together by means of catgut sutures; iodoform gauze was placed in the vagina, and suitable dressings were applied. The bladder was catheterized every three hours for several days, after which the patient was able to urinate naturally.

Accidents are also so likely to occur to the posterior wall of the bladder, while the operator is breaking up old adhesions to the intestine and omentum, to diseased pelvic organs or to tumors. In separating such adhesions, unless great care be taken, the bladder will often suffer injury. In cases of this kind the wound rarely extends through the mucous membrane, and a few interrupted Lembert sutures will ordinarily suffice.

The following case is an illustration of intra-abdominal bladder injuries:

M. H., a single woman, 41 years of age, was admitted to the gynecic service of the New York City Hospital, Sept. 30, 1898, suffering from a large myoma, which extended above the umbilicus. On Oct. 3, after the usual preparation, and under ether narcosis, the abdomen was opened by means of an incision six inches in length, and to the right of the median line, beginning about two inches above the pubes. The tumor, which weighed seventeen pounds, was drawn through this incision, freed from its attachments and removed, together with the body of the uterus, which was amputated at the internal os. This tumor proved to have sprung from the anterior uterine wall. During the operation hemorrhage occurred from some sinuses on the surface of the tumor, which having rigid walls could not be clamped, therefore it was necessary to remove the mass very rapidly. To accomplish this the anterior attachment of the tumor was clamped and cut, when it was discovered, from the escape of urine, that the bladder had been opened at the fundus. At the beginning of the operation, the general cavity had been shut off with gauze pads, and the parts had been thoroughly irrigated, and the bladder walls, including the wounded part, drawn well up. The irrigation of the pelvic cavity was followed by the use of hydrozone in half strength, and this, in turn, by saline solution. The gauze pads were next changed, and the opening in the bladder, which proved to be about four inches in length, was closed by means of two layers of chromicized catgut sutures. The first row was introduced from within the bladder, and included the mucous and muscular coats, the knots being in the interior of the bladder. These sutures were thus placed on account of the extensive wound, which made it impossible to get the parts properly joined together in any other way. The second row was introduced from the outer side, after the manner of the mattress sutures, and included only the muscular and peritoneal coat. The wound was disinfected, and there being a large peritoneal flap, it was attached to the bladder, and made to cover the line of sutures, thus making the bladder wound extraperitoneal. After further washing out of the abdominal cavity the abdominal wound was closed without drainage, and the usual dressings applied. As the operation was prolonged, and the patient feeble, it was not thought advisable to make a vesicovaginal fistula for the purpose of draining the bladder, but instead a self-retaining catheter was introduced. For about ten days the convalescence was uneventful, except that occasionally the catheter would become blocked by a knot of one or other of the catgut sutures, which began to come away by the end of the third day. At the end of this time tumefaction occurred over the lower angle of the abdominal wound, and, on opening it, urine began to escape. A vesicovaginal fistula was made, and the mucous lining of the bladder attached on either side to the mucous lining of the vagina, by means of silk sutures. This was done for the purpose of keeping the fistula open, and to afford adequate drainage. The sinus in the abdominal wall was curetted and, after being thoroughly disinfected with hydrozone, its walls were sutured. The abdominal sinus having closed, the sutures which kept open the vesicovaginal fistula were removed, and this fistula closed quickly without any further operative interference.

The most dangerous and least often injured portion of the bladder is in the region of the trigone. It is here, when an injury does occur, more than in any other place, in gynecic operations, that a cool head, and a good knowledge of anatomy and surgical technic are necessary, but with these requisites and a knowledge of

*Presented to the Section on Obstetrics and Diseases of Women, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

the work accomplished by Kelly, Van Hook, Krug, Penrose and others, in the management of the vesical ends of the ureters, we may almost invariably look for a successful result.

Percival¹ reports a case of ruptured bladder on which he had operated. The rent was in the middle of the posterior bladder wall, about four inches in length. It was closed by means of a double wall of Lembert silk sutures. The wound in the abdominal wall was closed, after the peritoneal cavity had been flushed out with boric acid solution and a large quantity of clots and urinous fluids had been removed. For a few days the patient did well, and then died from peritonitis. But the necropsy proved that the bladder wound had completely healed. It is the writer's opinion that had saline solution and hydrozine been used, instead of boric acid, and the wound been kept open, the patient would possibly have recovered.

Wyeth² in the course of a paper entitled "Suprapubic Cystotomy," says, in describing the operation, that when the bladder is not inflamed, as after the removal of a small tumor, stone or foreign body, the operator may close the bladder by immediate suture. This is a very desirable method of dealing with the wound, for the reason that it does away with the necessity of drainage, and of the slow healing process. Two successful cases of immediate suture of the bladder wound are also reported by the same author.

The writer of this paper believes that with the technique at present at our command, wounds of the bladder made in the course of operating, whether extra peritoneal or intraperitoneal, should be closed immediately, and the operation continued as if the accident had not occurred, and notwithstanding the fact that drainage is not used, there will be little or no danger of peritonitis, extravasation of urine, or hemorrhage. It is of great importance when breaking up adhesions and removing tumors, or separating the bladder from the anterior vaginal wall and uterus, to be certain whether or not the bladder has been injured, and it has been the writer's custom to test this by the injection of saline solution, or by the uterine sound. Catgut is undoubtedly the best material for suturing the bladder wall, and no harm will result in case the suture is passed through the mucous lining of the bladder. A large proportion of all fatal cases of rupture of the bladder that have been operated on die from faulty stitching. In injuries of the posterior wall of the bladder, the sewing process is facilitated by the use of the Trendelenburg posture. In extensive intraperitoneal wounds of the bladder, where the vaginal wall is intact, it is best in the after-treatment to drain by means of a vesicovaginal fistula, which promptly heals, in the majority of instances, without operative interference, as soon as the sutures which hold its edges apart are removed. These fistulae differ from those occurring during childbirth in that there is no loss of substance. When the damage is not extensive, or when it occurs in the inferior wall, the peritoneal cavity having been opened, the bladder wound should be sutured, and the viscus drained by means of a self-retaining catheter, or by having a catheter passed every two to three hours. The healing of the wound may also be aided by the position of the patient in the bed.

While accidental wounds of the bladder occurring in the course of operations are to be deplored and guarded against by every possible means, when they do occur, the knowledge of their existence is of the utmost importance, for, as soon as discovered, they may be treated much in

the same manner as simple incisions in any other part of the body. The fear of septic peritonitis has prevented a general appreciation of this fact, but the labors of American gynecologists in proving the safety of closure of abdominal wounds without drainage, even where infection is known to exist, has done much to establish on a firm basis immediate suture of wounds of the bladder. The operation advocated by Rydgieer, of opening the bladder for the removal of tumors and calculi from its peritoneal side, has been followed by a lower rate of mortality than the older extraperitoneal, suprapubic or perineal operations.

Before operations on the pelvic organs are begun, and after the administration of the anesthetic, the surgeon should himself empty the patient's bladder by means of the catheter, instead of, as is usually done, leaving this for the nurse to do, before placing the patient on the operating-table. Attention to this detail would not only lessen the danger of injuries to the bladder, but when they did occur would lessen the danger of septic infection.

It is the writer's belief, based on many years' experience in abdominal surgery, that where care is taken there is no more reason why a recent intra-abdominal wound of the bladder should not be sutured and the abdomen closed without drainage than in the case of a wound occurring in the bowel. We must recognize the fact that, in the course of operations on the female genital organs, injury to the bladder is occasionally inevitable, but fortunately for all concerned when this accident does happen, our patient's life is not necessarily endangered, or her recovery retarded thereby.

55 West Thirty-sixth Street.

INTESTINAL TREATMENT OF TUBERCULOUS PERITONITIS.*

BY HENRY T. BYFORD, M.D.

Professor of Gynecology, College of Physicians and Surgeons of Chicago (University of Illinois); Professor of Clinical Gynecology in the Northwestern University Woman's Medical School, etc.

-CHICAGO.

In his "Principles and Practice of Medicine," Osler uses these words: "The treatment of tubercular peritonitis has fallen largely into the hands of the surgeons." And after a long search among medical text-books I ceased to wonder at this, for I could get but little information on the medical treatment. Therefore the average practitioner who depends on his text-books would seem to have no way of learning how to treat it. He is taught to treat peritonitis by opium, rest, etc., and to send the case to the surgeon.

The fact that improvement takes place after an abdominal incision in cases of tubercular peritonitis, has led many surgeons to look on the procedure as a cure. If, however, we believe with von Winckel that five years should elapse before the patient is considered cured, and remember that only about 15 per cent. have been under observation more than two years¹, we must infer that such an opinion is premature. A case of mine may serve as a sample. I reported the young woman as teaching school eighteen months after the operation, and, according to information given me, in good health. At the end of three years I received word that she was dead.

On account of the uncertainty of the reported cures I have not taken the time to tabulate them. I have, however, been struck with the similarity, in some recent re-

*Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

¹ British Medical Journal, 1897, Vol. 1, p. 1282.

² N. Y. Polytechnic, Vol. x, No. 1.

ports, of the results of medical and surgical treatment.

E. Schroeder² reports on 24 cases treated in the medical clinic at Bonn with the following results: Deaths, 33 per cent; unimproved, 20 per cent.; discharged about cured, 41 per cent.

Parker Sims², in reviewing the subject, says that some writers claim cures in 80 per cent., others in 24 per cent., by abdominal incision. His own conclusion is that improvement occurs in about 80 per cent., and a permanent cure in about 30 per cent. Here we have 20 per cent. unimproved in the medical treatment against 80 per cent. improved in the surgical, and 41 per cent. discharged about cured by medical treatment against a permanent cure in about 30 per cent. by incision.

The treatment by abdominal incision, which is undoubtedly followed by immediate benefit, must still bear the burden of proving that the ultimate results are the better. Some cases have undoubtedly been demonstrated to be cured by a subsequent abdominal section, but, on the other hand, subsequent abdominal sections in cases that had shown improvement have demonstrated uninterrupted progress in the disease⁴.

The most suspicious fact of all, in these cases that show improvement is that no one can find out how or why the improvement takes place. It is not from the removal of fluid, because tapping does not produce the same improvement, and because cases without fluid accumulation are also benefited by it. It is not the exposure to air or light, because a quick operation works better than a long one. It is not anything that destroys the bacilli, because the introduction of germicides does not materially affect the results. To say with Tait that opening the abdomen produces a change in the physiologic character of the peritoneum, which enables it to destroy the tubercle bacillus, is contrary to our experience with the peritoneal cavity, for we know that to open the peritoneal cavity and expose it to air impairs the functions of the peritoneum from A to Z. It is said that the cure is produced by increased phagocytosis. But do not the new conditions that call for phagocytosis require all of the phagocytes and perhaps more for their own cure?

I have come to the conclusion that there is something connected with the abdominal incision that is not connected with tapping or other forms of treatment, and that it is the same thing that causes improvement in almost all cases treated by abdominal section, even when pathologic conditions in the peritoneal cavity are not removed or are not even found. Thus cases of neurasthenia, hysteria, epilepsy, pelvic pain, etc., are usually temporarily benefited by an abdominal section, although they may lose the benefit later.

This something, according to my observation, is the preparatory, and after-treatment of that belongs to abdominal section. There is no doubt that the medical treatment ordinarily used for subacute and chronic tubercular peritonitis is in some respects similar in nature to that belonging to peritoneal section, but it deviates in laying more stress on nourishment and tonics and less on intestinal rest, intestinal depletion and intestinal disinfection, i. e., it deviates in the most essential parts.

The quickest and best way of explaining the application of the treatment is to report a case in point:

Mrs. L. B. L., aged 33, married thirteen years, mother of five children, the youngest 2½ years old, and one abortion twelve years ago, was treated for pulmonary tuberculosis fifteen years ago, at which time she had severe cough that lasted about two years. For a time the cough was much worse when lying down, and she had to sleep in a chair. She has had a slight cough ever since.

In December, 1898, she complained of abdominal soreness and pains for two weeks, when the menstrual period, which had been normal, came on with an increase of pains. The flow was slight for five days and then profuse for five days. She felt some better until Jan. 20, 1899, when she menstruated with some pain, and was bloated. On February 1 she was taken down with acute peritonitis, accompanied by an increase of the abdominal distension. The highest daily temperature ranged between 102 and 103 F.

She was brought to me for an operation February 26, at which time the temperature ranged between 99.8 and 102.6 F., always from 1.5 to 3 degrees higher in the afternoon than in the morning. The pulse varied between 90 and 110, but was poor in quality. An encysted peritonitis was diagnosed, the accumulation of fluid reaching above the level of the umbilicus on the left side and not quite as high up on the right. By vaginal indagation some induration could be felt beside the uterus. She was put on strychnia, gr. 1/20, and ten minims of the tincture of the citrochlorid of iron three times daily, after meals, 5i of sulphate of magnesia twice daily, and ʒss. of brandy four times daily. Hot applications were applied to the abdomen. She was allowed a piece of broiled steak for dinner, thoroughly dried toast three times daily, and liberal quantities of fluids. At the end of a week she was allowed an egg-nog every morning.

At the end of two weeks (March 9) the temperature and abdominal enlargement were the same, although the pulse remained between 90 and 100, and the nutrition and general appearance of the patient had improved. I now considered it the best time to operate, and gave her four grains of the mild mercuric chlorid at bedtime, to be followed by salines the next morning, etc. But by the next day I had made up my mind to give the plan of treatment I have been speaking of a trial, and proceeded to carry it out. The salines were stopped after sufficient had been given to produce four bowel movements, and then continued in dram doses twice or three times daily as necessary to produce two semiliquid stools each day. All solid foods were withdrawn, and six ounces of peptonized milk alternated with one ounce of liquid peptonoids three hours apart were ordered. Six grains of salol were prescribed four times daily. The iron and strychnia and brandy were continued. After three days a small quantity of thoroughly-dried toast was allowed three times daily, and the diet was kept the same for ten days, or until March 20. After that she took Mellin's food a part of the time instead of the milk, and was allowed a little cottage cheese, butter, 40 per cent. gluten biscuit and from one to two ounces of a delicate cereal such as corn-starch or rice once daily.

From this time the improvement was steady. I marked the upper border of the fluid with ink each week, and demonstrated a steady diminution until, when she left the hospital on April 1, there was no dulness on the right side of the median line, and only a narrow border extending from Poupart's ligament over the crest of the ilium on the left side. The pains and tenderness and abdominal enlargement were gone, and she was gaining flesh. The temperature seldom reached 100, but usually marked from 99.2 to 99.6 F. in the afternoon.

I was unable to keep her under observation until cured, and am not attempting to prove that she is or will be cured. I am merely endeavoring to illustrate the effects of a certain method of treatment, as compared with abdominal section, on the progress of the disease. The progress of this case demonstrated to those of us who watched it that whenever the nourishment was pushed

during the first two weeks, the severity of the symptoms was increased. From the time that she was put on the strictly liquid diet and salol, the improvement was marked and sustained.

I am not discussing remote results, for that belongs to the future, but my experience with this and with similar cases that had been subjected to an operation has convinced me that in subacute as well as acute tuberculous peritonitis we must for the moment make the supporting treatment subservient to that of the inflammation, and that the *treatment of the alimentary canal*, in addition to the use of tonics and stimulants, is the one on which we should depend. If we destroy the sources of local irritation, Nature will often do the rest.

We should endeavor to keep the alimentary canal as aseptic as we do during and just after an abdominal section, and this applies to the prodromic stage as well. Two or three liquid stools should be produced daily, by salines. Eight or ten grains of salol, guaiacol, or an equivalent, should be given from three to four times daily to aid in disinfecting the alimentary canal, and possibly in producing some effect on the bacilli. The diet should be entirely liquid and should be such as to produce the minimum of gas or solid residuum in the intestinal canal. If it is thought wise to try to affect the disease by mercurials, calomel or blue mass would be better than inunction, because it would stimulate the action of the liver and aid in disinfecting the intestinal canal. The same rest in bed is necessary as after an abdominal section. In subacute cases the patient usually tries to be up and about, and this increases the inflammation.

In subacute and chronic cases opium should never be given under any circumstances, except to check a diarrhea that resists other medication. A proper restriction of the diet and hot fomentations, or an ice-bag, will relieve the pain, while bismuth and soda in connection with the salol and guaiacol will check a tendency to diarrhea. Ordinarily I do not give bismuth, because I do not wish to check the action of the bowels.

If the same rapid improvement can thus be obtained without the abdominal incision, then the incision will be indicated only in the severe or neglected cases in which the fluid can not be made to disappear by absorption. Even then tapping can be substituted by those who have not the facilities for an aseptic section. At least there will be no excuse for opening the abdomen early and before time for absorption has been given, and before the intestinal treatment has been thoroughly tried.

If more innocuous specific germicides shall be discovered for tuberculosis, it is possible that they can be given by mouth or per anum in sufficient quantities, and for a sufficient length of time to destroy the bacilli in the tissues. I have depended mainly on intestinal aseptics. Perhaps in the future intestinal antiseptics may add to its efficiency. I would therefore recommend the following treatment:

During the first few days of an acute attack the usual treatment for acute peritonitis would be indicated; after the first few days no opium, but the continuation of hot fomentations if necessary for pain and discomfort. Enough calomel may be administered to turn the stools to a dark green. As soon as the stomach will tolerate them, salines are to be given in divided doses to produce two or three soft or liquid stools daily.

The diet must be fluid and in regulated quantities, so as to produce no intestinal gases, until the subacute symptoms have passed, and then only such solids may be allowed as will neither leave a solid residuum, nor produce gas either in the stomach or bowels. It is the want of

strict and intelligent attention to what is taken as nourishment that leads to intestinal pain, distension, nausea, increase of the peritonitis and effusion and the necessity for an opiate. Salol, guaiacol or crocote are indicated both for their antiseptic action and for a possible effect on Koch's bacillus.

The patients must be kept quietly in bed until all abdominal tenderness is gone and the p.m. temperature is almost normal, and they must be careful to be more quiet whenever there is any rise in temperature or indications of abdominal tenderness or pain.

Tonics, stimulants and general remedies that may be found curative of tuberculous infection are not to be neglected. The patient must be kept under systematic treatment for several months, and should be cautioned to restrict her diet to food that will be easily digested and non-irritating to the bowels, for we know that nine out of ten people who are not careful in eating are almost constantly subject to more or less intestinal irritation.

BIBLIOGRAPHY.

1. Nassaner, M.: *Munch. Med. Woch.*, April 19, 1898, in *Am. Year-Book for 1899*.
2. *Inaug. Diss.*, Bonn, 1897.
3. *Medical Record*, N. Y., April 2, 1898.
4. Jaffe, M.: *Ueber den Werth der Laparotomie als Heilmittel gegen Bauckfelltuberkulose*, *Centralbl. f. Gyn.* No. 40, 1898.

RELATIVE TOXICITY OF COCAIN AND EUCAIN.*

BY A. H. PECK, M.D., D.D.S.

Professor of Materia Medica, Therapeutics and Special Pathology
in Northwestern University Dental School.
CHICAGO.

Cocain hydrochlorate is a white crystalline alkaloid obtained from the leaves of the *erthroxylon coca*, a small shrub of Peru and other western South American countries. Its extensive use as a local anesthetic is so familiar to all that repetition is here unnecessary. It is not my intention in this paper to especially refer to its anesthetic properties, only its toxic effects relatively with those of eucain, as observed in actual practice and as determined by original experimentation.

Eucain is a colorless crystalline powder of German production, and was placed on the market some years ago as an anesthetic to be used in a similar manner to cocain. It was soon observed that the first product, or that which is now called "Alpha Eucain,"¹ produced many undesirable and some very disagreeable effects, so much so that its use was soon largely discontinued. In February, 1897, Dr. Silex of Berlin brought forward a new substance, called eucain "B," that it might be distinguished from the first, or eucain "A." These substances are now termed—the first product, alpha eucain, and the second beta eucain. The use of alpha eucain has been almost entirely discontinued, and it is no longer furnished by the dealers unless especially designated in the order.

Beta eucain is said to be a chlorhydrate of benzoyl-vinylidacetonealkamid.

Were the action of these drugs as anesthetics always unattended with disagreeable, and, as is sometimes the case, alarming symptoms, both of local and systemic character, they would be to the dental and medical professions one of the greatest boons of the present century. Many minor surgical operations, both in general and dental practice could, by the aid of these drugs, be performed with greater facility—and with equally good results—than can be performed without their

*Presented to the Section on Stomatology, at the Fifteenth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

properly used, and also frequently produces poisonous symptoms, oftentimes alarming. If a certain quantity of arsenic or morphia, or almost any other known poison be used under certain circumstances, the resulting symptoms are nearly always the same; we know what to expect. It is unfortunate that the same can not be said of the action of cocain. I have often seen the most alarming symptoms of systemic poisoning result from the use of a certain quantity of cocain, while in other individuals, a like amount under seemingly the same conditions, produces no bad symptoms. There is no other drug in the whole realm of medicine, in connection with the action of which individuals vary so much in point of susceptibility. I have seen all the stereotyped symptoms of systemic cocain poisoning result from the use, in a pulp-canal, of a small quantity of a 1 per cent. solution, while again I have seen 20 minims of a 2 per cent. solution injected into individuals, and this repeated as high as four times without poisonous symptoms resulting, so varying is the susceptibility of individuals to the action of the drug.

I can not pass on without calling attention to the fact that I as firmly believe that cocain produces, in some, local as well as systemic poisoning, notwithstanding the fact that many disagree with this statement. I have seen from the subcutaneous use of cocain, for the extraction of one root of a tooth, three good teeth lost, with extensive destruction of the alveolar part of bone, together with extensive sloughing of the soft parts, and all this in the absence of any systemic symptoms. Some, no doubt, will say this is the result of infection by an unclean syringe. But how is it to be proven that this is the case? The work has been done under the most careful antiseptic precautions. I have seen so many cases of local poisoning in varying degrees result from the use of this drug, that I am forced to the belief that it possesses local toxic properties as well as systemic toxic properties.

As to eucain "B," there is much to be said in its favor as compared with cocain. During the past year I have frequently used it in practice for devitalizing pulps, for local applications, and by injection, and have as yet observed no evil effects of note. Eucain, however, is not capable of producing the same degree of anesthesia under like circumstances as is cocain. This has been proven beyond the possibility of a doubt by the experiments I have made. As this paper is to deal only with the toxic properties of these drugs, I will not here discuss their anesthetic properties.

Last year, while experimenting extensively with the essential oils, using guinea-pigs largely, I did some work with cocain, and eucain, enough to demonstrate that there was an interesting field in contrasting the two. Since then I have experimented extensively with these agents, using guinea-pigs.

How completely is the statement that cocain varies much in its action demonstrated and proven to be correct by the following experiment—the first one serving to exhibit the poisonous propensities of the drug, and this, too, in the absence of any marked anesthetic effect. A pig, weight $8\frac{1}{2}$ ounces, into which was injected 20 minims of a 2 per cent. solution of cocain, which amount represents $\frac{3}{20}$ of 1 grain, after the lapse of eight minutes showed some indications of anesthesia, but these were comparatively insignificant. For the next six minutes various symptoms of distress were exhibited, such as a general spasmodic jerky action of all the muscles of the body, accompanied with evidences of pain. At the end of fourteen minutes its hind legs were partially paralyzed, and one minute later it fell on its side

completely overcome. Its head was firmly drawn back, all the muscles of its body being rigid; this condition would, at short intervals, give way to a distressful spasmodic action, general in its scope, and thus these sets of symptoms continued to alternate for a period of five minutes. During these twenty minutes the animal was not anesthetized to any appreciable extent, responding vigorously to a prick of the needle at any portion of the body. The heart action was at first somewhat depressed, but soon recovered, and thereafter its contractions were strong and rapid, evidently being much stimulated. The respiratory organs, at first slightly stimulated, were very soon depressed, and remained so until recovery set in. After twenty minutes it began to recover and at the end of twenty-five minutes could stand on its feet; however, it could not walk without falling. At the expiration of forty minutes, recovery was far advanced. This experiment shows the toxic action of the drug with the absence of anesthetic effect, better than any other on my list. While the poisonous propensities of this drug are frequently manifested, they are usually accompanied with anesthesia.

The following experiment shows in just as interesting and decided a manner the anesthetic action of the drug to the exclusion of nearly all manifestations of poisonous symptoms: weight of pig, $8\frac{1}{2}$ ounces; 20 minims of a 2 per cent. solution of cocain were injected at 10:15:30 p.m.; at 10:25 general anesthesia was quite marked, there being little response to the prick of a needle: when placed on its back it could hardly regain its feet. The heart action was somewhat depressed. At 10:27 it fell to its side, the heart action being now about normal; respiration somewhat shallow and quick. At 10:37:30 it regained its feet and occasionally evinced a desire to run away, its heart action now being strong and rapid and respiration normal. At 10:46:30, 10 minims more were injected, this making, in all, $\frac{9}{40}$ of 1 grain. The side in which the second injection was made almost immediately became swollen, as if considerable edema was induced. This has been noted by others, and forms the basis of the claim of some that local sloughing is only due to infection of the products of edema, which have infiltrated the tissues, liquefaction or pus formation taking place and sloughing finally resulting. This is no doubt true, oftentimes. Up to 10:56 the pig remained on its feet, and for the last five minutes preceding would walk about, prick up its ears, look up and chirp, and in various other ways gave evidence of enjoying a period of that intense beatitude and inner joyousness, while a succession of visions and phantasmagoria, most brilliant in color and form, trooped rapidly before his eyes—as related in Wood in connection with the experience of Montegazza while under the influence of this drug. Occasionally it would make a sudden rush, as if impelled by a plenitude of physical power, such as also took possession of Montegazza at various times. At 10:56, symptoms of general anesthesia were quite marked, a condition of general relaxation rapidly developing. At 11 it became unconscious and sank to the table on its side. Immediately after the second injection, the heart action was noticeably depressed, but quickly revived and became exaggerated over that of the normal. The respiratory apparatus was somewhat depressed most of the time. At 11:03 there occurred a slight general spasmodic action of all the muscles, its head being slightly drawn back and accompanied with a feeble cry, as if in slight pain. Action of the heart was strong and rapid; its breathing quick and shallow; true tetanus of various muscles was observed. This endured only an in-

stant, all the muscles becoming perfectly relaxed as before. Thus the animal continued in a state of perfect general anesthesia. At 11:06 action of the heart became feeble and respiration scarcely noticeable. At 11:12:30 the animal was apparently dead; respiration and the heart action both ceased. Thus it lay for 30 seconds; at 11:13 a faint gasp was observed, followed quickly by a second and third. The heart began to beat feebly, and in another two minutes, or at 11:15, the heart was beating regularly, but not so rapidly as normal; the respiratory apparatus was working regularly, but not strongly. Thus the animal remained in a perfect state of general anesthesia for twenty-three minutes, or until 11:38, when signs of recovery were observed. It was then placed in its box, and in the morning was found to be as bright and lively as its mates.

The behavior of other pigs under the influence of cocaine has, in some instances, approached the behavior of this one, but no other has been so typical. This, in connection with the results of all my experiments in this particular, to my mind, effectually settles the question of the inconsistency of the action of cocaine.

Let us now study the action of beta eucain under similar circumstances.

Twenty minims of a 2 per cent. solution of beta eucain, or $3/20$ of 1 grain, injected into a pig of $8\frac{1}{2}$ ounces weight gave at the expiration of thirteen minutes slight evidences of anesthesia—or perhaps better said, the action was that of a mild hypnotic, the animal appearing somewhat drowsy, at the same time all reflexes responding to any interference by way of pricking. The action of the heart and respiratory apparatus was slightly depressed. Three minutes later recovery commenced, and at the expiration of twenty minutes the effects of the drug had largely passed away. Two minutes later another 20 minims, or $6/20$ of 1 grain, in all, were injected. Five minutes later slight evidence of nausea was observed; at nine minutes the hypnotic action was more marked and was accompanied with slight evidence of true anesthesia. Its hind parts were somewhat paralyzed, and the reflexes slightly blunted. The heart action and respiration were more depressed than at first. At eighteen minutes it began to recover and at the expiration of twenty-five minutes, or forty-seven minutes from the time of the first injection, was able to walk about. One minute later, or forty-eight minutes from the time of the first injection, a third injection of 20 minims, making $9/20$ of 1 grain in all, was made. Five minutes later nausea developed and the animal seemed much distressed thereby. The heart action and respiration being at first stimulated, soon became much depressed; after ten minutes, twitching of all the muscles of the body, spasmodic in character, developed; this condition increased until, at the expiration of eighteen minutes, the animal fell to the table completely exhausted. Its head was firmly drawn back, all the muscles being at high tension; rapid winking of the eyes continued, with gasping for breath and twitching of ears. For the next twenty minutes this condition continued, with violent tetanoid spasms of all muscles following one another in rapid succession, each spasm being accompanied with mournful squealing, which seemed to indicate much distress and pain. At no time were the reflexes, either plantar or cremasteric, lost; neither was there much evidence of general anesthesia; indeed, the entire action seemed to be more that of a paralyzer than of an anesthetic. The heart action and the respiratory apparatus were much depressed. At times the heart-beat was almost undiscernible, and the animal would distress-

ingly gasp for breath. At the expiration of this twenty minutes, signs of recovery developed, and at the expiration of twelve minutes more it could stand on its feet, but could not walk without toppling over. It was now very late, and the animal was placed in its box, and in the morning was found to be none the worse for its experience. This case is interesting in that it seems to prove conclusively that, at least, three times the quantity of beta eucain is required to produce virtually the same degree of toxicity as is produced by cocaine. These results, or this action of the two drugs, as related in this experiment and the first one with cocaine, I regard as bearing directly on their toxic properties.

Legrand and Joanin, like Silex and Schmidt, have demonstrated that $1\frac{1}{5}$ grains of cocaine are necessary to cause the death of a guinea-pig of $2\frac{1}{5}$ pounds weight, and that $4\frac{5}{8}$ grains of beta eucain are necessary to cause the death of a pig of same weight. I have been unable to secure pigs as heavy as this, the heaviest I have had weighing $26\frac{1}{2}$ ounces. Taking their figures as a basis, and reckoning a fatal dose for a pig of less weight, in direct ratio therewith, it would require $5/6$ of 1 grain of cocaine to cause the death of a pig weighing 24 ounces, and of beta eucain, $2\frac{4}{7}$ grains would be necessary. Let me say, in this connection, that this manner of determining a fatal dose for a pig of a given weight is not a safe one to follow in dealing with pigs of less than 24 to 25 ounces weight. My experiments seem to conclusively prove that the ratio of a fatal dose of these drugs decreases rapidly in proportion to the decrease in weight and age of the animal.

In my work $5/7$ of 1 grain of cocaine proved the limit as a fatal dose for a pig of $24\frac{1}{2}$ ounces weight. The symptoms manifested in this case were not in any essential particular different from those occasioned by a non-fatal toxic dose, which symptoms have already been described; except at times they were all exaggerated, and especially was this noticeable in connection with the heart. After the brief depression of this organ, which occurred at first, its action became greatly exaggerated, at times thumping violently, especially as the end drew near and the respiratory apparatus became more depressed. Death occurred at the expiration of nineteen minutes, by paralysis of the muscles of respiration—the heart continuing to beat feebly and irregularly for thirty seconds after breathing ceased.

This violent action of the heart above referred to seemed to be more an effort on the part of the animal economy to supply the needed oxygen to the system, through the medium of the circulation, during the period of respiratory depression, than it was the result of direct stimulation by the drug.

The difference of susceptibility of these animals to this drug is striking. In one instance $1/2$ of 1 grain proved fatal to a female pig of $25\frac{1}{2}$ ounces weight, while in another instance a male pig of $16\frac{1}{2}$ ounces weight survived the effects of a like quantity. However, on the whole, I think the sex makes very little, if any, difference in the action of these drugs. The above fatal dose for a pig of the given weight has been determined after many experiments with pigs of different weight, and with different quantities of the drug. The same also is true in connection with beta and alpha eucain.

Of beta eucain, $2\frac{2}{7}$ grains are necessary to cause the death of a pig of $24\frac{1}{2}$ ounces weight. In this experiment death occurred in $32\frac{3}{4}$ minutes from the time of injection. The symptoms were not unlike those as already described in connection with the use of this agent, except, as in the case of fatality by cocaine, they were

use. Unfortunately cocain is, in its action, one of the most inconstant and unreliable drugs in the whole pharmacopoeia. It will always produce anesthesia, if greatly exaggerated. At no time were evidences of anesthesia marked, nor were the reflexes entirely lost. The action of the heart and the respiratory apparatus was depressed after a brief period of stimulation at first. When violent spasms occurred the heart action would be temporarily stimulated. Death occurred from paralysis of the muscles of respiration and of the heart, breathing and the heart action ceasing at the same time.

Alpha eucain has proven to be virtually on a par with cocain as to toxic properties. Five-sixths of one grain is the limit as to fatal action with pigs of $2\frac{1}{4}$ ounces weight. I injected this amount of alpha eucain into a pig of this weight, and at the expiration of seven minutes trembling of all its muscles occurred; at nine minutes its head drooped with the nose to the table; at $11\frac{1}{2}$ minutes the animal suddenly fell to its side, and was seized with violent spasms; its heart action and respiration were temporarily increased, being much depressed very soon thereafter; nausea and some vomiting occurred; the drug also acted as a diuretic, renal discharge occurring quite freely; severe spasmodic contraction of all muscles followed one another in rapid succession, and were invariably accompanied with evidences of pain more or less severe. Death occurred at the expiration of eighteen minutes, by paralysis of the muscles of respiration and of the heart, breathing and the heart action ceasing at the same time.

It is also stated that cocain can not be sterilized by boiling, and if subjected to a temperature of 176° F., is transformed into egonin, a substance devoid of all analgesic power; also that boiling does not in any degree affect the efficiency of eucain. I have demonstrated this statement regarding eucain to be true, but if it be true regarding cocain, my experiments in this connection are in error. According to them it is conclusively shown that boiling does not destroy the potency of this drug, but does modify it somewhat. I prepared a 2 per cent. solution of cocain and also of eucain. These I subjected to a bath of boiling water for five minutes. These solutions were allowed to cool gradually, after which 20 minims of the cocain solution were injected into a pig of $3\frac{1}{2}$ ounces weight, with the following result: At the expiration of seven minutes all its muscles were in a tremor, and at ten minutes control of its hind parts was lost; at eleven minutes it fell to the table completely overcome. The symptoms which followed were the same as in other cases, except that they were less violent. At the expiration of thirty minutes the animal had apparently recovered.

Into another pig of $3\frac{1}{2}$ ounces weight were injected 20 minims of the boiled 2 per cent. solution of beta eucain. No symptoms of note followed this injection, with the exception that its hind parts were for a time somewhat paralyzed. At the expiration of 22 minutes a second injection of 20 minims was made. The symptoms following this injection were virtually the same as those which followed the second injection of the other case as related above. At the expiration of forty-five minutes after the second injection, recovery was well advanced. A third injection of 20 minims was now made: the symptoms which followed were identical with, and somewhat intensified over, those of the other case related above. At the expiration of forty-six minutes after the third injection, the animal had nearly recovered.

By way of recapitulation, my experiments lead me to conclude as follows:

1. The action of cocain is inconstant; one never knows whether the symptoms occasioned by like quantities of the drug, in animals or individuals, under like circumstances, will be similar or dissimilar.

2. The action of eucain is constant. The symptoms occasioned by the use of like quantities in animals under like circumstances, and so far as my experiments have gone, in different individuals also, are the same.

3. The first action of cocain on the heart is that of a depressant, and on the respiration it is that of a mild stimulant, the after-effects being, on the heart, that of a decided stimulant, and on the respiration, that of a decided depressant.

4. The first action of eucain on both the heart and respiration is that of a stimulant, the after-effects being that of a decided depressant.

5. Cocain causes death in animals by paralyzing the muscles of the respiratory apparatus, the heart's action continuing in a feeble way for a brief period after breathing ceases.

6. Eucain causes death in animals by paralyzing the muscles of the heart and of the respiratory apparatus, they ceasing to operate simultaneously.

7. Eucain in toxic doses nearly always causes nausea, and occasionally vomiting.

8. Cocain is much less nauseating and scarcely ever causes vomiting.

9. Eucain is decidedly a diuretic, causing renal discharge in a majority of instances in which a toxic dose is used.

10. Cocain is not a diuretic to any appreciable extent, renal discharge having occurred in only one instance in connection with all my experiments.

11. The pupils of the eyes, in nearly all cases of cocain poisoning, do not respond to light and are more or less bulging from their sockets.

12. The pupils of the eyes in most cases of eucain poisoning do respond feebly to light, and rarely ever bulge from their sockets.

13. The action of toxic doses of eucain is more like that of a paralyzing, tetanoiding, convulsion-producing agent, than it is like an anestheticizing one, the plantar and cremasteric reflexes nearly always responding.

14. Toxic doses of cocain cause general anesthesia in connection with the other symptoms in the majority of cases.

15. True tetanus, of all striped muscles of the limbs, and Cheyne-Stokes' breathing nearly always occur with the use of cocain, but seldom does either occur when eucain is used.

16. Cocain is at least three times more toxic than beta eucain, and alpha eucain is as toxic as cocain.

17. Boiling does not destroy the efficacy of cocain, but it does modify it, and boiling in no degree lessens the efficacy of eucain.

The above deductions have been made only after many experiments in connection with each individual point. I have observed many interesting features in connection with the relative worth of these drugs as local anesthetics, but this paper is not to treat of this phase of the work. There is much experimental work yet to be done in this connection, the results of which I shall be pleased to present at some future meeting¹.

Dr. JOSEPH B. HAVEN, of Chicago, has been appointed consul to St. Kitts Island, W. I. Dr. Haven was graduated from Rush College in 1880, and had built up a good practice. He left for his new field September 1.

DISEASE OF THE PANCREAS*.

BY FRANKLIN E. WALLACE, M.D.

MONMOUTH, ILL.

The infrequency with which post-mortem examinations are made probably accounts for the apparent rarity of diseases of the pancreas. This organ belongs to the important system of secreting glands, and I feel that their relationship to the human economy is but imperfectly known. We know that there is a bond of some extent between these glands, through the sympathetic nervous system and the lymphatics, but is there not some bond existing which has control over the power whereby one gland assumes a function laid down by another? Does such a power exist in the human organism, or is the function, once destroyed, lost forever? Does the organism adjust itself to the loss of an organ through other organs, or does it live without this function being restored? There seems to be a close relationship between the pancreas and the central nervous system also, for microscopic examinations of the tissues of the pons, medulla and cerebrum in some cases of pancreatic disease, show colloid degeneration. "In diagnosing affections of the pancreas, special stress should be laid upon incomplete digestion of fat and starches and the existence of diabetes and fatty stools, and for this reason the feces and urine are to be carefully examined. The urine also contains fat in some cases!" It is, therefore, essential to make a very careful examination of the feces and urine, in these cases in which we are undecided, as to diagnosis of pancreatic diseases.

Cyst.—Cystic degeneration seems to be the most common disease of the pancreas. One reason for this is because of the more conspicuous signs and symptoms present, making an early diagnosis of this condition easier, while other cases go unrecognized. The history of a case sometimes gives us an insight into the diagnosis, for in the majority of cases of cyst, injury is given as the cause. In the reaction following an injury to any tissue there is always swelling and congestion in the parts injured. Following contusion of the pancreas, therefore, we would expect these effects to follow and we have the essential conditions present for a cystic formation, viz., a closure of the duct, with retention of the secretions. The injury may be severe enough to set up permanent changes, and through cicatricial contracture we get partial or total closure of the duct and the cyst becomes evident, by an increasing sized tumor. Cancer, calculi and abscess may all act as obstructions.

The diagnosis of cyst is not always an easy matter, and the statement is made that it has been correctly made in a minority of cases. The lack of all symptoms of local or general inflammation, its fluctuating character and its position, in the region of the pancreas, behind the stomach, are its chief diagnostic points. Some very high authorities advocate tapping through the abdominal wall with an exploratory needle, withdrawal of contents and examination, chemically and microscopically. The question arises, is this a safe procedure? Being a retro-peritoneal organ, and lying, as it does, behind the colon and stomach, a surgeon certainly adds danger to an already dangerous condition, for he runs a risk of puncturing either of these overlying organs, and is very apt to infect the peritoneum. Cyst of the pancreas must be diagnosed from ovarian cyst, hydrops of the gall-bladder, hydronephrosis, hemorrhagic effusion, etc. I can not take time in this paper to give the points of differential diagnosis, nor to even mention all of the diseases of the pancreas, but I call attention to the inflation of the colon

as a valuable procedure in arriving at a diagnosis. "This is done by means of air, hydrogen or carbonic acid gas. In tumors of the pancreas, kidneys and spleen, or in aneurysms, the inflated colon comes between them and the abdominal wall." "Tumors of the ovaries and the uterus enlarge from below upward, push the intestines to one side and are not covered with them?" In summing up this disease the following conclusions have been arrived at: 1. That contusions of the upper part of the abdomen may be followed by the development of a tumor in the epigastric, umbilical and left hypochondriac region. 2. That such tumors may be due to fluid accumulations in the lesser peritoneal cavity. 3. That when the contents of such tumors are found to have the property of rapidly converting starch into sugar, we may assume that the pancreas has been injured. 4. That many such tumors have been regarded as true retention cysts of the pancreas and that this opinion has been formed upon insufficient evidence*.

Hemorrhage.—Hemorrhages are divided into three classes. The most common form is passive hemorrhage, as a result of diseases of the heart, lungs or liver. The second class comprises those rare cases resulting from rupture of a large blood-vessel, due to some change in the vessel wall. The third class constitutes those cases in which the whole organ becomes hemorrhagic, the blood infiltrating the interstitial tissues, after which disintegration of the whole organ occurs. "The first form of hemorrhage is unattended by special symptoms. In the second a pulsating tumor may suddenly appear in the epigastrium and the ordinary indications of hemorrhage, viz., vomiting, fainting fits, cold extremities, feeble pulse, and general exhaustion, are present. Death may occur suddenly or the patient may linger for months. In the third condition death usually occurs very suddenly, probably from pressure on the sympathetic ganglia. There are no symptoms and the rapid termination prevents the development of general peritonitis, which would otherwise occur from the sloughing of the peritoneum. There are no indications for treatment*."

Acute Suppuration.—Next to acute hemorrhage, the most rapidly fatal disease of this organ is acute suppuration. Pain may be sudden and severe, nausea and vomiting as a rule persistent, fecal vomiting occurs in a large number of cases, tenderness more or less constant, great prostration, pulse rapid and weak, temperature may be normal, subnormal or but slightly elevated, constipation and tympany generally present, tumor rare, jaundice may or may not develop. The septic infection arises through traumatism, ulcers of the intestines, stomach, or bile tract, from peripancreatic abscesses, or it may take place, primarily, through the blood or lymph channels. In exceptionally rare cases it runs into a chronic condition. Nature is very kind and may protect herself, if she has time enough, to build up a wall. The offending material may be discharged through the bowel or stomach and recovery take place. In most cases the microbic invasion is so rapid that Nature is overpowered and death is the result. In other cases, abscesses have formed in the lumbar region and recovery has been brought about by simple incision and drainage. This condition must be diagnosed from intestinal obstruction, abscess of the liver, gangrenous cholecystitis, empyema of gall-bladder, perforative ulcer of stomach or bowel. The following case, which came under my observation while on the house staff of St. Elizabeth Hospital, Chicago, serves as a type of this disease. It has already been placed on record, as I presented the history of the case and showed a specimen of the omentum, presenting fat

*Read before the Illinois State Medical Society, Cairo, May 16, 1899.

necrosis, before the Chicago Pathological Society in 1896.

Mrs. F., aged 26, Irish, housewife, was admitted to St. Elizabeth Hospital, Oct. 26, 1896, as a private patient; family history negative; mother of two children, one miscarriage; has always been well up to two years ago, when she had pain in the epigastrium, with slight icterus, but made good recovery. Since that time she has had three or four such attacks. Her present history is of five weeks' standing. She was taken with pain in the region of the gall-bladder, nausea, vomiting and fever. These symptoms continued more or less severely for three weeks, and then gradually abated under treatment. For the next ten days she was considerably better, but five days ago was taken with the former symptoms.

She was admitted to the Hospital for an operation, a probable diagnosis of gall-stones having been made. On admittance her condition was found to be as follows: Able to walk, restless, face flushed, hurried respiration, pulse 114, temperature 100.4, pain in epigastrium, nausea and vomiting, tongue slightly coated, tenderness over abdomen, rapid heart action and pulsations strong, constipated and urine scant; liver, lungs and spleen normal. Urinalysis showed biliary coloring matter and one-fifth by bulk, of albumin. Postponement of the operation was advised by her physician. Medicines to relieve her incessant vomiting were in vain, and anything taken into the stomach was immediately rejected. Her condition remained about the same for the next two days. The urine became more scant and enemas did not relieve the bowels. October 28: Voided but sixteen ounces of urine the previous twenty-four hours; more restless and anxious looking; seemed weaker; slight fecal movement; vomiting still continued, and temperature was the same as on admittance. October 29: Heart weaker; fecal vomiting; previous symptoms unabated; semidelirious and extremely restless; at 7 p. m. she passed into coma, and died at 11 p. m.

Post-mortem.—The autopsy was held by Dr. E. R. Lecount, attending pathologist, assisted by the writer, and it showed an intensely interesting state of affairs. A brief synopsis of the findings is as follows: The heart and lungs were normal to a casual examination, the spleen small, the gall-bladder small and contracted from connective-tissue bands in the walls, gall-stones numerous, acute parenchymatous nephritis in both kidneys; the body and tail of the pancreas consisted simply of shreds of necrotic tissue, extending across and lying free in a cavity, possessing for walls, the stomach, retroperitoneal, and perirenal adipose tissue, the transverse mesentery, duodenum, and tissue of lesser omental cavity, as well as some loops of small intestines and colon. The walls of this cavity were necrotic, dark gray and slaty in color. The cavity communicated with the stomach and bowels through perforations, and contained fecal matter. The head of the pancreas was the least involved. We found disseminated fat necrosis throughout the omentum, mesentery and fatty tissue. This necrosis of Balsar may be found in the interlobular pancreatic tissue and in the abdominal fatty tissue generally. It consists of small, opaque, yellowish white spots, from pinhead-size to that of a split pea, distributed more or less thickly throughout the tissues involved. In this case these areas could be plainly seen in the omentum, when held up to the light. I examined the contents of these areas under the microscope, and fat crystals were easily visible.

Primary cancer of this organ is a most insidious disease, developing gradually and without much pain. The patients are usually past middle life. Temperature is generally subnormal, and the patients may, later in the

disease, have a tumor, and like cancer of any part of the body, may have cachexia and emaciation. It is accompanied by various digestive disturbances, liver small and hard; jaundice sets in gradually and once present never disappears. With the accumulation of bile in the gall-bladder, a tumor can oftentimes be made out and might lead one to a diagnosis of cholelithiasis; therefore, if we have a case presenting jaundice, with or without pain or a tumor in a person past middle life, and it can not be relieved by active medication in a few days, operate. One diagnostic point is this: Cancer of the pancreas nearly always produces jaundice, because of the frequency with which the head is involved, while cancer of the liver rarely does, for its growth generally occurs in parts of the liver distant from the gall-duct.

It is only within the past few years that any systematic effort at investigating the surgery of this organ has been attempted. Billroth, Kocher, Gould and others have placed cases of interest on record, but much of the honor of placing surgery of the pancreas on a solid footing belongs to Senn. He has made extensive experimental investigations, and has collected illustrative cases and placed them on record. Although the results of laparotomy so far have not been encouraging, I think it apparent that only through an early diagnosis and operative procedure can we hope to decrease the large percentage of mortality from diseases of this organ. Several cases are on record in which the pancreas has been removed entire, and its function apparently taken up by other organs, however, in some cases, more or less imperfectly, for glycosuria has been noted. There are some authors who claim that total extirpation of the pancreas is invariably followed by diabetes, and probably an equal number deny this, but it is true nevertheless, that in a majority of cases this operation is followed by glycosuria. Complete removal may easily prove fatal, so it should be avoided if possible. I advocate an exploratory incision and after a thorough investigation, a decision can be reached as to the best method of procedure. With our advanced knowledge of antiseptics and improved methods of operating we certainly are justifiable in making an exploratory incision for diagnosis. If an obstruction should be present from gall-stones, stricture and the like, we are in a position to remedy it. If found to be cancer, an operation may be indicated, depending on the involvement. Should our examination reveal a cyst or abscess without involvement of the peritoneum, then a posterior incision below the twelfth rib should be made, the tumor pushed backward, incised and drained and the anterior incision closed. I favor this route, because: 1. It permits of better drainage. 2. We run no risk of infecting the peritoneal cavity with the tumor contents. 3. "The permanent adhesion of the left end of the pancreas to the abdominal wall, in this situation, is less likely to lead to subsequent mischief than is an anterior adhesion between the stomach and transverse colon⁵." The cure of cancer of the breast by the administration of thyroid extracts is reported and we know of the favorable results in other diseases from its use. We know, also, of favorable results from the administration of extracts and secretions of other glands. If, as I have suggested, there is a peculiar relationship existing between all glands, is it unreasonable to expect that in diseases of the pancreas or other glands, we might not have a beneficial effect by giving the combined extracts or secretions from all the glands?

BIBLIOGRAPHY.

1. Tillman's Surgery, 1896 edition.
2. Ziemssen's Cyclopaedia.
3. Osler: Diagnosis of Abdominal Tumors.
4. Pepper: System of Medicine.
5. Robson: Medical Annual, 1892.

MEDICINE.

ITS PROGRESS, PROBLEMS, AND PROSPECTS.*

BY J. BRUYERE, M.S., M.D.

SURGEON TO MERCER HOSPITAL.

TRENTON, N. J.

(Concluded from Page 591.)

Etiology thus becomes of prime importance and gives to us many problems for future solution. For example, can a micro-organism, under different circumstances, produce different diseases and the variations in the virulence of different epidemics? We know that micro-organisms are greatly influenced and modified, in form and activity, according to their food-supply, temperature, moisture, the presence of oxygen, light and other organisms. Can not the same germ have the conditions of its development so changed by environment as to undergo progressive modifications sufficient to account for the variations in the virulence of different epidemics, and to produce various symptoms and diseases? Does not the pneumococcus, when subject to different environments, produce numerous infectious processes, such as pneumonia, pleurisy, endocarditis, pericarditis, peritonitis, cerebrospinal meningitis, arthritis, and general septicemia? May not the same specific cause give rise to different diseases in different patients? Can the same micro-organism produce erysipelas in one person, and puerperal fever in another? Are all infectious diseases due to individual or specific germs and their modification by environment, or are most infectious diseases due to a combination of germs and of circumstances? Can a disease like croupous pneumonia or diphtheria be the result of two or more micro-organisms acting alone or in combination? Is pneumonia, cystitis, meningitis, hepatitis, tonsillitis, carditis, gastritis, nephritis or enteritis always the same in kind, or are there many kinds of these diseases, corresponding to the combination of germs and circumstances present? Do suppuration, erysipelas, septicemia, pyemia and pneumonia depend upon their own specific germs, or are they produced by various germs, or a mixed infection? If numerous microbes can, and do, develop in the same organ at the same time, is not their resultant effect often responsible for the varieties of diseased conditions? Are the symptoms at the beginning and termination of a microbial disease always due to the same kind of germs? Why is it that various organisms may produce the same pathologic, anatomical and clinical symptoms? Why does not a specific bacterium always produce the same effects—the same symptomatology and pathologic phenomena? For example, why is it, as Mikulicz tells us, that “all forms of peritonitis run the same clinical course, regardless of the bacteria that cause it?” May we not have phthisis pulmonalis without the presence of the tubercle bacillus, and with streptothrix instead? Can not pneumonia be produced by the tubercle bacillus and also by the microbes of diphtheria, typhoid fever, anthrax, erysipelas and influenza? Is not epidemic cerebrospinal meningitis often due to a variety of organisms, such as the meningococcus, pneumococcus, streptococcus, tubercle bacilli, anthrax and typhoid germs? May mumps, orchitis, meningitis, pleurisy, goiter, hepatitis and melancholia be due to typhoid infections, and may not other things than typhoid germs give rise to typhoid symptoms while typhoid germs may give rise to other than typhoid symptoms? Are the meningococcus and the gonococcus identical organisms, or are they only closely related? As there is no individual germ peculiar to each

disease; as environment modifies the nutritive and reproductive activities of germs, thus causing a great diversity in their virulence, and in the symptoms and diseases they produce, as many germs in combination may produce a given disease, and as many diseases may be produced by a variety of germs, it follows that the problems in etiology are the most difficult. In fact, in every department of medicine the problems that confront us are very numerous.

There are many problems in tuberculosis. Why do dogs, goats, rats, white mice, and all cold-blooded animals, possess immunity, while cats, rabbits, field mice, pigs and fowls are susceptible? Why is tuberculosis common in cattle, and rare in sheep and horses? Why are rabbits and guinea-pigs very susceptible to inoculation and yet rarely have tuberculosis; and why do apes and monkeys contract tuberculosis so readily in confinement and never in their native wilds? On the contrary, the wild Indian is very prone to consumption, even when occupying one of the finest climates in the world. The death-rate among them is about twice that of the white race. Why is an Indian, who lives an outdoor life, in a beautiful climate and free from the effeminating effects of civilization, more prone to consumption than his white brother? Why is the negro, in this country and the West Indies, more prone to this disease than in Africa; and why are the Jews far less susceptible than any other race? If tuberculosis can not be directly transmitted, can not the virus be transmitted that gives rise to infantile tuberculosis, or is this always the result of infection? Is not congenital tuberculosis more common than we imagine? What is the peculiar character of the tissue-soil that allows the seeds or germs of tuberculosis to develop? All weak and delicate people are not predisposed to consumption. Lowered vitality does not always favor infection. Is tissue-resistance, therefore, always greatest in those of the greatest vitality or physical strength? It is said that immunity depends on tissue-resistance, and that tissue-resistance depends largely on healthy tissues and favoring circumstances. It is also known that tissue-resistance may be inherited or acquired, independent of strong vitality. A sick infant can resist some germs better than a strong man, and some people are easily inoculated or infected, others not. Do the bacilli of tuberculosis, or their products induce suppuration or is this due to a mixed infection? Is the virus which produces scrofula, tuberculous adenitis, or tuberculosis of the lymph-glands, the same as the virus that produces tuberculosis in other parts of the body? Does it differ in kind, or is it only milder in form? Why do measles, whooping-cough and diabetes so strongly predispose to tuberculosis? Why are the lungs most susceptible in adults, and the lymph-glands in children? Why does scrofula in childhood furnish a partial immunity to tuberculosis in adult life? Is pneumonia, resulting from tuberculosis, due to the tubercle bacillus and its toxins, or is it due to secondary infection with other germs? Is secondary infection frequent? Are the cavities in the lungs produced by the tubercle bacilli, or are the pus-germs—the streptococcus, etc.—responsible for all cavities? Why does a free incision into a tuberculous tissue so often set up healthy action in the parts? For example, why does an abdominal incision often cure peritoneal tuberculosis, or an incision into tubercular bones and joints so often have a curative effect? Why does suppuration at once cease, when we open an abscess antiseptically, although pyogenic organisms are present in vast numbers? Why do tubercle bacilli sometimes cause tuberculous tissue, sometimes a

* Read before the Mercer County (N. J.) Medical Society, at its Fiftieth Anniversary, May 23, 1898, and subsequently revised.

cheesy mass, and sometimes a chronic abscess? Is the bovine tubercle bacillus identical with the tubercle bacillus of man? Theobald Smith has shown that these bacilli are not identical, and casts discredit upon the opinion that tuberculosis can be spread from dairy products, while Dr. Busch believes that "all the tuberculosis affecting the human race comes from the dairy cow." Obermuller finds Koch's bacilli in butter, while Rabinowitch fails to find any. Is a large percentage of infant tuberculosis due to milk infected by the tubercle bacilli, or its toxins? Many believe that most milk is filled with tubercle bacilli, and, regarding the infant stomach as a germ incubator instead of a sterilizing chamber, they sterilize and pasteurize the milk, and thus impair digestion and nutrition. Is consumption of vegetable origin, and is the bacillus a vegetable parasite and to be found on certain grasses, as affirmed by M. Moeller and Rabinowitch? Can artificial immunity to the tubercle bacillus be produced by inoculating with the tubercle bacilli in the early stages of tuberculosis, before the vital forces have been reduced by the disease?

It is estimated that there are over 150,000 deaths annually from consumption, and that about one in every sixty is infected, nevertheless Parker of London tells us that the mortality for consumption has diminished 46 per cent. As the germs of tuberculosis are so widely disseminated—revealing their presence in about one-half of all cases of autopsy, from whatever cause, and thus showing that possibly the majority of mankind are infected, although in only a minority is the germ able to overcome vital resistance and produce fatal effects—does it not follow that mankind should, in the course of time, acquire a partial, or a total immunity to this disease? Should not better sanitation, better hygienic laws, and acquired immunity, eventually stamp out this terrible disease? In India there is an acquired immunity to cholera, which in this country is very deadly. Measles have almost depopulated the Pacific Islands, but here it is mild. Wherever a disease has been long prevalent there seems to be eventually developed an acquired immunity. Landerer declares that cinnaamic acid "cures all cases in the early stages, and many others." Murphy of Chicago claims to have secured excellent results by compression of the lungs by nitrogen gas, and others, with the serum and climatic treatment, claim excellent results; but is not the decrease of the death-rate from tuberculosis due far more to improvement in sanitation and gradually acquired immunity than to all medical treatments combined?

We will next briefly consider some of the problems in diphtheria and typhoid fever. The true bacillus of diphtheria can only be identified by its cultural peculiarities and its pathogenic activity. Being irregular in outline, especially in cultures, and closely resembling other organisms found in the mouth, particularly in those having decayed teeth, mistakes are easily made, when only a microscopic examination is made. We can not always, from the form of a bacillus, determine the class to which it belongs, for its form depends largely on the nature of its environment, or the media employed in its development. There have been found bacilli identical in form to the bacilli of true diphtheria, and yet these were harmless when inoculated. Why does the bacillus of diphtheria sometimes entirely or partially lose its virulence and become incapable of producing death? Does it lose its virulence as the disease progresses toward recovery, and is this difference in virulence due to difference in species, or difference in circumstances or environment? We do not know why the bacillus of diphtheria

may be harmless at one time, cause true diphtheria at another, or membranous rhinitis at still another. The New York Board of Health found the germ of diphtheria present in 80 per cent. of the reported cases of membranous croup. Is membranous croup, therefore, simply laryngeal diphtheria?

Why is it that susceptibility to the typhoid bacillus can be artificially induced in the lower animals, that are scarcely susceptible to this germ, by the injection of the products of certain saprophytes? Alessi tells us that rats, guinea-pigs, and rabbits, when compelled to inhale the emanations from decomposing products in cess-pools become susceptible to typhoid infection. Is resistance to the typhoid bacillus weakened by the toxic action of the saprophytes? If not, what are the things, or conditions, that diminish natural resistance to infection in the various zymotic diseases? Why are enteric lesions present in some cases and absent in others, although infection may have taken place through the intestine in both cases? Why may typhoid infection at one time produce a septicemia—a severe intoxication—without local manifestations, and at another time attack, either alone or in combination, various organs, such as the lungs, kidneys, spleen, or cerebrospinal meninges, without affecting the intestines? Does the effect of the typhoid germ predispose to a mixed infection, and is this not responsible for many of the symptoms that are present in typhoid? Is the bacillus coli communis, of which, according to Rahlff, there are sixty-two different kinds, capable of becoming pathogenic and producing typhoid symptoms? As it is now known that the urine of typhoid cases may contain the germs for many months, is not the public health greatly endangered by this fact, and should not the urine be disinfected as a sanitary precaution, while any germs remain in the system?

Much yet remains to be known of the life and internal structure of bacteria. As by nature, they are usually colorless, it is quite probable that they are greatly altered in structure by the staining process. At present our text-books teach that the bacterium is devoid of a nucleus, still Gruber, Klebs, Nussbaum, Balbini, and others have shown that "the nucleus is an element essential to the life of the cell," or is the "focal seat of life in all its forms." Butschli believes that the bacterium consists almost entirely of a nucleus. From this we observe that much still remains to be known about the structure of the bacteria.

There still remain many problems in infection, immunity, etc. We have yet to learn how infection may lead to structural complications, and how normal bacteria become abnormal in growth and character. We know that healthy tissues resist microbe attacks, while enfeebled tissues are predisposed to microbic action. The want of vital energy or defective nutrition makes the tissues a receptive soil for bacilli and causes infection. Infection depends largely upon the pathogenic power of the germ, and upon the amount of cell resistance. The condition of the vital forces, therefore, largely decides the action or effect of the germ. For example, a person of strong constitution, and in good health, can meet disease on a war footing, and nine times out of ten repulse it. It is said that "the microbe trembles when he sees a body cheerful and at ease."

It would seem, therefore, that immunity was due to increased vital force; but such is not the fact in all cases. The very nature of immunity is still an unsolved riddle, for no general or satisfactory law of immunity has as yet been formulated. For example, why are infectious diseases mild in some cases and virulent in others, and why

are the warm-blooded animals immune to most of these diseases? Why are children immune to certain diseases of adult life, and adults immune to certain diseases of childhood? Why is natural immunity peculiar to some species, races, or individuals? We know that artificial immunity is secured by attacks of disease ending in recovery, by vaccination, by treatment with sterilized cultures of germs, and by treating a susceptible animal with the blood-serum of immune animals, but we do not know how the immunizing effect is produced. Are artificial immunity and the cure of infectious diseases due to the combination of enzymes with organic albuminoids? Ehrlich believes that the specific diseases, caused by toxins, are produced in those individuals whose living cells or tissue possess a substance which has a chemical affinity for the toxin, and when this substance passes from the tissues into the blood, it becomes a protecting and curing substance. Buchner says that immunity is caused by "reactive changes" in the fixed tissue cells, after which they are not again susceptible to the action of the same organisms. There seems to be a retention of some bacterial products in the tissues. Others attribute immunity to phagocytosis; to the germicidal powers of the blood-serum; to the bactericidal properties of the proteids; to the exhaustion of the pabulum by the germs. Metschnikoff claims that immunity is due to phagocytosis. Dr. William Carter, in 1893, showed that normal blood-serum is a powerful and active therapeutic force, with globulicidal and germicidal properties. Vaughn, Hankin, and others, believe that the nuclei in the blood, which is derived from the white corpuscles, has decided germicidal and immunizing properties. Others believe that the first attack of an infectious disease exhausts the pabulum or nourishment in the blood or tissues on which the germ feeds; or produces such cellular, or chemical changes that the germs die, and the disease terminates. This pabulum having once been exhausted, and the cells of the organisms having adapted themselves to this change, or been modified by it, is the supposed cause of future immunity. Vaccination, with a migrated virus, seems to habituate the phagocytes, or tissue cells, to the poison, and thus produce immunity; but according to the recent reports of the British Royal Commission, protection is relative, not absolute; temporary, not permanent. How sterilized cultures of germs and antitoxins produce immunity we do not know. The antitoxins seem to be secreted by the cells of the organism, and to combat the toxins secreted by the germs. Whether the antitoxic serum acts biologically or chemically we do not know. It may stimulate cellular resistance, or it may act chemically by checking germ growth or by neutralizing their action on the toxin. According to Behring and Kitasato the antitoxins aid the tissue-cells in resisting the action of the germs and its poison, and do not neutralize or destroy them. The germs that produce alcoholic fermentation give rise to chemical products, which ultimately check fermentation. Is self-limitation, in certain diseases, due to chemical products that have been produced by the germs of the disease? Disease is not limited by any period of the life history of the germ, for with suitable pabulum and proper conditions, germs will multiply and reproduce themselves indefinitely. Is self-limitation to disease due, therefore, to exhaustion of the elements on which the germs feed, to modification of the tissues, or to chemical products? In some infectious diseases, like diphtheria, erysipelas and tetanus, the germs may develop in only a small portion of the body—hence, the nourishment for the germs has not been exhausted, and one attack does

not immunize against another. There is a distinction, therefore, between self-limitation and immunity. Why is it that in some infectious diseases, like scarlatina, typhoid fever, smallpox, and measles, there is self-limitation and immunity to subsequent attacks, while in others, like pneumonia, erysipelas, and diphtheria there is self-limitation, but practically no immunity? How can we produce artificial immunity to diseases where the natural processes of disease do not afford immunity? For example, tuberculosis, in its natural process, does not seem to furnish the agents for self-limitation or immunity—hence how can we ever establish these artificially, except possibly by injecting antagonistic germs, or the serum of animals naturally immune, or by some other process yet undiscovered? As one disease may prevent the contraction of another by means of the antagonism of germs, it may be possible by injecting antagonistic germs to cure many diseases, as anthrax is cured by injecting the micrococcus prodigiosus. Natural immunity seems to be due to the condition of the blood. Can we, therefore, transfuse the nature of an immune animal, by blood transfusion, to the individual? A greater and more accurate knowledge of the cause, or causes of immunity, will enable us the better to secure artificial immunity. When we know how the tissues themselves combat infection, we may be able to aid them in their work. When we know more about the chemical and physical changes that go on in the cells during elimination and absorption, we will have far greater powers of combating disease. Along this line many great discoveries still undoubtedly await us. If the germ products that cause toxic symptoms also cause self-limitation and immunity by isolating the various chemical elements produced by the germs, could we not ascertain which of the chemical elements produce the harm, which self-limitation, and which immunity? If we could ascertain this, we might then secure from artificial cultures, or the serum, only the immunizing elements, and thus ascertain the relative merits of the chemical product, and the living virus. We know but little about immunity, and there remains much to be learned about the biochemistry, the poison, etc., of micro-organisms, and their products.

We do not know why it is that in people of apparent health we so often find the diphtheria bacilli in the throat, the pneumococci in the blood; the tubercle bacilli in the lungs, and many other pathogenic species almost constantly distributed throughout the organism, without producing disease. Montesano tells us that the tetanus bacilli and toxin have been found in large numbers in the nerve-centers, without producing their characteristic lethal effects. It appears that microbes, *per se*, are usually inoffensive. It is the condition of the germ, aided by physical condition that makes it virulent rather than the germ itself. Even the so-called pathogenic bacteria are not always guilty of homicidal intent. The diphtheria, typhoid, cholera and other pathogenic bacilli are widely spread in nature, are almost universal, but it is only when they become diseased or virulent that they become dangerous. What causes the diseased or virulent condition of the germ, or what makes them at one time pathogenic, and at another time not, we do not know. The contact of the germ with an organism of lowered vitality seems to cause the germ to become pathogenic or diseased. The virulence of a germ depends upon its nutritive and reproductive activities, and these are greatly increased when the germ is developed in a highly susceptible individual, and usually diminished when the germ is artificially cultivated. While in a patho-

genic condition it seems to secrete, or excrete, poisonous products which are most harmful to the organisms. How to prevent germs, therefore, from becoming virulent is one of the problems that now confront bacteriologists. We must more thoroughly understand the natural history of bacteria. We must study them individually and not in groups. When we more fully understand the structure and life history of the pathogenic bacteria we will undoubtedly be able to prevent bacteria from becoming pathogenic. Then antiseptics and serum-therapy will have vanished and become a landmark of the past. As we, through observation and research, more and more understand the objects and forces of nature, we will preside over them, while fate and limitation recede into the dim past. We will then, possibly, be able to convert the parasites—the degenerates of microbial society—to a better mode of life, and of activity, and we will more thoroughly understand and appreciate the beneficial effects of the saprophytes. We observe, therefore, that microbes have power for good or for evil, the same as all forces in nature. The good may become bad, and the bad may become good. How to civilize and Christianize the microbes so that they become harmless, if not beneficial, to humanity is a problem for the future. Many microbes are benefactors to humanity, and when rightly understood and managed, they become our friends, and life itself depends largely upon them. Schulze, Schwann, Pasteur, and many others believed that the fermentation that gives rise to bread, vinegar, wine, beer, etc., was due to micro-organisms. Recently Professor Buchner has declared that "fermentation is not a physiologic process, but is caused by the substance called *zymose*," which is a chemical product of the growth of yeast-cells. Most germ diseases are caused by the poisons generated by the cells. Is it not most probable, therefore, that fermentation is due to yeast juice rather than to yeast-cells. Some germs convert starch into cellulose, and some germs in the soil greatly aid plant life by forming nitrous and nitric acid, ammonia and phosphorus. Some color milk blue, and others transform the white snow of the Alps into scarlet. The phosphorescence of sea water is due to microbes. Many colors, aromas and flavors, are due to bacteria, as in butter and cheese. Dr. Johann Olsen of Norway; by bacteriologic methods, has produced the various textures and flavors of the different varieties of cheese. Certain microbes and combinations of microbes produce certain flavors. With the microbe corresponding to the flavor desired he inoculated a sterilized cheese, and thus secured the texture and flavor desired. Kahn has made a science out of butter making, and Hansen produces the various kinds of beer from various yeasts of his own production. Many industrial processes depend for their success on bacterial fermentation. Alzares has discovered a bacillus that "converts a sterilized decoction of indigo plant into indigo sugar and indigo white," the latter then oxidizing to form the valuable blue-dye. The proper preparation of tobacco leaves and of tea depends on the right amount of fermentation—the same is true of ensilage. Flax and hemp are steeped in a water containing a certain bacteria, which so acts on the plant as to aid in separating the choicest fibers. Bacteria also aid in the tanning process, and are in many ways useful in the arts. We observe, therefore, that although bacteria are essential factors in many diseases, they nevertheless are for the most part harmless, and may render a beneficent and important service to mankind. They are highly useful as scavengers and ferments, and do much toward keeping the world sweet and clean. Kijanizin, of the

University of Kieff, says that many kinds of intestinal bacteria, by acting as ferments, aid digestion. They decompose and peptonize the nitrogenous matter, and thus aid in the absorption of food. From Schottelin's experiments upon chickens it appears that microbes are, at an early period of life, essential to digestion, and at a later period an aid to digestion. It is also true that other intestinal bacteria cause disorders of digestion, by causing decomposition of food, and the production of various poisonous substances, which irritate the stomach, poison the system, and give rise to numerous symptoms. Some microbes are poisoners, murderers, vandals, and even incendiaries. According to M. Jean de Loverdo, there are incendiary microbes—the thermophiles—which are responsible for the so-called cases of spontaneous combustion. Microbes are thus beneficial and harmful, useful and useless. It is the problem of the future to ascertain the exact structure, composition and nature of microbes, so as to convert them to the highest use. The pathogenic microbial savages, with homicidal intent, must have their environments and nature modified or changed, so as to become harmless if not beneficent.

The microbe, it is true, is a great factor in evolution, and more thoroughly respects the doctrine of the survival of the fittest than any other agency or cause. It selects the weak and unfit, and as it is not in harmony or sympathy with altruistic sentiments, it usually destroys them. The simplest form of living matters—the cell, microbe, or micro-organism—is endowed, we are told, with psychic life. Can we, therefore, bring psychological influences to bear upon micro-organisms, so as to modify their nature, and make them more humane and altruistic in their sentiments toward humanity. This suggestion may seem like pleasantry, and is undoubtedly impracticable, still Bunge, Gruber, Verworm, Moebius, Balbiani, Binet and others, believe that in both vegetable and animal organisms, we find manifestations of an intelligence which greatly transcends the phenomena of cellular irritability. They believe that "psychologic life begins with living protoplasm," for the phenomena of life obey much more complicated laws than any merely physico-chemical phenomena, or phenomena due to cellular irritability. Life emanates but from one source, and wherever there is life there is design, intelligence, the power of choice, and other psychic manifestations. "The same desires," says Montaigne, "stir mite and elephant alike. The psychic life of the bee is as complex as that of the whale." The varied movements, caprices, and frolics of micro-organisms, their selection, and method of seizing and appropriating food, all indicate psychic faculties. According to Ehrenberg, Pouchet, Kunstler, Lachmann, and others, some micro-organisms possess organs of sight, hearing, and of touch, and manifest surprise and fear. Some micro-organisms are herbivorous, and others carnivorous. There is not only selection of the food, but there is sexual selection. We observe, therefore, that all psychic and vital phenomena are present in micro-organisms; but if such were not the case, we would have to assume that they were "superadded in the course of evolution, in proportion as an organism grows more perfect and complex." All life originates from a minute point of matter called a cell. Human life first starts from the union of a sperm-cell with a germ-cell. These cells live as minute organisms, independent of the individual from which they originate. They possess vitality and psychic life. The sperm-cell, or spermatozoid, has organs of locomotion, and in obedience to a kind of innate instinct that is intelligent and volitional, it seeks the ovule, and accord-

ing to Binet "is animated by the same sexual instincts that direct the parent organism toward its female." The ovule throws out a minute protuberance, called the cone of attraction, on which the head of the spermatozoid fastens itself, and is then drawn into the interior of the ovule, and by the union or fusion a more complicated cell is formed which begins that strange process of evolution, or development, by which cell is added to cell, and part to part, until a most wonderful and complex organism is produced. If the sperm-cell does not possess psychic life how could a father transmit his form, features, disposition and peculiarities to his child? The same is true also of the germ-cell, which represents the psychic life of the mother. Is it not plain, therefore, that psychic life can and does exist in a single cell or micro-organism? The whole possibilities of man—his form, features, and every faculty and endowment—exist as a latent potential in the original germ. A study of the life, habits, and peculiarities of the individual germ, its psychic life, may lead us to discover the cause of its virulence or pathogenic condition and enable us to convert a bad germ into a good one, or a useless into a useful one. In this age of psychic research, may this not be a problem for the future? Dr. Baraduc of France claims to have succeeded in photographing certain emanations from the human body, and of having caught the human soul itself on his sensitive plates. At Munich he exhibited no less than four hundred photographs of this kind. He also claims to have secured "photographs of familiar spirits, and the like," and in the near future will undoubtedly discover the shape of an odor, the length of an emotion, and the color of thought. When all this is accomplished, some psychologic genius may be able to hold communion with the lower organisms, and interpret aright their psychic life. If there is to be progress and new discoveries in the future, there must be, as in the past, scientific daring and the spirit of adventure. This spirit of inquiry, research and daring has given us in the last ten years many new and sensational discoveries in mechanics and physics, such as the modern bicycle, horseless carriages, electric railways, polyphase currents, the Laval steam-turbine, the interior combustion motor, calcium carbide, the cinematograph, the Roentgen rays, liquid air, hydrogen and other gases, color-photography, wireless telegraphy, cold light, high-frequency currents, etc. There seems to be no limit to future possibilities; hence the prospect for the future is the brightest. The skiagraph may foreshadow the invention of a dolor-meter to measure the amount of pain, and other similar inventions. We may then have some delicate instruments to measure thought and emotion. We may then use liquid air to furnish pure air for our hospitals; to reduce the temperature in fever wards in the tropics. We may then convert bacteria to some useful purpose. M. P. Melnikoff has already constructed an engine which depends for its motive power upon the fermentation of bacteria and the presence of the gas generated. In the future we may regulate sex by the quality and quantity of the food digested. In the future, hypnotism and more useful. Scientific investigation has done much to clear hypnotism of its mysticism, and the explanation of the duality of mind has given to hypnotic suggestion a therapeutic application. Through physical and psychic research all forms of occultism are being placed on a more rational basis, and in the future the relation of mind and body will be more thoroughly understood.

At the present time it is believed that the germs of certain diseases are too small to be revealed by even the

compound microscope, with the best immersion objective—for any germ much smaller than the influenza bacillus could not be recognized by the microscope. An improvement in our microscopes might reveal to us the germs of all our infectious diseases and teach us the etiologic importance of germs as a factor in disease. The limitations of the microscope may prevent us from ascertaining many mysteries that reside in the living cell and germ. Can we ever so increase the powers of the microscope as to determine the mysteries of life and the secrets of death? Will we not, in the future, so strengthen the cell that it can withstand the invasion of pathogenic bacteria? A greater knowledge of the pabulum on which bacteria feed may cause such an improvement in the living culture-media as to enable us to cultivate the pathogenic bacteria, and to isolate and study them more effectively. The normal blood-serum, especially in the naturally immune, holds in solution chemical substances or specific antitoxins, which are manufactured by the cells of the organisms. In the future the art of serum-therapeutics will be to obtain this immunizing product. Possibly chemistry may yet discover the antidote for the poisons generated within the human system—some drug that is innocuous to the patient and destructive to the germ. It is highly probable that in the near future the effective serums and antitoxins may ultimately banish infection. With a fuller knowledge of natural and acquired immunity we will undoubtedly be able to prevent all contagious diseases, as we are now able to prevent a few by inoculation. "By a process of vaccination or immunization it may soon be possible," says Pasteur, "for man to eradicate every contagious disease from off the face of the earth." At present, therefore, clinical medicine should seek protection from all toxic agents, and immunity from diseases. May we not, in the future, so understand the secrets of life and the cause of disease as to secure to each individual a limited immortality? Then the patient may beseech the doctor to let him die instead of keeping him so long in this vale of tears. We will then quarantine the mosquitoes and flies so that they will not spread disease. The scientific spirit will eventually overcome the commercial and mercenary spirit of the age, which foists upon us germ juices and specifics *ad nauseam*, and the mad rush after every fad and fancy, every novelty, will cease. Commercial houses will no longer lord it over the medical profession. They will supply the demand, and no longer create it. Honest seekers after truth, observers, experimenters, will then advance the science of medicine. There will then be less credulity and more judgment, and the bewildering and disgusting multiplications of so-called remedies, which like the Dutchman's razor, are made to sell, will no longer depend upon the testimonials of the credulous and ignorant. Dr. Elmer Lee says that "in some future day it is certain that drugs and chemicals will form no part of a scientific therapy." No one will then enter the medical profession except from a pure love of humanity, a love of science, and self-abnegation. The medical prospects for the future are inspiring, for the doctor is becoming more and more a self-sacrificing altruist, and seeks prevention rather than cure. Increased knowledge of the cause of disease has so greatly increased our powers of prevention that the future for humanity promises to be far more free from disease, far healthier, and far happier.

DR. MARK A. BROWN has been elected professor of materia medica and therapeutics in the Cincinnati College of Medicine and Surgery.

Therapeutics.

Internal Treatment of Lupus with Fluorin.

A. Philippson has been testing sodium fluorid in the treatment of lupus since 1895, and now announces that we have in it a most effective means of favorably influencing lupus, applied in a 10 per cent. plaster, but most active taken internally. His report in the *Dermatologische Zeitschrift* for July, of several cases followed for a couple of years, more or less, emphatically demonstrates the value of this new medication. Unfortunately it causes gastric disturbances in time, requiring suspension of its use before the cure can be completely realized. To obviate this he resorted to an organic preparation—natr. parafluorbenzoicum—and found this equally effective, readily taken and free from after-effects. The prompt and marked improvement constantly attained suggests its application to other tuberculous processes. The dose is $7\frac{1}{2}$ grains three times a day.

Methyl Salicylate in Pruritus.

In a number of cases the effect has been immediate and abnormally remarkable. It has been found effective in pruritus, prurigo and lichen simplex. The following is the formula:

- R. Methyl salicylate.....gr. xxx
Zinc oxid
Vaselin aa.....5v

M. Apply in a thick salve, so that it will adhere closely to the skin.

—Lercôdt.

Soluble Metallic Mercury in Syphilis.

From an experience of eighty-two cases of syphilis in various stages, all promptly and thoroughly cured with inunctions of the new soluble preparation of mercury—similar to Credé's soluble metallic silver—O. Werler recommends it as the easiest, simplest and most effective means of curing all syphilitic processes, in a communication in the *Derm. Ztft.* for July. Very much less of the mercury is required than in any other form. It is more rapid, non-toxic, non-irritating and an improvement in every respect over other methods of mercurial treatment, internal or external, according to his experience. The formula for the salve is:

- R. Hydrargyri colloidalis.....5iiss
Aque destil.....3iiss
Adipis suilli et ceree albae (4-1).....5xviiss
Ether sulph.....gr. xxviiss
Ether benzoati.....gr. liiss

For Insect Bites.

- R. Flexible collodion.....5iiss
Salicylic acid.....gr. xv
R. Collodion.....5iiss
Mercuric chlorid.....gr. vii
M. Apply locally to arrest pain and abort inflammation.

—Beinbeck.

Acute Gastritis.

For the vomiting of acute gastritis Pepper frequently prescribed one of the following formulae:

- R. Hydrag. chor. mit.....gr. i
Bismuth subnitrat.....gr. xxxvi

M. Ft. powders xii. Take one powder dry upon the tongue every three hours until four or five have been taken.

- R. Acid. carbol.....gtt. iv
Sodi bicarb.....3iiss
Elix. aurant.....5ss
Aque q. s. ad.....5iv

M. Sig. A teaspoonful every three hours.

Myalgia.

This affection is unusually trivial as to duration and consequences, but often is such a source of discomfort to the patient that a ready remedy is a definite addition to the physician's armamentarium.

- R. Ext. cimicifuga fl.
Ext. erythroxylon fl.
Tr. guaiac. ammon., aa.....f3i
M. Sig. A teaspoonful three times a day.

Cardiac Dropsy.

The following diuretic pill, suggested by H. C. Wood, will be found of great value in cases of cardiac dropsy.

- R. Pulv. scilla
Pulv. digitalis
Cafein citrat, aa.....5ss
Hydrag. chol. mit.....gr. v
M. Ft pil xxx. Sig. One pill three times daily.

To Keep the Hands White and Soft.

In these days of asepsis the hands of the physician, and especially of the surgeon suffer greatly from frequent scrubbing and immersions in antiseptic solutions. A preparation that will keep the hands white and soft and that will not at the same time be inelegant to use, is always in demand. The following formula will be found to be one of the very best ever proposed for this purpose:

- R. Ol. rose.....gtt. xv
Glycerin.....3i
Spts. myrcia.....3iiss
Ol. cajuput.....gtt. xx

M. Apply at night before retiring, first washing the hands thoroughly in hot water. In cold weather this can also be applied to the hands before going out.

Fatulent Dyspepsia.

While the following formula is not pharmaceutically elegant, it is at times exceedingly efficient in the treatment of gastric fermentation.

- R. Bismuth salicyl.....3ii
Magnes. carb.....3ii
Carbo pulv.....3iiss
Ol. menth. pip.....gtt. xx

Of this powder give a small teaspoonful one-half to one hour after meals.

Atropin in Bronchial Asthma.

Von Noorden recommended Trousseau's method of treating asthma, e. g., by atropin (*Journal of Med. and Science*). The treatment lasts from four to six weeks, commencing with half a milligram per dose, increasing every two or three days by half a milligram, until a dose of four milligrams has been reached. After having reached this amount, the dose is again gradually diminished. If the dose is increased so gradually, no injurious by-effects will be noticed, but nevertheless the patient must be under the physician's supervision. On the attack abate, the atropin has no effect, but it prevents further attacks for a long time. Where no permanent cure is achieved by the atropin there is at least a long-lasting improvement; provided the asthma is not complicated by emphysema and chronic bronchitis.

Malarial Cachexia.

Dr. Lockwood recommends the following for the anemia following malarial attacks.

- R. Ferri redacti.....gr. ii
Pulveris ipecac.....gr. ¼
Acidi arseniosi.....gr. 1/40
Ext. colocynth Co.....gr. ii
M. Ft. pil. Sig. Take one three times daily.

—Louisville Med. Mon.

Suprarenal Gland in Chloroform Accidents.

In the *Revue de Therap. Medico-Chir.*, we are told that Minkowsky has repeated the experiments of Biede and of Gottlieb, and has found that the use of suprarenal gland in the lower animals does much toward preventing accidents during the administration of chloroform, probably through its powerful influence on the vascular system.—*Therap. Gascite*.

Treatment of Gonorrhœal Ophthalmia.

Dr. D. T. Vail of Cincinnati summarizes an excellent paper on this subject as follows:

1. The general practitioner should always warn his gonorrhœa and leucorrhœa patients of the danger of inoculating their eyes.
2. As the family physician is usually the first consulted,

he has the golden opportunity which the first hours afford. He should seal the unaffected eye at once.

3. It is well to bear in mind that all cases of purulent ophthalmia are not gonorrhœal; on the contrary, only a very small percentage are.

4. For diagnostic and scientific reasons microscopic examination of the discharge should be made.

5. For the cornea to escape involvement is the great exception.

6. The best early treatment in my judgment is: *a*, leeching; *b*, continuous iced applications day and night; *c*, nitrate of silver, 2 to 4 per cent. solution, applied to the everted eyelids once or twice a day; *d*, non-irritating gentle flushing of the eye every few minutes; *e*, canthotomy downward and outward to liberate the lower lid.

Subcutaneous Injection for Hemoptysis.

- R. Ergotin ʒiv
 - Morphine hydrochloratis gr. 1/12
 - Antipyrini gr. xxiiiss
 - Sparteina sulphatis gr. 1/30
 - Atropina sulphatis gr. 1/32
 - Aque destil., q. s. ad ʒiiss
- M. Sig. One hypodermatic (n. x to xv) every half or quarter hour, not exceeding five in all.

—*Capitan, Med. Rec.*

Gargling in Hiccough.

Dr. Laura M. Plantz, of Putney, Vt., calls attention to the value of gargling the throat in cases of hiccough. She has tried this treatment in several cases, says the *Jour. of Med. and Science*, and in no case did it fail. It seems to make no especial difference whether cold water is used or some medicated solution, the act of gargling being the one essential thing. The relief of the spasm is probably to be explained by the fact that the gargling sets up a reflex action in a new direction, and the spasmodic action of the diaphragm ceases. Mr. Morrill Macenzie long ago called attention to the fact that in dangerous spasm of the glottis the one thing to do is to set up reflex sneezing by tickling the nose with a feather or by use of snuff. The act of gargling must relieve spasms of the diaphragm in a similar way.

To Check Hemorrhage.

Chlorid of calcium, in doses of eight to sixteen grains, every two to four hours, should be tried in all forms of persistent hemorrhage, especially hemoptysis, hematuria, and intestinal hemorrhage of typhoid fever, for this salt increases the coagulability of the blood. It should be remembered, however, that this drug should not be used more than three days continuously, for its prolonged use decreases the coagulability of the blood.

For Sweating Feet.

- B. Formaldehyde gr. x
 - Thymol gr. x
 - Zinc oxid. ʒiiss
 - Powdered starch ʒiiss
- M. Sig. Apply as a dusting powder.

Pepsin in Burns of the Third Degree.

O. Waterman of New York gives a history of a case, reported in *Merek's Archives*, of a machinist, 46 years of age, who received a burn of the third degree, caused by some boiling pea-soup which was spilled over his left forearm. This was at first treated with carron-oil, and next day with iodoform gauze. At the end of three or four days the wound had a raised edge and was covered with a dirty-whitish purulent secretion. Some places were curetted. Pepsin was then sprinkled over the arm and the whole surrounded by a gauze bandage. At the end of four days this was removed and the wound surface was studded over with healthy granulations, and here and there new patches of epidermis had commenced in this short time to develop. The wound was then again cleansed with antiseptics and another sprinkling of pepsin applied. At the end of about twelve or

thirteen days the whole arm was healed and there was no scar tissue. It is also to be noted that the patient was anemic and suffering from tabes dorsalis.

Antiemetic Mixtures.

The *Gazetta degli ospedale e dell clinica* attributes the following to Wighesworth, says the *N. Y. Med. Jour.*:

- R. Mentholi gr. xv
 - Alcoholis ʒi
 - Syrupi, aa ʒss
 - Aque chloroform. ʒviiiiss
- M. Sig. A dessertspoonful every half hour.

Vomiting of Pregnancy.

For the vomiting of pregnancy and bilious vomiting the following are given:

- R. Acidi carbolic. gr. 9/10 to 4½
- Chloroformi ʒt. v
- Syrupi ʒi
- Aque destillate, aa ʒssxx
- Tinct. aurantii cort. q. s.

M. Sig. A dessertspoonful every two hours. Some spoonfuls of water should then be administered from time to time.

Treatment of Burns.

In a communication from Paris in *The Therapeutic Gazette* the following formula employed by Dr. Lucas Championnière in the treatment of burns is given:

- R. Vaseline ʒviii
- Essence of thyme.
- Essence of organum.
- Essence of verbenæ.
- Essence of geranium gr. iiss
- Naphtholate of soda gr. xv-lxxv

Quinin Sulphate in Exophthalmic Goiter.

Paulesco, in collaboration with Raynier, has made certain studies in regard to the pathogenesis of exophthalmic goiter. He believes that the principal trouble in this affection is the vasodilatation which affect the blood-vessels of the neck and head. As the result of this distension we have tremor, the goitrous swelling and active congestion of the thyroid body which produces in its turn a hypersecretion of the gland, and which has a distinct physiologic action. Paulesco claims that he has employed the sulphate of quinin with remarkable results, arising from its influence in producing vasoconstriction of the vessels of the head and neck. He gives fifteen grains of it at night after supper, and again a quarter of an hour later. He states that this treatment decreases the tachycardia, diminishes the exophthalmus and the size of the goitrous swelling. —*Revue de Therap. Med. Chir.*

For Irritating Cough of Phthisis.

When not accompanied by much expectoration the following mixture is recommended:

- R. Codeinæ gr. iv
- Acidi hydrochlorici dil. ʒss
- Spiritus chloroformi ʒiiss
- Syrupi limonis ʒi
- Aque destil., q. s. ad ʒiv

M. Ft. emulsiõ. Sig. One teaspoonful at short intervals when cough is troublesome.

—*Murrell.*

Treatment of Early Morning Diarrhea.

Lemoine (*Nord Med., Med. News*) thinks that the morning diarrhea, occurring especially in nervous individuals with an excess of hydrochloric acid, can be favorably affected by a suitable diet. Toast or broiled meat should be taken at supper time, and no vegetables. He gives his patients ½ to 1 dram (2 to 4 grams) of bicarbonate of soda before the evening meal, and at bedtime 2½ drams (10 grams) of gelatinized phosphate of chalk, either in milk or in syrup.

Diarrhea after meals occurs also in hyperchlorhydric persons. They should be put on a correct diet, and should lie down after eating. Each meal should be followed by 2 or 3 drops of acetum opii in a little water.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Chicago Medical Recorder, August.

- 1.—*The Medical Profession: The Causes of its Division into Discordant Elements and the Reasons I am Not a Homeopath. Wm. E. Quine.
- 2.—*Carcinoma Developed in Primarily Non-Malignant Cyst-Adenoma of the Ovary. F. Henrion and M. Herzog.
- 3.—*So-Called Congenital Obliteration of Bile Ducts. F. X. Walls.
- 4.—*Quantitative Determination of Albumin in Urine. C. W. Purdy.
- 5.—*Relations of Colon to Intra-Abdominal Tumors. M. L. Harris.
- 6.—*Some Interesting Surgical Cases. D. W. Eisendrath.
- 7.—Spontaneous Dislocation of Hip-joint Complicating Typhoid Fever. A. N. Burr.

Canada Lancet (Toronto), August.

- 8.—*Some of the Resources in the Diagnosis, Classification and Treatment of Cystitis. E. C. Dudley.

Cleveland Journal of Medicine, August.

- 9.—*Surgical Cases of Disease of the Bladder and Urethra. Wm. H. Fisher.
- 10.—*Extrauterine Pregnancy. M. Rosenwasser.
- 11.—*Epidemic Cerebrospinal Meningitis. W. T. Howard, Jr.
- 12.—*Mastoiditis. Royce D. Fry.
- 13.—*Should Appendicitis be Considered a Medical and a Surgical Disease? George W. Crile.

Annals of Ophthalmology (St. Louis, Mo.), July.

- 14.—*Hydrophthalmos: a Bibliographic, Clinical and Pathologic Study. Walter L. Fyfe.
- 15.—*Retinitis Circinata. W. E. Bruner.
- 16.—*Typical Diabetic Retinitis: Report of Two Cases. H. O. Reik.
- 17.—*The Crisis in Binocular Vision. J. L. Barnes.
- 18.—*Two Cases of Unilateral Total Ophthalmoplegia; Crossed Hemiplegia being Associated with the Ocular Paralysis in One Case. H. F. Hansell and W. G. Spiller.
- 19.—*Tumors of the Brain. U. O. B. Winzate.
- 20.—*What Amount of Axial Myopia Theoretically Produces Emmetropia for Distance after Removal of the Crystalline? Carl Welland.
- 21.—*The Dioptric Eye, an Explanation. Edward Jackson.

Obstetrics (N. Y.), August.

- 22.—*Treatment of Eclampsia. Joseph B. DeLea.
- 23.—*Operative Treatment of Labor Complicated by Pelvic Deformities. George W. Dobbin.

Iowa Medical Journal (Des Moines), August.

- 24.—Hospital at Independence. Gershom H. Hill.
- 25.—Our Obligations to the Public. Harold Bailey.
- 26.—*Suppurative Pyelocystitis. F. E. Walker.
- 27.—*Two Unusual Cases. F. L. Rogers.
- 28.—*Chairman's Address—Section on Hygiene. C. F. Wahner.

Medical Sentinel (Portland, Ore.), August.

- 29.—*Use of the Curette in Gynecology. E. F. Tacker.
- 30.—*Hysterectomy or Myomectomy. K. A. J. Mackenzie.
- 31.—*Some Thoughts on Medical Advertising. E. Stuver.
- 32.—*Depreciation of Vision. R. Nunn.

Texas Medical News (Austin), August.

- 33.—*Therapeutic Value of Causus Indica. John V. Shoemaker.
- 34.—*Constipation. R. C. Fisher.

Alabama Medical and Surgical Age (Birmingham), August.

- 35.—*Disorders of the Nervous System Accompanying Gynecic Diseases. R. S. Hill.
- 36.—*An Organic Compound of Silver Nitrate. Geo. H. Stubbs.
- 37.—*Meningitis. R. C. Bankston.
- 38.—*An Interesting Case of Obstetrics. E. C. Anderson.

Pennsylvania Medical Journal (Pittsburg), August.

- 39.—*Some Injuries of Parturition, Especially of the Perineum. Francis P. Ball.
- 40.—*Treatment of Acute Injuries of the Brain, Based on Indications of Cerebral Anemia of Engorgement, with Report of Cases. J. H. Anderson.

- 41.—*Remarks on Nephrectomy, with a Plea for the More Certain and Earlier Diagnosis of Conditions Requiring it. Chas. P. Noble.
- 42.—*Note on Employment of Solutions of Toluidin-Blue in the Treatment of External Inflammatory Diseases of the Eye. Clarence A. Vasey.
- 43.—*Some of the Legal Results of Advanced Medical Legislation. W. S. Foster.
- 44.—*State Board of Health and Antitoxin. Thos. D. Davis.
- 45.—*Observations on Nature and Her Methods. W. R. Hockenberry.

Occidental Medical Times (San Francisco, Cal.), August 15.

- 46.—*Intravenous Injections (Bacelli) of Mercury in the Treatment of Syphilis. Dudley Tait.
- 47.—*A Case of Foreign Body in the Heart. W. Ophuls.
- 48.—*Case of Marked Deformity of the Nails (Onychogryphosis) in Anesthetic Leprosy. Douglas W. Mootgomery.
- 49.—*Remarks on Diagnosis and Modern Treatment of Pulmonary Tuberculosis. George L. Cole.
- 50.—*Case of Tabes with Unilateral Atrophy of the Tongue. Paul Lanz.

Bulletin, American Academy of Medicine (Easton, Pa.), August.

- 51.—*Duty of the Doctor as a Teacher. Edward Jackson.
- 52.—*Ethics of Specialism. A. L. Benedict.
- 53.—*Evolution of Specialism. Ruth W. Lathrop.
- 54.—*How Far Has Specialism Benefited the Ordinary Practice of Medicine? L. D. Buckley.

- 55.—*Some Obstructions to Progress of Specialism in Medicine. G. H. Makuen.

- 56.—*Effect of Specialism on the Medical Profession. J. C. Morris.
- 57.—*The Passing of Materialism. G. M. Gould.
- 58.—*Ethics of Medical Advertising. R. H. Babcock.
- 59.—*What Benefits Do the Laity Derive from the Honorable and Efficient Physician's Abstinence from Ordinary Advertising? A. Goldspohn.

- 60.—*Advertising in the Medical Profession. C. T. McClintock.
- 61.—*Some Effects on Present Methods of Advertising on Medical Literature. J. A. Lighty.

- 62.—*Ethics of Advertising Applied to the Medical Profession. A. Kavouli.

- 63.—*What Shall Be the Future Policy of the Medical Profession with Regard to Medical Advertising? E. Stuver.

- 64.—*Care of Northern Troops in West India Islands. Geo. G. Groff.
- 65.—*Some Remarks on Hospital Organization, with Special Reference to Continuous Service. J. C. Wilson.

- 66.—*What Shall Be the Minimum Standard of Requirements for Admission to the Study and Practice of Medicine? W. W. Potter.

- 67.—*The Tennessee Method. T. J. Happel.
- 68.—*On the Preparation of Questions. Edward Cranch.
- 69.—*The Unifying Influence of the Three Board System. H. M. Paine.

- 70.—*Remarks on Brain Lesions Following Infective Middle-Ear Inflammation, with Special Reference to Symptoms, and Briefly as to Operative Measures. B. E. Fryer.

- 71.—*Pepto-Mangan in Treatment of Anemia in the Female. A. L. Fulton.

Medical Monograph (Topeka, Kan.), July.

- 72.—*Typhlitis not Perityphlitis. John A. Mitchell.
- 73.—*Intussusception or Invagination. J. F. Pickeler.
- 74.—*Chronic Gastro-Intestinal Catarrh. W. J. McAnally.
- 75.—*Summer Complaints of Children. E. A. Donnyer.
- 76.—*Feeding in Relation to Diarrhea of Children. T. W. Peers.
- 77.—*Intestinal Therapeutics. B. D. Eastman.
- 78.—*Artificial Feeding in Infants. H. A. Bunker.

Chicago Clinic, July.

- 79.—*Laryngeal Tuberculosis. J. Homer Coulter.
- 80.—*Unscientific Commercialism Contrary to Ethics and Good Manners. I. N. Albright.

- 81.—*Hemorrhoids Complicated with Pruritus Ani; Fistula in Ano in a Tuberculous Patient. J. R. Pennington.

- 82.—*President's Address before the Twenty-third Annual Meeting of the American Dermatological Association. John A. Fordyce.

- 83.—*Acute Gonorrhoea; Its Prevention and Cure. Thomas G. Youmans.
- 84.—*Some Notes on Syphilis. C. T. Pearce.

St. Louis Medical and Surgical Journal, August.

- 85.—*Pathology and Therapy of Cancer, with Special Reference to Cancer of the Stomach. Augustus C. Bernays.

- 86.—*A Successful Treatment of Dermatic Eruptions. William Hooker Vail.

- 87.—*Comparative Therapeutic Value of Recent Antiseptics in Pediatric Practice. G. M. Blech.

Southwestern Medical Record (Houston, Texas), August.

- 88.—*Placenta Previa. W. P. Gilstrap.
- 89.—*Prevention of Contagious Diseases. N. J. Phenix.
- 90.—*Antitoxin and Surgical Treatment of Diphtheritic Laryngitis. Jos. Muller.

- 91.—*Modern Obstetrics. Halston Littimore.
- 92.—*Necessity for a State Pediatric Society. O. B. Bush.
- 93.—*Ectopic Pregnancy. J. W. Long.

- 94.—*A Fibroid and an Ovarian Tumor—Aphasia, Agraphia, Paralysis. M. J. D. Dautzler.

- 95.—*A Report of Three Abdominal Sections. S. W. Pryor.
- 96.—*Diagnosis of Bullet-Wounds of the Intestines. Hurch M. Taylor.
- 97.—*Observations on the Use of Tannopin in the Treatment of Gastro-Intestinal Disorders. W. E. Fitch.

- 98.—*Woman's Medical Journal (Toledo, Ohio), August.

- 99.—*Puerperal Insanity, Cause, Symptoms and Treatment. Anna Burnet.
- 100.—*A Common Case and Its Practical Suggestions. Josephine M. Wetmore.

- 101.—*Pregnancy Nephritis: Report of Case. Frances H. Lee.
- 102.—*Pillourea of Cervix, with Report of Two Cases. L. G. Townslee.

New York Lancet, August.

- 103.—*Some Acute Pulmonary Troubles. R. S. Michel.
- 104.—*Rational Treatment of Consumption. J. G. Sinclair Coghill.
- 105.—*Case of Tetania with Convulsions. C. L. Fraser.
- 106.—*What's the Use? I. N. Love.
- 107.—*Eclampsia: Induction by Premature Labor; Recovery. W. C. Howle.

- 108.—*Canadian Journal of Medicine and Surgery (Toronto), August.

- 109.—*Restoration of Lower Lip after its Entire Removal for Cancer.
- 110.—*Bacteriologic Work in the Laboratory. M. L. Beeman.
- 111.—*A Systematic Bacteriologic Examination of the Fauces in Scarlet Fever as a Means of Preventing Post-Scarlatinal Diphtheria. G. C. Garratt and J. W. Washburn.

- 112.—*North Carolina Medical Journal (Charlotte), August 20.

- 113.—*Case of Abdominal Pregnancy of Nearly Two Years' Duration. M. Balkin.
- 114.—*The Doctor, the Druggist, Proprietary Medicines, Patents, etc. Wilbur F. Stermann.
- 115.—*Should Nerve Stimulants be Administered to Pregnant Women? S. L. Perkins.

Medical Fortnightly (St. Louis, Mo.), August 15.

- 113.—**Lung Gymnastics.** Albert Abrams.
 114.—**Howard Kelly's Proctoscope as a Factor in the Diagnosis and Treatment of Ulceration of the Rectum.** Leon Straus.
 115.—**Physiology.** A. L. Benedict.
Virginia Medical Semi-Monthly (Richmond), August 11.
 116.—**Pharmacy the Handmaid of Medicine.** W. J. Jackson.
 117.—**Philosophy of Sickness.** Thomas P. Harrington.
 118.—**Adenoid Vegetables, with Especial Reference to their Influence on the Ear.** A. W. Callahan.
New York Medical Journal, September 2.
 119.—**The Sphere of Laryngology.** The President's Address. Wm. E. Casselberry.
 120.—**Is the So-Called American Voice due to Catarrhal or Other Pathological Conditions of the Nose?** John W. Farlow.
 121.—**Observations on the Treatment of Hay-Fever.** Benham Douglas.
 122.—**Bovine Tuberculosis in its Relation to Man.** Edward Moore.
 123.—**The Therapeutic Value of Oxygen.** W. L. Conklin.
 124.—**Cerebral and Meningeal Syphilis Treated by Intramuscular Injections of Insoluble Salts of Mercury. Some Points in Technique.** J. Coplin Stinson.
 125.—**A Case of Colocynch Poisoning.** William Ellery Jennings.
Boston Medical and Surgical Journal, August 31.
 126.—**The Effects of Training.** A Study of the Harvard University Crews. Eugene A. Darling.
 127.—**A Safe and Quick Method of Joint and Bone Fixation.** Edward A. Tracy.
 128.—**A Case of Sarcoma of the Uterus; Repeated Operations; Recurrence; Death.** S. J. Mixer.
 129.—**A Case of Myxosarcoma of the Uterus and Vagina, from the Service of Dr. J. G. Blake at the Boston City Hospital.** E. H. Mackay.
 130.—**Case of Sarcoma of the Uterus.** F. H. Davenport.
 131.—**Sarcoma of the Uterus.** William F. Whitney.
Cincinnati Lancet-Clinic, September 2.
 132.—**Medicine.** H. H. Spiers.
Maryland Medical Journal, September 2.
 133.—**The So-Called Typhoid-Pneumonia.** Frank R. Smith.
 134.—**Ethyl Bromid as an Anesthetic in Minor Surgery.** J. Elmond Kempler.

Medical Record (N. Y.), September 2.

- 135.—**Psychotherapy: or Suggestion as a Cause and Cure of Disease.** H. H. Seelye.
 136.—**The Etiology of Scarlet Fever.** W. J. Class.
 137.—**A Preliminary Report upon the Use of Pure Carbolic Acid in the Treatment of Mastoid Wounds with Chronic Suppuration of the Middle Ear.** Venedictor Phillips.
 138.—**An International Language for Scientific Men—Is it a Possibility?** R. Ellis.
 139.—**Most Sinus Disease Following Influenza.** Charles Stedman Ball.
 140.—**Report of a Case of Cerebral Meningitis, Manifesting Extraordinary High Temperature.** R. B. Christien.
 141.—**An Interesting Case of Membranous Sore Throat.** Beverly Robinson.
 142.—**Cerebrospinal Meningitis with Ulcerative Endocarditis and Abscess of Myocardium, due to the Diplococcus Intracereularis of Weichselbaum.** L. Napleton Boston.
Philadelphia Medical Journal, September 2.
 143.—**A Year of Abdominal Surgery at the Pennsylvania Hospital.** Philadelphia. Francis T. Stewart.
 144.—**Difficult Points in Gynecologic Diagnosis.** Wilmer Krusen.
 145.—**Subcutaneous Rupture of the Intestines.** Henry C. Keenan.
 146.—**The Symptomatic Treatment of Consumption.** Benj. F. Lyle.
 147.—**A Case of Intrauterine Epidemic Cerebro-spinal Meningitis.** R. E. Gradwohl.
 148.—**Acute Abdominal Symptoms Demanding Surgical Intervention.** Maurice H. Richardson.
 149.—**Paroxysmal Hemoglobinemia; Report of a Case.** Philip S. Roy.

AMERICAN.

1. See JOURNAL, April 29 and May 6.
 2. **Carcinoma of the Ovary.**—Henretin and Herzog report two cases of the comparatively rare condition of the development of carcinoma on a primary non-malignant cystadenoma of the ovary. Both cases were demonstrated pathologically, after removal. In the first case perfect cure was apparently obtained; in the second, a recurrence of the malignant disease carried off the patient in a comparatively few months. The authors remark on the frequency of the primary condition and its lasting for many years, and in many cases without developing malignancy as in these cases.
 3. **Congenital Obliteration of Bile Duct.**—According to Walls, the so-called congenital obliteration of the bile-duct is a misnomer. In the great majority of cases, if not in all, an inflammatory infection of the larger bile-passages initiates the disorder, and as the tendency does not seem to be toward spontaneous cure, unless speedily relieved, the condition passes into an adhesive or obliterating angiocholitis, with or without cystic dilatation, terminating fatally within a few months. The indications for treatment are, he states: 1. Prophylactic: Aim to prevent, especially during the first few weeks of life,

all irritation of the gastro-intestinal canal. 2. Medical: Remove or counteract any condition that may have occurred, lessen the intensity of the inflammation; stimulate intestinal, hepatic and pancreatic activity. 3. Surgical: When medicine is of no avail, at the earliest moment consistent with the exclusion of possible error in diagnosis, inspect the bile passages and endeavor to establish bile-flow by probing the bile-duct, dislodging the foreign mass, dilating if necessary or in the event of organic obstruction establish an anastomosis between intestinal and biliary tracts.

4. See abstract in JOURNAL, August 26, '97, p. 599.

5. This paper was printed in the JOURNAL of February 18.

6. **Some Interesting Surgical Cases.**—Eiscendath reports a case of surgical kidney in a woman aged 27 years, relieved by the operation of nephrectomy, with good recovery, showing that the prognosis of this condition is not necessarily unfavorable. Another case is reported, of traumatic rupture of the urethra requiring suprapubic cystostomy and retrograde catheterizing, also attended with success. The paper discusses the literature of these conditions.

8. **Cystitis.**—The summary of Dudley's paper is as follows:

1. The conditions which were formerly considered the prime causes of cystitis have receded to their proper place and must be estimated only as predisposing causes. 2. The recognition and appreciation of pathogenic bacteria as the exciting causes of cystitis is essential to a scientific understanding of its pathology, etiology and treatment. 3. Alkalinity of urine depends on the action of certain bacteria, notably the proteus vulgaris, in the decomposition of urea. The bacillus coli communis, which is one of the most frequent causes of cystitis, is one of a class which does not decompose urea and therefore does not produce ammoniacal urine. Contrary to the older opinion, alkalinity is not the rule; on the contrary, in the majority of cases the urine remains acid. Alkalinity, if present, is often the work of microbes secondarily introduced. 4. The classic symptoms of vesical pain, frequent urination and pus in the urine are wholly inadequate as a basis of the diagnosis of cystitis. Moreover, the condition called cystitis has receded from the rank of a distinct disease to that of a symptom, and should be so regarded. The mere recognition of the fact that cystitis exists is not a diagnosis. A fact is not a diagnosis, and the recognition of cystitis may by contrast with that of its complications be of very minor importance. 5. The diagnosis must comprehend not only the presence of infection in the bladder but, what is more important, it must embrace the source, routes, type and complications and the variety of the inflammatory reaction. Simply uncomplicated inflammation of the bladder is rare. 6. The endoscope and cystoscope can alone open the way to efficient exploration and diagnosis, can alone define the indication for topical or surgical treatment, but, more essential, can alone prepare the way for the examiner to distinguish between cystitis and a wide variety of other urinary affections of the bladder, urethra, ureter and kidney. One is astounded at the revelations of the cystoscope in the recognition of most important lesions which must otherwise have passed unobserved. 7. The washing out of the bladder as a routine measure is not approved. The injection of disinfectants is indicated only in general or nearly general cystitis. For localized cystitis direct applications to the part affected should be made through the endoscope. 8. Dilatation of the urethra is indicated for localized cystitis at or near the neck of the bladder. The efficiency of the procedure for such localized cystitis has given it an undesired recognition in the treatment of general cystitis, which under cystoscopy it can not now retain. 9. The most valuable disinfecting topical application in cystitis is the nitrate of silver.

9. **Surgery of Bladder.**—Fisher reports over a dozen cases of surgery of the bladder, classified according as they were performed by peripheral section with or without guide, or suprapubic cystostomy, or by combination of suprapubic and perineal operation with retrograde catheterization. He sums up his conclusions as follows: 1. The surgeon's duty is not done when he gains an entrance into the bladder, but it should be supplemented by proper after-treatment. 2. A small perineal incision is preferable, but, if large, the excess should be sutured. 3. Without a proper drain, chills, fever and uremia, with closure of cut surfaces will cause a fetal issue. 4. When a proper

drain is employed Nature will usually render cut surfaces impervious to the absorption of urine. 5. As an aid gauze should be packed around the catheter till this is effected. 6. In packing be careful that the compression does not create an adhesive inflammation, uniting the distal end of the urethra and necessitating a second operation. 7. To prevent this cohesion of raw surfaces, begin instrumentation on the third day unless contraindicated. 8. The bladder should be flushed daily with mild antiseptic solutions, and when toxic symptoms develop, the whole tract, often. 9. An impermeable coarctation of the deep urethra, resisting a perineal section, demands a suprapubic cystostomy. 10. In the combined method, the prevesical space should be opened and the bladder incision should be made of but sufficient length to admit the passage of a small sound. 11. When collapse of the bladder prevents immediate suturing, the through-and-through drain should be used for four to eight days, followed by the perineal drain. By this method a fistula is prevented. 12. In obstructive cases operate immediately, thereby preventing destructive changes that militate against recovery. 13. In retention from stricture, if instruments, baths, opium, belladonna, enema and aspirations fail, do not delay operation beyond the third day. 14. After an operation, the urethra should be kept pervious by daily instrumentation, gradually lessening the same to once a month.

11.—See abstract in JOURNAL, May 20, p. 1115.

12. **Appendicitis.**—Crile asks the question whether appendicitis should be treated as a medical disease from the beginning to the end of the attack, and, if not, at what time should surgery share the responsibility? He argues that it should be considered a disease for both medical and surgical treatment from the beginning. Observation should be made at very short intervals, every two or four hours during the development of the disease, so that the opportune moment for surgical interference may not be lost.

14. **Hydrophthalmos.**—Dr. Pyle notices the extraordinary state of confusion in the nomenclature, classification, etiology and treatment of these cases. The proper name is hydrophthalmos, as indicating a general condition, which is present at birth, or appears in early infancy, the beginning being generally prenatal. The diagnostic symptoms are uniformly enlarged and protruding eyeball, insufficient lid action, increased tension, sluggish and dilated pupil, atrophic iris, which appears tremulous if the lens is luxated, peculiar bluish sclera, corneal opacity and anesthesia, deep anterior chambers, restlessness, ill temper, rubbing of the eyes and signs of local pain. While the causes may be various, there is evidence of the following: 1, an intrauterine iridokeratitis, causing closure of the periphery of the anterior chamber; 2, congenital lack of development, either in separation of the iris from the cornea or by a deficiency of the filtration angles in the neighborhood of the iridic angle; 3, a fetal serous cyclitis or uveitis, causing excessive secretion and contraction of the veins of Leber's plexus and obstruction of the spaces of Fontana; 4, vascular disturbances causing arterial over-tension and tropic disorders. He divides these cases into two classes: 1. True hydrophthalmos, depending on congenital defective development of the cornea, iris, or filtration channels. 2. Hydrophthalmos secondary to fetal intraocular inflammation, usually in the form given under the heads 1 and 2 above. The prognosis is better than the text-books give. If a case is early recognized and not relieved by iodids, mercurials, and myotics, repeated paracentesis should be tried. These failing, a broad iridectomy should be performed on the worse eye unless the eyeball is very large, when repeated sclerectomies should be tried. The earlier the operation the better. Late operations are dangerous because of the looseness of the lens, thinness of the membranes and disorganization of the vitreous. Prolapse of the vitreous and intraocular hemorrhage are the chief dangers. The more open the filtration canals, the better the prospects. Myotics should invariably be used as adjuncts to operation. The increase of the anteroposterior diameter in hydrophthalmos produces myopia, and the associate corneal disease is likely to cause irregular curvature. In cases giving evidence of useful near vision, whether operated on or not, correction of the refraction by retinoscopy or ophthalmometry with confirmation by test lenses is strongly advised.

17. **The Crisis in Binocular Vision.**—Barnes insists on the

importance of endeavoring to secure binocular vision in all cases of strabismus, and that this can, contrary to the common notion, be accomplished in a surprisingly large number of cases. To restore or create binocular vision, he would first correct all errors of refraction, which he thinks will continue to have an etiologic relation. He would, then, before resorting to surgery, use every possible means to produce binocular vision by orthoptic exercises. When, however, the patient shows no sign of recognition of double images, surgery should be resorted to, not merely for its cosmetic but also for its economic effect, and he would have as little disturbance as possible, in the operation of the muscular insertion. Finally, he would refine the vision by orthoptic exercises.

22. **Eclampsia.**—Recognizing toxemia as the principal cause of eclampsia, DeLee lays down the course of treatment before, during and after the attack. In case of threatened eclampsia he advises close attention to the renal functions, and when the toxemia seems aggravated, it is well to place the patient on an absolutely milk diet at once. As the condition improves, starch, and gradually proteid vegetables and the vegetable oils and butter, may be added. The return to a meat diet should be when recovery is almost or quite complete, and then it should be white meat and fish, beef, veal, pork and nutton being forbidden as well as stimulants and spices. The emunctories should be kept active. The patient should have an abundance of fresh air and should rest a good part of the day. In severe cases absolute rest in bed and daily hot packs may have to be ordered. When the attack has occurred the indications are to protect the patient from the violence of the convulsions, and to narcotize her with hypodermics of morphin and chloral per rectum if necessary. Chloroform is only advisable when the attacks succeed each other rapidly. As to bleeding, he thinks it has a place in the treatment, but careful discrimination is necessary. To aid elimination, subcutaneous injection of normal salt solution is an excellent method. Its effect on the kidneys is remarkable. If labor has not commenced when the convulsions occur, it should be induced unless it takes place spontaneously, and should be ended as soon as possible. The treatment during the puerperal period is much the same as that advised for threatened cases.

23. **Labor in Pelvic Deformities.**—The conclusions of Dobbin's paper are as follows: 1. In 131 cases of contracted pelvis there was necessity for operative delivery 46 times—35.11 per cent. 2. The pelvis most frequently requiring operation are the rachitic and irregular forms. The generally contracted pelvis, though very common in the negro race, is comparatively rarely sufficiently deformed to seriously obstruct labor. 3. Pelves in which the degree of contraction is slight, and those in which the contraction is very marked, are the easiest for treatment, as in both cases the indications are definite, and should give the operator little trouble in deciding on the treatment to be pursued. 4. On the other hand, the pelves possessing a medium degree of contraction are the most perplexing, and call for the exercise of the greater skill and judgment. When proper appliances are at hand, such cases are best treated by tentative application of forceps, and this failing, immediate Cesarean section. 5. In general, forceps give a lower fetal mortality than version, but version done as a primary operation on a movable head, in a slightly contracted pelvis, is a safer operation for the child than a difficult high forceps operation. 6. Except in very exceptional cases, symphysiotomy is not to be compared with Cesarean section, for the former operation, besides causing greater injury to the mother, is always an uncertain procedure. 7. Operations on contracted pelvis are rarely uncomplicated. Among the commonest accidents may be mentioned premature rupture of the membranes and prolapse of the umbilical cord. 8. The only rational and scientific method of obtaining "corrected morbidity" statistics is by the bacteriologic examination of the uterine lochia, for only in this way can we say definitely which infections are the result of operation.

27. **Two Unusual Cases.**—Rogers describes the case of a boy who, on the disappearance of the eruption in measles, was allowed to go out and sit in the sun for some length of time. This was followed by a condition in which he was unconscious, with Cheyne-Stokes respiration, low temperature, blue and cold skin and complete anesthesia. At times the respiration

became so feeble that artificial methods were apparently required. He was in this condition for four days, then began to take nourishment and on the sixth day sat up some, though still in a confused mental condition. From this time on convalescence was normal, but there was for quite a period a very peculiar alteration of his disposition. From being quiet and orderly he became noisy, troublesome and vulgar, and at one time had a paroxysm of spitting and other erratic symptoms. Three months later, however, he seemed perfectly normal. The second case was that of a young woman who was run away with by a horse, which she finally succeeded in controlling. There was no shock, though she was badly bruised. The peculiar feature of the case, however, was the complete alteration of her vision. She had been wearing glasses for hyperopia and astigmatism, but the day after the accident her vision was apparently perfectly normal and continued so for about a month. At the end of that time, under the strain of school work, she noticed the return of her old trouble, and at the end of two months she resumed her glasses as before. The Doctor makes no attempt to explain the pathology or nature of these cases.

28.—This address was presented before the Iowa State Medical Society.

29. **The Curette in Gynecology.**—The general trend of Tucker's article is opposed to the common use of curettement in gynecologic conditions. He thinks the uterine mucosa can not be compared with other mucous membrane; that its circulation is derived directly from the uterine substance, with which it shares its disorders. Of course, as to new growths, when they require removal, the curette is indicated as well as in certain other special conditions, but he does not find in his own experience the necessity for curettement that he would expect to find from the reports of others, and he says that if he is losing a chance of making an honest dollar he wants to find it out.

30. **Hysterectomy or Myomectomy.**—Mackenzie reports 8 cases, 5 of myomectomy and 3 of complete hysterectomy, and draws the following inferences as to the advantages and disadvantages of the operations: 1. For pedunculated myomata, whether single or multiple, myomectomy should be done in preference to hysterectomy. 2. In cases of uterine fibromyoma, where the tumors are of moderate size and capsulated, not exceeding in size a small orange, whether single or multiple, not exceeding say five in number, enucleation should be done under careful precautions. 3. In moderate-sized, single, interstitial fibromyoma of the uterus, size that of an orange, where the outlines on palpation plainly suggest encapsulation, enucleation should be done even if in enucleating the uterine cavity be exposed, but in all such cases where the size of the tumor and situation suggest that the uterine canal will be involved in the operation, previous curettement and antiseptic treatment of the uterine canal should be a defensive measure. 4. In small, hard tumors of slow growth, enucleation is indicated if operation is done at all. 5. Subserous fibromyomata, sessile, or pedunculated, unless of great size, should be removed by enucleation. 6. Small fibromyomata, whether subserous or interstitial, should be enucleated. 7. In cases where the uterus is infiltrated with small myomata of symmetric size and growth, whether subserous, interstitial or both, enucleation should be done, but careful examination and palpation should be made to determine that all are removed. 8. In all cases of submucous fibromyoma, enucleation should be performed.

Indications for hysterectomy, supravaginal or total, are outlined as follows: 1. Large tumors, tumors weighing say five to eight pounds and upward, unless pedunculated. 2. When the uterus is the seat of disseminated myomatous formations where distribution and arrangement suggest great variations in size and numbers, and when the uterus is large and of rapid growth. 3. When the tumor in uterus is large and of rapid growth. 4. When the tumor is intraligamentous. 5. In all cases where, on account of the situation of the tumor, projection of the growth takes place, impinging on important organs, such as the bladder, rectum, etc. 6. Soft, edematous tumors which are of rapid growth and which tend to cystic degeneration. 7. Menorrhagia co-existent with large tumor of the uterus.

23. **Cannabis Indica.**—Shoemaker points out the thera-

peutic indications and physiologic action of *cannabis indica*. It is an efficient anodyne in functional and organic diseases, and he reports cases of its use in gastralgia, enteralgia, gastric ulcer, endometritis with metrorrhagia, dental neuralgia, headache from tumors, neuritis, zoster, tabes, migraine, in which it has special value, and chorea. He also speaks of its usefulness in some cases of epilepsy, in paresthesias and insomnia. 35.—This article appeared in the JOURNAL of July 15, and is here reprinted without credit.

36. **Protargol.**—Stubbs reports his experience and observations as to the value of protargol, of which he speaks rather highly. He has found it especially useful and effective in diseases of the lachrymal apparatus, and has frequently used it as a collyrium in chronic conjunctival catarrh, in 1 to 3 per cent. solution. Its advantages over nitrate of silver are that it keeps well in solution, is not affected by heat, and does not irritate the mucous membrane. He hopes that it will stand the test of time, but regrets that its manufacture is controlled by a single firm.

39. **Perineal Lacerations.**—This address in obstetrics, before the Medical Society of Pennsylvania by Ball, treats especially of the lacerations of the perineum and their treatment. He insists on the prompt relief of this condition. The laceration of the cervix is also mentioned and its immediate repair is recommended.

40. **Injury of Brain.**—The key-note of Anderson's paper is that the pathology of the symptoms of cerebral compression is anemia of the encephalon. The danger in concussion is from the anemia or engorgement of the pial veins during the stage of reaction. He explains these ideas in detail, and while he does not wish to have it understood that he thinks the whole pathology of cerebral injury consists of pial engorgement, he believes it to be the key to the treatment of intracranial pressure.

41. **Nephrectomy.**—Noble remarks that the common estimate of nephrectomy is that it is a very dangerous operation. This is not according to his experience. He believes that if it is done promptly, under circumstances that require it before the general health of the patient becomes too much broken down, it will be followed by a very low mortality. The object of his paper is to insist on a more careful study of kidney disorders, so that this operation may be done when called for. He reports eight cases where it was performed for tuberculosis, stone, cancer and accidental destruction of the ureter, and he insists on the importance of catheterizing the ureters separately to determine the condition.

44. **The State and Antitoxin.**—Davis believes that the state should supply free antitoxin for the poor suffering from diphtheria, from stations at easily accessible points. It should also see that a strict quarantine is established, that all cases are isolated, and that those coming in contact with them are treated with immunizing antitoxin.

46.—This paper appeared in the JOURNAL of June 17.

48.—See abstract in JOURNAL, May 13, p. 1054.

49.—Ibid, p. 1052.

52, 54, 55 and 56. **Specialism in Medicine.**—Benedict calls attention to the fact that specialism implies a certain superiority in special lines, or a formal promise to acquire such skill by experimenting on patients, or a mere subterfuge to gain practice. The last requires no discussion, the second refers to the fact that occasionally a physician passes into special practice immediately after graduation, and he does not think that he deserves special censure if he does this under the guidance of and in immediate association with an expert, though he will probably go lame through life for lack of knowledge of general medicine. The ideal specialist is not born or made, but grows. In passing from general to special practice there must be a transition period, which he estimates at from two to three years. The specialist should limit his practice rigidly enough, to be fair to himself, his patients and the general profession, but not so much as to refuse relief in case of emergency. He calls attention to certain objections that have been made to the distribution of reprints, which he thinks is a perfectly legitimate and dignified method of presenting one's self before the profession.

Bulky asks the question: How far has specialism benefited the ordinary practice of medicine? and answers that it has advanced the science and art. It has classified diseases more thor-

oughly and simplified nomenclature; obscure conditions have been discovered and elucidated; clearer descriptions of disease have been given in every branch of medicine; treatment has been generally simplified and crystallized, and multitudes of new methods have been introduced, and all these advantages have been open and free to the general practitioner. It has also advanced the ordinary practice of medicine by relieving conditions which the general practitioner could never have accomplished alone, and incidentally has benefited it by a certain education of the public to the pecuniary value of professional services.

Makuen speaks of certain obstructions to the progress of specialism in medicine from lack of ethical considerations on the part of physicians toward each other.

Morris takes up the side against specialism, holding that it is disastrous alike to the medical profession and the public. The system of specialism can not give rise to broad men. It narrows one down to a limited field, and cuts him off from what is around him. It has led to a want of confidence in ability to treat the ordinary diseases. The all-round physician has become too rare. He would like to have a law on the statute books prohibiting any man becoming a specialist until he had spent at least three years in general practice, and then only allow such as had shown special ability or fitness.

58-63. **Medical Advertising.**—Babeock deprecates the tendency to advertise in medicine and points out the direction in which the remedy is to be obtained.

Goldspohn points out the advantage of the ethical rules against advertising on the part of the profession to the laity. That they may better appreciate this, he suggests that all honorable physicians themselves recognize this as an important practical reason for this time-honored rule in our ethics. They should explain to the laity, individually and collectively, the practical meaning of this rule in medical conduct, whenever occasion is presented. There should be more frequent discussions of this general subject in medical societies, so that the practical basis of this feature of medical ethics may become current in the medical mind, and that the public should have come authentic and conveniently accessible register of all physicians who strictly abide by the spirit and letter of our code of ethics in this and all other important points. In the preface to such a directory it should be modestly but plainly stated that this is a list of physicians who depend for employment on a spontaneous recognition by the public of their general qualifications and results in actual practice, and that they should shun commercial advertising in order to enable laymen to recognize and escape the frauds of medical impostors.

McClintock speaks of the method of advertising by reprints, college professorships, and various unethical though rather intangible methods. He thinks that we should have some legitimate way in which the man of ability could make known his qualifications.

The point in Lichty's communication is that medical literature is dominated by advertising methods. Medical periodicals are gradually coming to the level of ordinary newspapers, while medical books are being lowered in standard to the ideas of the publishing companies and the laity.

Havegill believes that there would be no harm in stating on the card the name of the specialty to which practice is limited. As for the cards in daily papers, they are really of little value and only a matter of expense to the physician. He also deprecates the advising of proprietary remedies or those of unknown composition as an evil and lending one's self to the mercenary methods of others.

Stuver concludes his paper with the following: 1. All physicians, from the most eminent to the most obscure, should be accorded equal advertising privileges. 2. Professional advertising should be limited to the insertion of plain cards in the local papers or a sign pointing out the location and office hours of the physician. 3. All local notices in which the name of the physician is mentioned in connection with the treatment of cases or the performance of operations should be absolutely interdicted. 4. The public should be educated to regard active participation in promoting the organization of the medical profession and assisting to build up and strengthen medical sciences as a criterion of greater professional eminence and distinction than merely local notoriety.

85.—See abstract in JOURNAL, August 12, '39, p. 405.

110. **Case of Abdominal Pregnancy.**—Bolton reports a case of a young negro woman who suffered from symptoms interpreted as malaria threatening abortion, when she was apparently four or five months pregnant. These symptoms disappeared under treatment, but her husband came several times afterward for further medicine. Some weeks after her expected period she came to the office somewhat reduced in size but seemed to be in perfect health. She then passed into the hands of a quack and was not again seen until nineteen or twenty months after the first visit, when she was found moribund. Post-mortem revealed a complete skeleton with soft parts entirely putrified.

112. **Nerve Stimulants in Pregnancy.**—Should nerve stimulants be administered to pregnant women is asked by Perkins, and answered in the negative, on the ground that they have a bad effect on the fetus.

113. **Lung Gymnastics.**—Abrams recommends, as methods for forcible lung distension, holding the breath after full inspiration, and also irritation of the skin of the thorax. His experiments have shown that any skin irritation, mechanical, chemical or electrical, will produce dilatation of the lungs, always greatest in the immediate vicinity of the irritation. This lung reflex will prove useful in diagnosis, as resonance can be increased by friction of the skin over the lung percussed.

120. **The American Voice.**—Farlow's paper discusses the assumed prevalence of a nasal twang in the American voice, and he comes to the conclusion that it is merely a bad habit, and not due to climate or racial conditions. The disorders incident to our climate do not specially favor the nasal tone, at least in the adult. (See editorial in JOURNAL, p. 295.)

121. **Hay-Fever.**—After some general remarks as to the nature and causes of hay-fever, Douglass considers the treatment under four heads, viz.: 1. Treatment of the cause *a*, local irritation by pollen, etc., relieved by change of locality to where such irritants are absent, also by respirators, etc.; *b*, vicarious elimination of autotoxic irritants via the nasal mucosa being a possible cause, other organs of excretion must be stimulated into action; *c*, if vasomotor disturbances, shown by blueness, pallor, readiness to take cold, etc., are a cause, cold baths, spongings, spinal douches, and regulation of the circulation by small doses of quinin and digitalis are indicated; *d*, neurasthenic conditions are to be combated by exercise, rest, change of occupation, tonics, etc., and if the uric acid diathesis exists, proper eliminative treatment must be adopted. 2. Treatment of the attack, *a*, local, by cleansing away the irritants, relieving the hypersensitiveness of the overirritated nerves. For the first of these warm nasal douches of weak saline solution, after gentle spraying with a watery 1 per cent. cocaine solution. After this, treatment with a 4 to 6 per cent. cocaine solution cautiously applied, followed later if necessary by mild cautery with silver nitrate, phenol canphor, or preferably Clark's solution, composed of mercury bichlorid, 1 gr., quinin hydrochlorid 1 dram, glycerole of carbolic acid (B.P.), 1 oz. For home use milder applications of menthol, etc., may be used. For the general treatment he recommends acetanilid, digitalis and quinin, the first used cautiously, the other in full doses to tone up the vessels and relieve the constitutional symptoms. The internal administration of dried suprarenal glands is also very highly recommended by Douglass. He believes it almost specific. He also uses the remedy locally in solution as a spray, but trusts more to its internal administration. Between the attacks, the existing nasal lesions should be treated and all pathologic conditions relieved.

123. **The Therapeutic Value of Oxygen.**—Conklin insists on the therapeutic value of oxygen inhalations, claiming that facts show that when it is needed by the blood it is thus readily absorbed. He has used it in a variety of conditions accompanied with dyspnea, bronchopneumonia, acute lobar pneumonia, and advanced valvular cardiac disease—with great advantage.

124. **Intramuscular Injections of Mercury.**—After reporting a case in detail treated by intramuscular injection of salicylate of mercury and of calomel, with success, Stinson describes his method as follows: 1. Sterilize by boiling four ounces of oil of sweet almonds, which is kept in a sealed ster-

lized bottle. 2. Use pure salicylate of mercury that has been put up in a sealed half-ounce bottle and prepared by some reliable firm—e. g., Merck. 3. Weigh out accurately the amount to be used for one injection on a clean paper. 4. Put the powder in an aseptic small mortar and pour in about half a dram of the sterilized oil; triturate well. 5. Place the patient flat on his stomach, legs extended; disinfect area of injection with 1-to-500 bichlorid of mercury solution. 6. Sterilize the needle (two inches long) by syringing with alcohol and bichlorid solutions or by boiling or some other method. If bichlorid is used, wipe the needle off at once with dry cotton, which removes the bichlorid, prevents tarnishing, and, in fact, makes the surface of the needle shine better than before. 7. Draw the fluid into the syringe, stirring while doing so with the end of the syringe; fit or screw on the needle and force the fluid along the needle till it appears at the point, which is wiped dry with cotton. 8. Plunge the needle vertically into the tissues the full two inches of the needle, introducing the point about a quarter to half an inch above the junction of the inner and middle thirds of a line carried from the upper border of the great trochanter to meet the cleft of the buttock at right angles. 9. Inject the oil slowly, and when the syringe is empty withdraw the needle slowly. This prevents any of the fluid being deposited in the fatty tissues, which is a source of some pain. Dust on a little aristol or other mild antiseptic and pour on a few drops of collodion, which is allowed to dry. I have often used, and have frequently seen, intramuscular injections of the salicylate of mercury used, in the treatment of syphilis, and have yet to see the first case wherein an abscess formed. Absorption of mercury begins very soon after the injection, as shown by the symptoms and by testing the urine for mercury, which does not disappear from this excretion for four or seven days if two grains have been injected. Subsequent doses are repeated about twice a week so as to obtain a thorough systemic effect. By this means mercury is continuously in the system.

Points in Technique, etc.—In tertiary syphilis, as in other stages, a thorough course of treatment should be followed if one wishes to cure. Four series of injections should be given each year for three years or longer. If the salicylate of mercury is used, and two grains can be tolerated at each injection, two injections should be given a week, and this treatment continued for about five weeks—i. e., till nine or ten injections are given. Forty per cent. of patients take two grains without any inconvenience. Forty per cent. more can not stand two grains, as it produces too many movements of the bowels, quite painful colic, sometimes considerable pain in and around the region of the buttock, and exceptionally a few bloody stools. These patients can be given about a grain and a third of the salicylate at an injection with little discomfort, which is therefore given three times a week; while the remainder, about 20 per cent.—hyperesthetic individuals—will not take intramuscular injections of two grains, as they cause pains and lameness, on account of which they will not submit to them. Between the series of injections ten minims of saturated solution of potassium iodid in water should be given three times daily. If there are urgent symptoms, increase two minims daily until coryza and a few other symptoms of iodism appear, when the original dose may be resumed.

By using injections the functions of the digestive tract, the skin and liver, etc., are not interfered with. The doses are certain of absorption and can be regularly regulated according to the susceptibility of the individual; with aseptic and antiseptic precautions the treatment is perfectly safe and the resulting improvement is certain and rapid. Under ordinary conditions the practice of adding morphia or cocaine or both to an injection, is not necessary, and should be condemned. In cases of syphilis with dyspnea, cocaine can be added with advantage, as it rapidly overcomes this distressed condition. I know of a case with marked cardiac dyspnea (in the practice of my colleague, Dr. G. Gross), in which cocaine was added to an injection. The dyspnea ceased immediately, and it was not necessary to repeat the cocaine subsequently.

It is of vast importance before beginning intramuscular injections to ascertain that the teeth are in excellent condition and that the kidneys are not diseased. Patients with nephritis should not receive large doses of mercury by injection, as even

small doses are not well tolerated. In all cases the urine should be examined once in a while during the course of treatment.

126. **The Effects of Training.**—Darling's article is not concluded in this issue but will be noticed when completed.

127. **Joint and Bone Fixation.**—The chief point in this paper is the use of "splint-blanks" or pieces of wood-liner splint material reinforced with gauze, cut in such fashion from a paper pattern that when moistened it can be molded over the limb or fracture and bandaged, thus producing fixation of the part. The author gives details for the application of these "splint-blanks" to each joint or region and points out their advantages. They allow of ready inspection, are quickly and easily applied, and light and comfortable and reliably fixative.

132. **Medicine.**—Spiers deprecates the lack of literary culture in some medical writers; the too ready assumption of the effects on medicines on man from those animals; the dropping of old tried remedies to take up new ones, etc.

133. **Typhoid Pneumonia.**—Smith's paper is an argument against the use of the term "typhoid pneumonia." His conclusions are as follows: In view of the fact, 1, that the majority of pneumonias occurring in the course of typhoid fever are not caused by Eberth's bacillus, but by the pneumococcus, and 2, that asthenic pneumonias with so-called typhoid symptoms have nothing in common, so far as etiology is concerned, with typhoid fever, it would seem advisable, with our present knowledge, to discard the term "typhoid-pneumonia" asavoring too much of inaccuracy, especially as we are reminded by it of the wholly indefensible term "typho-malaria." For these rare cases in which it can be proved beyond doubt that the pneumonic process as well as the general typhoid infection are both due to the bacillus of Eberth we still have the term "pneumo-typhoid," the use of which, however, should be subject to these strict limitations. Accuracy in terminology is the first step toward a reasonable therapy, and the ill results of calling conditions by wrong names must inevitably lead to a less clear-sighted management of them.

134. **Ethyl Bromid.**—Kempter advocates a more general use of ethyl bromid in minor surgery, claiming that its dangers have been overestimated, and its convenience and advantages not duly appreciated.

135. **Psychotherapy.**—The condition of mental impressibility affecting the bodily states is noticed at some length by Seelye, who reports at more or less length seven cases where mental suggestion produced striking effects and cures. He thinks that it is not necessary after detailing these to strengthen his cause by referring to other ailments, such as headache, insomnia, neuralgia, etc., that may be similarly relieved by this means as an adjunct to drugs and other recognized therapeutic methods. While cases where suggestion alone is sufficient from beginning to end are comparatively rare, it can, nevertheless, be advantageously employed to some extent in almost every case.

136. **The Etiology of Scarlet Fever.**—This is practically the same article as published in *Medicine*, June, 1899. (See *JOURNAL*, April 8, p. 765, and June 24, p. 1432.)

137. **Carbolic Acid in Mastoid Wounds and Ear Diseases.**—After noticing that Dr. S. D. Powell has reported the use of pure carbolic acid followed by alcohol in surgery, and that Dr. Roosa has also employed it, Phillips reports six cases in which he himself used it in this manner with good advantage. He has prepared the carbolic acid by simply adding enough water to the crystals to hold them in solution, and later he has used this in a very finely drained spraying-tube which can be introduced into the aural canal and spray the acid into the attic and middle ear. It well to avoid any excess of carbolic acid, so as not to have to use too much alcohol. Up to this time he has observed no ill effects, no inflammatory reaction, and no extension of disease from its use.

138. **International Scientific Language.**—Ellis discusses the subject of an international language for scientific purposes, and asks whether it is a possibility. National feeling and jealousy have hitherto prevented the use of any one of the leading modern tongues, and this will probably be the case hereafter. As regards dead languages, and especially Greek, which has been so strongly recommended, he refers to the difficulties of

learning a tongue of this kind, and points out that it would give the advantage to mere linguists while men of real scientific merit would be precluded from publishing their results. He believes that the old way will have to be followed, but the time will come when by some arrangement, a translation of every paper presented at the international meetings can be provided for.

144. Difficult Points in Gynecologic Diagnosis.—After alluding to the difficulties of gynecologic examinations in many cases, Krusen discusses the subject of the diagnosis of uterine carcinoma, and to aid, suggests the following points which will be found useful though they may not be applicable to every case:

1. The usual friability and vascularity of the tissue, which, if not detected by the finger, may easily be made apparent by hooking a tenaculum into the suspected area. The tenaculum will immediately tear out and cause abundant bleeding from the carcinomatous tissue.

2. A close adhesion of the mucous membrane of the portio to the parenchyma.

3. The difficulty in cervical dilatation as evidenced by the introduction of a tent. In a cancerous process there is, as a rule, a continuance of the hardness after dilatation.

4. Bleeding is easily provoked by an examination or by any unusual exertion or manipulation.

5. The characteristic induration of the cervix is almost imperceptible at first, but increases as the disease progresses.

6. Puncture of any suspected nodules or follicles will differentiate carcinoma from cystic follicles or distended glands.

7. Ulcerated or eroded areas which are not speedily amenable to treatment should be regarded with suspicion.

8. Any enlargement of the uterus occurring after the menopause, is usually due to malignant disease. (Fisher.)

9. An early diagnosis can only be made with absolute certainty by microscopic examination of either an excised wedge from the suspected cervix, or, in cancer of the body, of portions of the endometrium removed by curettage. The value of the examination will depend upon the experience and competency of the pathologist.

Epithelioma is less frequent but it is liable to be confused with: 1, simple vegetations; 2, lupus of the vulva; 3, syphilitic affections; but the first, the simple vegetations, secrete a virulent fluid unlike the ichor of cancer, they readily yield to an energetic caustic which prevents their reproduction, and they have no hardened base, being remarkable for their softness. In the case of lupus, the vulva is red and presents scattered fungous ulcerations which are without any indurated base; while the syphilitic chancre is more limited and has a little circle of characteristic indurations. Other points of difficult diagnosis referred to are ectopic pregnancy, the differentiation of appendicitis from pyosalpinx or ovarian disease; ovarian cysts from ascites, and the perplexing problems of pregnancy complicated with typhoid.

145. Rupture of the Intestines.—The first part of this paper is largely a review of opinions of this accident and a brief analysis of the symptoms in some 70 cases observed since 1893. As regards the technic of the operation when it is required, the following points are specified:

1. To cut down over the point of impact of the force, and then gently lift the loops of intestine going toward the spine, Fovrier and Adam having shown that the laceration will be found in this situation; 2, after finding one tear to search for others, avoiding, however, evisceration; 3, to regard any discolored spots with great suspicion and treat them as ruptures. Seven cases are briefly stated.

146. Symptomatic Treatment of Consumption.—The treatment of pulmonary tuberculosis, according to Lyle, is hygienic and dietetic and whatever we may do for the disease in other directions must not compromise our efforts in this line. For the toxemia of the early stage, creosote alone has the confidence of the profession. It has no effect on the tubercle bacillus but seems to diminish its toxins and probably has some effect on the associated germs. It also stimulates the metabolism. Sunlight, fresh air and nutritious food are the next essentials and on the functional ability of the stomach our efforts will largely depend, hence, the necessity of attention to the condition of this organ. A urine analysis should be made

occasionally to show the condition of the assimilative functions, decrease of urea being a warning symptom. Lyle thinks that cod-liver oil and alcohol are over used. He believes in the local treatment of the cough, intratracheal injection if necessary. In the advanced stages, opium may be required, but bromids may often enable us to dispense with it if the cough is purely nervous. The night sweats he considers as conservative and their treatment is seldom necessary. Fever is the result mainly of sepsis. Rest and the open-air treatment must be principally relied upon to combat it though quinin may be useful sometimes. Latterly he has used hypodermic injections of 10 to 30 minims of guaiacol to modify the fever, with good results. Hemorrhage in the early stages is usually salutary and requires no special treatment other than increased nutrition. The later hemorrhages due to rupture of large vessels should be treated by enabling a thrombus to form in the artery. The patient should be placed in a reclining position with plenty of fresh air, and if the bleeding is persistent, the chest movements may be limited by adhesive strips and the return flow of blood from the lower extremities withheld by constricting the thighs. Ice bags, he thinks, are likely to be harmful.

147. Intrauterine Epidemic Cerebrospinal Meningitis.—Gradwohl reports a case of a woman who died of cerebrospinal meningitis in the seventh or eighth month of pregnancy. The brain of the fetus presented the same appearance as the maternal brain and contained the characteristic bacilli. The only reported case bearing any resemblance to this that he is aware of is one of Herwerden of a sporadic meningitis due to pneumococcus.

FOREIGN.

British Medical Journal, August 19.

Ununited Fracture in Childhood. EDMUND OWEN.—Owen's presidential address raises certain questions as to the causes of lack of union in fractured bones in childhood, and as far as he can answer it, it is by the influence of trophic nerves. He suggests that there is a subtle disturbance of the anterior horn of the cord inhibiting nutrition of the bone, rendering it weak and friable and hindering its repair.

Discussion on Pleuritic Effusion in Childhood.—Robert McGuire discusses the pathology, treatment, etc., of pleurisy and pleuritic exudates in children, and Betham Robinson treats of it in its surgical aspects. He discusses whether free incision and drainage are of any value in tuberculosis of the pleura, where we should make the incision, and should we resect the ribs or not in empyema, and lastly, should we use irrigation? He always resects the ribs, as it adds no risk to the operation, and as regards irrigation, he thinks its value counterbalances its attendant risk in cases of septic collections in the pleura. In the discussion that follows, Tubby considers irrigation a very dangerous proceeding.

Observations on Morbid Anatomy of Tuberculosis in Childhood, with Special Reference to Its Primary Channels of Infection. GEORGE F. STILL.—The morbid anatomy of tuberculosis in childhood, and especially the methods of its infection, are discussed at some length by Dr. Still. He concludes that the commonest channel of infection is through the lungs. That by way of the intestines is less common in infancy than in later childhood. Milk is, therefore, not the usual source of tuberculosis in infancy, and he suggests that this is due to precautions taken in boiling, sterilizing, care-taking, etc. Inhalation is much the commonest mode and the overcrowding of the poor population in the large towns is probably responsible for much of the tuberculosis of childhood. Prophylaxis must be directed to the prevention of this overcrowding, improvement of ventilation, etc.

Discussion on Convulsions in Infancy. A. M. GOSSAGE AND J. A. COUTTS.—The authors lay most stress in the causal factors of convulsions in childhood on a neurotic predisposition, and local irritation of the digestive tract and elsewhere is probably less effective than supposed without this predisposition. They conclude that the frequency of convulsions in infants has been greatly overrated, that the immediate danger of fits has been overrated, while that as regards future neurotic manifestations has been underestimated. The predisposing causes are of more importance than the exciting causes.

Hugh R. Jones believes that convulsions must be regarded as causally related to digestive disorders or other organic disease,

and indirectly, also, to social conditions tending to produce disease. It is important to reduce the complexity of medical statistics, which are more than usually intricate, because they very frequently involve more than one factor. It is desirable to reduce to a minimum the obstacles which tend to prevent the recognition of the ultimate origin of disease, for progress in the improvement of public health is retarded through want of accurate knowledge.

Causation of Night Terrors. E. GRAHAM LITTLE.—After discussing the theory of these disorders, Little analyzes some thirty cases that he has observed and offers the following deductions: 1. Night terrors are in the great majority of cases caused by disorders productive of moderate but prolonged dyspnea. 2. A preponderating number of cases are found in rheumatic subjects with early heart disease. 3. A considerable proportion of cases are due to obstruction of nasal cavities and fauces. 4. Digestive disturbances do not play the important part in causation that is often assigned to them. 5. The evidence of their causal connection with epilepsy or allied neuroses is scanty. 6. The attacks occur in the subconscious stage of early sleep, and are confined to young children under puberty.

Lancet, August 10.

Albuminuric Retinitis. SAMUEL WEST.—The author divides albuminuric retinitis into two types, the exudative and the degenerative forms. The first of these is similar to what is met with in other forms of neuroretinitis. The degenerative form consists in white patches and hemorrhages, the former being the most characteristic. This degenerative form is associated with granular kidney, the exudative especially with parenchymatous nephritis. The exudative is probably toxic in its origin, the degenerative follows vascular changes and is more or less mechanical. The exudative may recover with little impairment of sight. In the other, however, if there is any impairment of sight it is usually progressive. As to their diagnostic value, the exudative form is an interesting accompaniment of parenchymatous nephritis, otherwise manifest, while the degenerative often makes the diagnosis certain in cases which have hitherto been obscure, while both indicate a grave form of renal disease. The degenerative type also indicates the dangers due to arterial disease.

Journal des Sciences Médicales de Lille, August 15.

Subconjunctival Injections of Atropin. L. THILLIEZ.—By this method minute amounts produce the desired effect and cure even when all other measures have failed, as is evidenced again by a number of observations reported in this communication: ulceration and phlyctenular keratitis, acute and painful iritis, etc. Two drops of a 1/200 solution injected under the conjunctiva proved promptly effective without causing any phenomena in the other eye, not even the slightest paresis of accommodation. Subconjunctival injections are usually reserved for mercurial salts, etc., but this method is indicated in all cases in which the conjunctive absorbs defectively, or not at all, also, in cases requiring prompt action or in which the action of other medication requires to be reinforced or completed.

Presse Médicale (Paris), August 9.

Mobility of the Pelvic Articulations and Influence of Posture on the Size of the Pelvis. E. BONNAIRE AND V. BUÉ.—The attitudes instinctively assumed by the parturient woman modify the dimensions of the pelvis, and Bonnaire and Bué have established that an exaggeration of the natural attitudes has a decided influence in favoring delivery, enlarging the diameters of the inlet and outlet, assisted by the relaxation of the pelvic symphyses induced by the pregnancy. The play of the various pelvic articulations in the different positions is described in detail as they observed it on 500 maternity patients examined, and the practical conclusions are drawn that hyperextension of the entire body, the trunk braced against a resisting plane at the sacral region, enlarges the inlet by 3 mm. in the sagittal direction, as the sacrum is thrown back and the pubis lowered. The attitude produced by rolling up the pelvic members on the trunk, the knees opposite the shoulders, avoiding both abduction and adduction—the perineal incision position—reduces the diameter of the inlet but enlarges the bi-ischial diameter of the outlet to an average of 16 to 18 mm. The hyperextension position is indicated to favor the spontaneous engagement of the head in the various

forms of rachitic malformation of the pelvis. Sufficient enlargement can not be counted on, however, unless first assured of a marked relaxation of the pelvic articulations, appreciable by the degree of mobility of the two pubes on each other. Hyperextension is also indicated to effect the engagement of the head with the aid of forceps, or to extract the back of the head retained by the small inlet, but this attitude hinders obstetric maneuvers to such an extent as to counterbalance the advantages derived from the slight enlargement, in most cases. It is impossible also to determine in this position in the usual way the minimum promonto-pubic diameter as the proportions are altered. The perineal incision position is much more profitable; it favors obstetric interventions by exposing the field of operation to the accoucheur, but is less frequently indicated than hyperextension. It will be found especially beneficial in cases with narrow inlet—cyphot pelvic—or when the head is locked in frontal presentation in the small pelvis and must be extracted with forceps, or when the head has been extracted, but the shoulders are caught on the floor of the pelvis owing to the size of the trunk.

Deutsche Medicinische Wochenschrift (Berlin), August 17.

Fatal Acute Dilatation of the Stomach. R. KIRCH.—A young man, rather anemic, but who had never suffered from gastric disturbances, was suddenly affected with syndrome resembling the symptoms of perforation of an abdominal organ; intense pain, vomiting and large fluctuating area of dullness but no fever. A splashing sound when the patient was shaken confirmed the diagnosis of dilatation of the stomach, and emptying and rinsing the stomach cleared up the symptoms at once, but too late to relieve the compromised heart action. At the autopsy the stomach was found like an enormous bag resting on the floor of the pelvis, the pyloric end reaching up to join the duodenum, and the pylorus permeable for two fingers. The stomach was normal except for its size and the evidence of gastritis that had followed the fatal supper of two plates of "brodsuppe" and a glass of beer. In the course of the gastritis the stomach had suddenly renounced its motor functions and all absorption by the mucous membrane had ceased, inducing intense thirst, while the quantities of water ingested and not absorbed only served to increase the dilatation further.

Deutsche Zeitschrift f. Chirurgie, I, 1 and 2.

Cancer of the Lip. FRICKE.—An experience with 137 cases, at Bonn, has convinced Fricke that neither tobacco nor alcohol is a factor in the pathogenesis of cancer of the lip, but that vices prompt extirpation of any warty excrescence on either lip, is twelve times, and of the upper lip three times, more frequent in men than in women. Invasion of the jawbone may occur within three months of the first appearance of the neoplasm, and, with or without ganglion metastases, renders the prognosis very grave. The only treatment is early removal, and he advises prompt extirpation of any warty excrescence on either lip. Nine of the patients died; there has been recurrence in forty-one; the rest are all well to date, in most cases over three years. He advocates removing the ganglia before touching the primary neoplasm, and rejects extensive resections of the jaw as dangerous and useless. All the deaths occurred in patients thus treated.

Wiener Klinische Wochenschrift, July 20.

Clinical Pathology of the Peripheral Nervous System in Pulmonary Tuberculosis. R. SCHMIDT.—This communication, concluded from the two preceding numbers, describes the valuable information to be derived from certain nervous symptoms in the early diagnosis of tuberculosis, at a period when other indications are negative or conflicting. These disturbances in the peripheral nervous system are either the result of local, chiefly mechanical, seldom toxic, action of the tuberculous process in the lung on the adjacent nerve routes—the brachial plexus, recurrent and intercostal nerves, etc.—or the result of the generalized action of toxic and especially dyscrasic injurious influences. Among the former the most important are the phenomenon of unilateral pain on pressure of the brachial plexus, and the frequently associated homolateral acroparesthesia, usually located in the ulnar region, which have a special diagnostic significance in the early stages of pulmonary tuberculosis and initial hemoptysis. Tuberculosis must be considered as a possible factor, direct or indirect, in all the various causes of

acroparesthesia, especially in the young. Symptomatic acroparesthesia in phthisic subjects is distinguished from the acroparesthesia due to organic or functional lesions of the nervous system proper, by its frequency in male subjects; its frequent coincidence with acute catarrhal pulmonary processes—influenza bronchitis—its limitation to one side; its parallelism with typical tuberculous symptoms, night sweats, evening fever, etc., and the frequent coexistence of unilateral and homolateral pain when the brachial plexus is compressed. In the 162 cases of acroparesthesia on record, due more or less totally to vasomotor, trophic, gastric, etc., disturbances, there are only twelve males and no cases under 20 years of age: almost all were women about 40. Schmidt considers the statements of tuberculous subjects in regard to their symptoms seldom reliable, and hence does not attract attention to his brachial examination nor inquire whether pain follows compression. The expression of the face is usually sufficient indication and the shrinking from a repetition of the pressure which he controls several times, standing in front of the subject, laying his right hand in his left and applying the latter to the right supraclavicular fossa with the finger tips on the upper margin of the trapezius muscle, sliding them along perpendicularly to the direction of the plexus. Darting pains into the fingers and neck are occasionally encountered, which possibly suggests circumscribed perineuritic alterations in the plexus. Bilateral pain possibly indicates general intoxication from mixed infection. The left side, in his experience, was a little more frequently affected than the right. If the plexus test is positive, inquiry will usually elicit anamnestic data in respect to the acroparesthesia.

Zeitschrift f. Orthopädische Chirurgie (Stuttgart), vii, 1.

Tendon Implantation. H. GOCHT.—Nineteen observations are described in detail from Hoffa's private clinic, emphasizing the value and benefits to be derived from implanting the tendon of an active muscle in the tendon of a paralyzed muscle, restoring the function and neutralizing the paralysis or deformity. (See JOURNAL, xxxii, p. 1109, May 20, 1899.) One of the cases was a traumatic typical radial paralysis of the right hand, of four years' standing, in a child of 12. Narcosis followed 25 grams of chloroform. The operation required forty minutes. After expelling the blood with an Esmarch, the tendon of the extensor carpi radialis longus was exposed with a 5 cm. incision. The hand and forearm were then placed on the radial side and an incision carried from the processus styloideus ulnae upward to the ulna, and the tendon of the flexor carpi ulnaris isolated and detached by slipping a sound under it. Then returning to the extensor carpi radialis, the tendon was cut between clamps and with the hand in extreme dorsal flexion, the stumps of the tendon were pushed up 2.5 cm. on each other and sutured with six fine silk stitches. The crushed ends were cut off and sutured with six fine stitches. The hand had now assumed the radial elastic dorsal flexed position. After closing the skin wound, the tendon of the flexor carpi ulnaris was detached from the os pisiformis, taken up with a silk thread and passed through the tendon of the extensor carpi radialis longus, the skin pulled as far as possible toward the radialis to expose the tendon of the extensor digitorum communis. At the point where it spreads out into a fan, the well-pulped central end of the flexor carpi ulnaris was inserted in it, bringing the fingers into a passive hyperstretched position. The cutaneous incision was then closed, and after wrapping the arm in a sterile compress and a little padding, a circular plaster cast was applied, reaching to the elbow, and holding hand and fingers in a hyperstretched, radially flexed position. A plaster splint was also applied extending beyond the fingers on the side of the flexion, and a metal ring, cast in the plaster on the upper radial side, held the thumb with a rubber band passing through this ring and around the abducted thumb, well stretched. The cast and stitches were removed in ten days and another similar cast applied. Two weeks later this was changed for a volar plaster splint reaching from the elbow to the finger tips, and holding the hand stretched and in slight radial flexion. After three days this splint was removed twice a day for massage, electrization and passive and active exercises of fingers and hand. At the end of the tenth week the patient was writing and taking zither lessons, with normal conditions restored in every respect. Gocht observes that the

results in this one case alone would insure a dominant place for tendon implantation in the treatment of paralytic deformities. The technic above described is identical with that of another case of deformity from spinal paralysis in a child of 7, equally successful in its results.

Societies.

COMING MEETINGS.

- American Association of Military Surgeons of the United States, Kansas City, Mo., September 27-29.
- American Association of Obstetricians and Gynecologists, Indianapolis, Ind., September 19-21.
- American Electro-Therapeutic Association, Washington, D. C., September 19.
- Medical Society of the State of Pennsylvania, Wilkesbarre, September 18-20.
- Medical Society of the Missouri Valley, Council Bluffs, Iowa, September 21.

Nova Scotia Medical Society.—The election of officers of this Society, at its last meeting, resulted as follows: President, D. McIntosh, Pugwash; First Vice-President, C. A. Webster, Yarmouth; Second Vice-President, F. S. Yerston, Truro; Secretary-Treasurer, W. S. Muir, Truro.

New Brunswick Medical Society.—The following is the roll of officers of this Society, elected for the ensuing year: President, William Bayard, St. John; Vice-President, R. L. Botsford; Second Vice-President, T. F. Sprague, Woodstock; Treasurer, Foster MacFarlane; Corresponding Secretary, B. M. Mullin, St. Mary's; Recording Secretary, W. E. Ellis, St. John.

Maritime Medical Association.—At the last meeting of this Association, the following officers were elected for the term of 1899-1900: President, James Christie, St. John, N. B.; Vice-President for Nova Scotia, N. E. McKay, Halifax; Vice-President for New Brunswick, Geo. A. Hetherington, St. John; Vice-President for Prince Edward Island, H. D. Johnson, Charlottetown; Secretary, G. M. Campbell, Halifax; Treasurer, T. D. Walker, St. John.

British Medical Association.

Annual Meeting, Portsmouth, Eng., August, 1899.

(Concluded from Page 606.)

RECENT ADVANCES IN PRACTICAL MEDICINE.

SIR RICHARD DOUGLAS POWELL, Bart., M.D., F.R.C.P., presented the address in medicine, on this topic. He briefly considered the clinical thermometer, anomalous fevers, and the combination of surgery with medicine.

Bacteriology.—He pointed out that bacteriology in its application to diagnosis and treatment in practical medicine is yet in its infancy; but it is a very robust infancy, full of promise, the complete fulfillment of which none of us will live to see. The bacterial origin of tubercle, anthrax, diphtheria, erysipelas, septicemia, typhoid, malaria, influenza, has been revealed to us almost within the memory of the youngest, yet has already been, in many instances, fruitful in suggesting measures of prevention and treatment. Bacteriology, in all its departments, is and must ever remain subject to expert investigation. It is impossible for the busy practitioner to find the time or to maintain the technical skill and apparatus necessary for trustworthy investigation. The various research associations have hitherto in part fulfilled the want and the bacteriologic departments of our hospitals are steadily growing in importance and value; but it is to be hoped that the time will soon come when in every district throughout the country there will be in connection with the public health department a bacteriologic laboratory, where the ordinary, and even the extraordinary, clinical tests will be at the command of every practitioner at a moderate scale of fees.

Susceptibility and Immunity.—It has long been clear to every observant physician who has on the one hand even superficially kept in view the results of bacteriologic inquiry and who has thought on the incidences of such infective diseases as he happens to meet, that we carry about with us in our accessible mucous tracts, and especially in our naso-oral and respiratory passages, amidst other unconsidered trifles and as yet

unclassified germs, samples of the organisms specific to many diseases. We are tenanted by these varied organisms in small colonies or singly, rendered inert only through want of opportunity. The very careful observations of Drs. St. Clair Thomson and Hewlett, recorded in the "Medico-Chirurgical Transactions for 1895, show that there is a natural cleansing if not antiseptic secretion from the healthy nasal membrane which preserves it from contamination by the numerous organisms which abound in the nasal avenues, so that mucus taken from the central membrane of the nose in health contains few or no organisms. Other bacteria surround us on all sides, and from time to time obtain a temporary but abortive lodgment within us; virulent catarrh, diphtheria, pneumonia, influenza, tuberculosis, erysipelas, perhaps rheumatism, and probably in epidemic times most of the other infective diseases would be represented in one or other category among our domesticated or casual occupants. It is not, however, enough to have the poison germ on the one hand to acquire the disease on the other: there are intermediate or antecedent circumstances of dosage, acquired susceptibility or that subtle malformation of tissue in certain organs which is inherited, and renders them weak in resistance to certain forms of attack. Let a period of depression come over us, involving some slight change in our blood or tissues, some local or general alteration in our chemical or vital functions, and one or other of these organisms may receive the opportunity for aggressive cultivation. We virtually know that this is so in the case of a common cold. Acquired by a momentary chill at an open door, or through wet boots, such a catarrh becomes at once a highly contagious disease, and will "run through the house." There can be no doubt that the catarrh is associated with the cultivation of an organism; it is equally probable that that organism must have pre-existed in some part of the nasal surface. Does some vasomotor disturbance bring about the local conditions of increased heat and moisture needful for that particular form of microbe cultivation, or is it merely depressed vitality that makes the host susceptible? No one, so far as I am aware, has yet descended to work out the bacteriology of a common cold. Yet it is the type of a large number of more important diseases, and carefully investigated it would be fruitful in side-lights on their etiology and prophylactic treatment.

Serumtherapy.—It is already an immense achievement if we have acquired the knowledge that every infection requires a separately-prepared serum for its treatment. It explains many of our failures, and gives promise of adding to our successes. It has for some time been recognized that infective endocarditis has a manifold microbial pathology—streptococcus, staphylococcus, pneumococcus, gonococcus, are some of the organisms concerned. It is useless to employ an antistreptococcus serum for a pneumococcus infection, and even the two organisms, streptococcus and staphylococcus, which seem to work most cordially in couples, require a separate treatment. This in part accounted for the very poor success as yet achieved by the serum treatment of this and of some other maladies more or less allied to it. From the clinical side one would judge that very frequently more than one poison was in association. This is certainly the case in many diseases, for example, in the third and often in the first stage of enteric fever, in the suppurative stages of tuberculosis, in scarlatina, and perhaps in gonorrhoeal rheumatism. In pneumonia again it is remarkable that in every variety of the disease, the sthenic, the asthenic, the typhnoidal, the septic pneumonia, and the influenza catarrhal forms, the characteristic pneumococcus is invariably to be found, and this coccus may be the micro-organism conspicuously present in those secondary lesions with which pneumonia is often complicated, and which are attributed to it, such as empyema, infective endocarditis, etc. Yet there are good reasons to doubt whether the pneumococcus organism alone, unassisted by some of its pyrogenic *confreres*, is ever able to bring about these secondary lesions which are usually attributed to it. We must push our diagnosis further, to include a recognition of the precise organism or organisms which have obtained lodgment in any given case. Unfortunately, in the earlier stages at least of ulcerative endocarditis, bacteriologic investigation is by no means always successful in identifying the organisms or, indeed, in recognizing any organism, for with well-marked clinical features the specimen of blood exam-

ined must be sterile. We may yet for some time to come, therefore, as in complex cases of enteric fever, with which these cases are often confounded, have to rely on the general clinical phenomena presented by the case and its history of attack in our attempt to identify the poison and in our endeavor to select the antidote. We are indeed only at the dawn of serumtherapeutics, and many mistakes will have to be retrieved, many apparent steps forward retraced, in the sure but slow advance in this new departure of therapeutics.

Whilst the possibility of neutralizing by appropriate treatment, the specific poison in certain diseases, will relieve the practitioners of some anxiety, it can not fall on the other hand to add much to the tension of their labors by requiring an earlier diagnosis, and by the great care needed to avoid accidents in the use of delicate organic fluids prone to contamination and decomposition. It is impossible that the treatment can be much developed in general use until abundant local centers are secured for the provision of materials of guaranteed purity.

It is curious and instructive to note that in the two diseases in which antitoxins are of most approved value, namely, diphtheria, and tetanus, the bacillary cultivation is declared (Behring) to be limited to the seat of inoculation, the blood only being charged with their toxins. Whereas the mortality from diphtheria but a few years ago varied from 25 to 50 per cent., according to the severity of the epidemic, it has been reduced by the serum treatment to from 25 per cent to 8 per cent., according to the severity of the case and the date of infection.

Concerning serumtherapy in pneumonia, he said, in part: Unfortunately, we have not yet been supplied with any reliable antidote for the serum treatment of pneumonia, and to-day, although Pane's antipneumococcus serum will protect a donkey or a rabbit from the evil consequences of a strong dose of pneumococcus infection, it has not as yet come into practical use in the human disease. I have recently tried it in two cases without result. This may be due to three causes: 1. It is difficult to use the serum early enough in the disease. 2. The most severe cases in which alone at present one feels disposed to try the remedy are most generally complicated with some other infection, so that the pneumococcus in the sputum does not signify the sole—perhaps not the most important—element of danger in the case. 3. The doses employed by Dr. Pane have been very large, so large that one shrinks from introducing in such bulk an unknown or imperfectly accredited element into any case not already desperate. In the use of these very large doses, my friend Dr. Charles of Rome has suggested to me the introduction of the serum *per rectum* as a method which he has known to prove efficacious with other serums, the absorption being rapid and the serum unchanged. As yet, however, the serum can not be obtained in sufficient quantity for use in such large doses. In all probability the want of success in the antitoxin treatment of erysipelas, puerperal fever, and allied affections, including infective endocarditis, may be similarly accounted for by the presence of more than one organic infection, thus requiring, as pointed out by Behring, Pfeiffer, and Kant-hack, more than one antidote.

Soil and Disease.—It is difficult to recognize the striking testimony of such reliable observers as Middleton, Bowditch and Buchanan as to the influence of a wet subsoil on the prevalence of consumption with the present view of the transmission of the disease only by human and bovine infection. We must recall, too, to mind the enormous prevalence of bovine tuberculosis, not to be observed only among stall-fed, crowded, and insanitary cattle communities, but amongst those animals under good open-air conditions. Do we not find in this prevalence of tubercle among pasture-fed cattle, and in the fact of the prevalence of the disease in localities with wet subsoils and dulcified sunlight, some probability that the tuberculous organism, like those of actinomycosis, tetanus and anthrax may have an independent and parasitic existence, and that, like malaria, tuberculosis will probably be found to have a double origin from purely microphytic as well as from parasitic infection?

It is remarkable that two at least of the most deadly of disease microbes, tetanus and anthrax, should be normal inhabitants of the soil, and yet how comparatively scarce these diseases are, and, having arisen, how communicable. It would seem that, as is the case also probably with malaria, while the

ultimate source of the disease is vegetation in the soil, yet a greater virulence and activity is attained, and for a short time maintained by cultivation in the human body, or in that of certain other warm-blooded animals. With regard to tuberculosis I would make this final remark: that while we may hope on the one hand by further careful sanitation, "by destroying and diminishing the careless distribution of bacillary dust, foods, that a considerable inroad on the remaining 14 per 1000 deaths from consumption may happily still be made. But if on the other hand we withdraw or relax precautions dictated by observations sound in themselves, although in some regards capable of amended explanation, our efforts will be less fruitful; for there will be some deductions to be made from the 20 per cent. reduction in mortality already achieved. In my belief there is a mephitic laboratory beyond our special control, yielding organisms ever ready to attack the unwary, and cleanliness is our first line of defense against them all. Where-ever the conditions of insanitation, dampness, deficient sunlight, and the prevalence of favoring diseases are present there aggressive activity may be again looked for.

San Francisco County Medical Society.

August Meeting.

EXTRAUTERINE PREGNANCY.

DR. E. E. KELLY pointed out that recent results in the operative treatment of this condition have aroused general interest. Formerly the doctor waited in anxious expectancy till rupture occurred and the patient fortunately lived, or died from the hemorrhage; or he endeavored to destroy the fetus in some one of many ways, trusting for subsequent absorption of the fetal mass. In 1597 Israel Spach described this condition and reported a case of calcified fetus. Regner de Graaf voiced a theory as to the place of impregnation, which closely corresponds with the modern and widely accepted theory. He believed the ova to be normally fertilized in the ovaries, and that the arrest of the fertilized ovum at any point along its path to the uterus caused extrauterine pregnancy. Many theories have been advanced as to the etiology of the condition; they differ as the advocates of the theories differ in their opinion as to the place of impregnation of the ovum. It is claimed that the ovum is fertilized in the Fallopian tubes; in the abdominal cavity; in the ovary; and in the uterus itself.

Kelly classifies the causes of ectopic gestation as follows: Obstacles in the lumen of the tube; disease of the tubal walls or anatomic peculiarity; factors acting externally to the tube, reducing its lumen. All these conditions imply a reduction in the internal diameter of the tube; they simply indicate the cause of the reduction. He evidently holds impregnation to take place in the tube or in the abdominal cavity. The pregnancy may be primarily tubal, ovarian or interstitial; secondary forms may develop from a dislocation of the fetus. Ovarian and abdominal pregnancy are extremely rare.

The clinical history of extrauterine pregnancy does not differ from normal pregnancy during the early weeks. A tumor forms on one side of the uterus, which is elastic and painful to touch. Both the uterus and this tumor grow from month to month. Obscure pains in the pelvis and down the legs may be noticed, and sometimes one sees all the signs of pelvic inflammation. After a few weeks there is usually an irregular bloody discharge from the uterus, more profuse than normal menstruation and more irregular as to time. The uterus often casts a decidua vera, which may be a perfect cast of the uterine cavity. This is a most important symptom; if it occurs with a known ovarian tumor, it is almost diagnostic of extrauterine pregnancy. The condition may go on to full term, spurious labor take place, and the fetus die. Generally the walls of the tube become thinned and rupture; this may occur at any time from a few weeks to nine months. The symptoms are quite characteristic of the condition. The patient, previously in good health, or but slightly indisposed, pregnancy known or suspected, is suddenly seized with severe lancinating pains in the pelvis and abdomen, which may be agonizing; pulse becomes rapid and feeble, and there are generally symptoms of more or less profound shock.

Hemorrhage may be between the layers of the broad ligament, in which case the symptoms of shock are less marked. The amount of hemorrhage into the abdominal cavity depends on the

point of rupture and the size of the vessels involved. If a large artery in the placental site is ruptured, death results before any operative interference can be undertaken. The hemorrhage may be slight, cease spontaneously, and recur from time to time as the fetus grows. The ovum may escape into the abdominal cavity, and death of the fetus result. If the ovum is near to the end of the tube, it may be expelled into the abdomen and there become encysted, producing adhesions, but perhaps doing little harm. This expulsion is known as tubal abortion. Suppuration may, on the other hand, occur, with discharge through perforation, into the rectum, vagina, bladder, or through the abdominal walls. Simultaneous uterine pregnancy may obscure the diagnosis of extrauterine pregnancy. Dr. Wilson of Baltimore has reported the occurrence of this condition, both fetuses going to full term and being saved, the mother subsequently dying from septic infection.

If the diagnosis is not made at the time of rupture it may be very difficult to make later. The fetus undergoes calcification and remains, often, as a hard mass in the pelvis, and may so remain for many years without causing any serious trouble.

The treatment has become of late years, almost exclusively surgical. Some of the methods for destroying the life of the fetus may be mentioned. The induced, or "faradic," current may be used for five to ten minutes daily for one or two weeks. Atropin or morphin may be injected into the tumor by means of a long syringe needle, two or three times a week. Whatever method is employed, it should be used till the shrinking of the tumor shows the life of the fetus to be destroyed. The electric treatment may cause rupture of the sac; it should be used only during the first three months, and in the intraligamentous form of gestation. It is best to operate and remove the entire mass. Immediate operation should be performed as soon as the diagnosis can be made; it is perfectly safe, and should the mass prove to be a hydrosalpinx or pyosalpinx no harm is done, for operation is indicated in these conditions. After rupture, if the case is first seen then, a mass may be found connected with the uterus, fluctuating in character, circumscribed and not occupying the cul-de-sac. Here the hemorrhage has taken place into the ligament, and some surgeons do not advise immediate operation. I think this dangerous advice, and always recommend operation. With rupture into the peritoneal cavity immediate operation is imperative.

He then reported a case illustrating some of the difficulties of the surgeon in making a correct diagnosis after rupture has taken place, and also one unusual in that a second extrauterine pregnancy occurred six weeks after operation for the first one.

CASE 1.—Mrs. T., aged 38, first seen July 19, 1898. Emergency call, she having been under the care of a homeopathic physician. Suffering very severe pain, only relieved by a hypodermic injection of morphin. Seen again July 22, suffering from a similar attack. August 4, called again and asked to take charge of the patient. The history was then obtained for the first time. Had been treated by former medical attendant since May 1, 1898. He assured her she was pregnant. About May 20, excruciating pains in the pelvis, with marked prostration. From this time had recurrences of the pain every few days, but not so severe as at first. Patient said her former attendant had not made an examination per vaginam since the commencement of her trouble. Examination showed uterus enlarged to size of three months' pregnancy; ordinary signs of pregnancy not present; uterus fixed in the pelvis; large nonfluctuating mass on the right, not clearly separable from the uterus. Diagnosis agreed within consultation, was uterine pregnancy, death of the fetus without expulsion, and it was thought septic infection had caused the pelvic pain. August 8, operated upon at the Waldce Hospital; uterus excised and mass resembling placenta removed. Left hospital August 18, much better and with temperature normal. October 28, exploratory incision determined on; tumor thought to be multiple fibroid, because of firm and unyielding character of the growth. November 5, abdomen opened. Mass in right side of pelvis, walled off by tissue. Right tube found to have ruptured, placenta remaining *in situ*, and the fetus located in Douglas' pouch. The cord was intact. Patient made uninterrupted recovery. At time of operation left tube and ovary found to be normal. Four weeks later complained of pain in left side of pelvis. Enlargement found in left tube. Increased in size and diagnosed as a probable tubal

pregnancy of the left tube. Operation on January 12, at the Waldeck Hospital. Left tubal pregnancy, with rupture from the fimbriated extremity; so-called tubal abortion. Large blood clot found in the pelvis. Patient has now entirely recovered and remains well. Fetus not found at second operation, but chorionic villi found on microscopic examination of the tube removed. Ovaries not removed; patient now menstruates normally and without pain.

CASE 2.—Mrs. L., age 28, in good health. Sudden, severe pain in right side of pelvis. Consulted Dr. A. G. Meyer, who made correct diagnosis and ordered her to the hospital. Pelvic tumor clearly made out on right side of pelvis, disconnected with the uterus. A complete decidua vera was passed, which did not show clearly the villi; diagnosis was made, nevertheless, of extrauterine pregnancy with rupture. Operation May 31. The right tube found enlarged and ruptured at extremity, with presence of a hematoma. Hemorrhage had ceased; abdomen closed without drainage. No fetus found, but chorionic villi clearly observable in portion of tube removed.

In conclusion he insisted on early operation when diagnosis can be made. The operation is not more difficult and is less dangerous than the operation for pyosalpinx. The mortality, when left to nature, is 68.8 per cent, according to Schauta, based on 249 cases. In 515 cases of operative treatment, the mortality, according to Martin, was 23.3 per cent. The great value of the uterine decidua membrane in diagnosis can not be overestimated.

He expressed his belief that hematoma of the pelvis is always due to ectopic gestation.

DR. J. HENRY BARBAT also urged immediate operation, performed as soon as diagnosis could be made. He exhibited two specimens recently removed. One was a tube, ruptured at about its center, with the placenta still *in situ*, the fetus having been expelled. Considerable hemorrhage followed but the case terminated in favorable recovery, after operation. Gestation had progressed to about the fourth week. The other tube and the appendix were removed at the one operation. A second specimen showed the smallest fetus he had ever seen. It could not have been more than two weeks from the time of fetation, and its true nature was only revealed by looking at the tiny mass of tissue with a magnifying glass. The diagnosis in the second case had been made by Dr. Barbat while he was himself in bed recovering from an operation for appendicitis which had been performed on him three days before. On the eighteenth day after his own operation he removed the tube and specimen shown. The husband of the patient called on Dr. Barbat while in the hospital, and from the husband's recounting of the symptoms extrauterine pregnancy was diagnosed, subsequent operation demonstrating the correctness of the diagnosis. He mentioned this phase of the case, simply to illustrate the fact that in the average case the symptoms were so clear that a mistake in the diagnosis should not be made, when the patient is seen before and at the time of rupture. The presence of a history of what seems to be pregnancy, with sudden severe lancinating pain, with more or less shock, and a tumor in the pelvis, make a picture that should lead to no mistake in the diagnosis. In his opinion, no question can exist about anything connected with this condition, save the one factor of diagnosis when the patient is not seen till some time after the rupture has occurred. As to the method of dealing with the trouble, one thing alone is to be done; operate and remove the tube, and also the ovary if the latter is found to be diseased. The appearance of the decidua vera, noticed by Dr. Kelly, is a very valuable factor in the diagnosis. The macroscopic appearance of the decidua is generally characteristic enough to confirm or make the diagnosis, without waiting for a microscopic examination.

DR. MAX STEVANSKY asked Dr. Kelly if immediate operation was advisable in all cases, as soon as the diagnosis was made, and without regard to the question of rupture. He had recently seen a report of forty-three cases in which the fetus was killed by means of the interrupted current and in all but one of these the patient made a good recovery; one patient died from rupture of the sac and subsequent hemorrhage.

DR. F. B. CARPENTER indorsed what had been said as to the value of the decidua in the matter of making a diagnosis. Curetting would often bring to light the decidua, if it were not cast out spontaneously. The gross appearance he also thought

quite significant of the condition, as the decidua did not at all resemble the decidua of uterine pregnancy. The operation he thought justified on the symptoms, the presence of a tumor in the pelvis, and the finding of the decidua vera as indicated. The operation is simple and the danger is not greater than in any abdominal section, save from the hemorrhage, which, in fact, does not in any way pertain to the operation, but rather to the cause for which the operation is undertaken.

DR. H. D. ROBERTSON said that the treatment of this condition was much easier than formerly, for the reason that we now knew more regarding it, could more readily make the diagnosis, and aseptic surgery had removed the dangers of operating. He recalled many cases, seen years ago, in which the patients could have been in all likelihood saved by operation which would at the present day be undertaken without much discussion. He cited, as a case in which much doubt and confusion had occurred through the patient not having been seen at the time of rupture, the case of a negro woman, a widow of 35, who had consulted him, as well as several others, for an obscure abdominal trouble. The early history could not be obtained, for the reason that the woman, a widow of three years, disclaimed all possibility of pregnancy and did not really give her history. The uterus was found enlarged, when first seen by the Doctor, and the temperature was 104 to 105 degrees. The tumor in the pelvis, which could be easily felt, had the appearance of an infiltrated cellular tissue. The os was slightly dilated, and the diagnosis made was that of abortion. Subsequently the uterus was curetted and decidua tissue found, which convinced all the doctors interested in the case, that it was one of abortion. There remained a mass behind the uterus, which was hard and not fluctuating. Two days after curetting he was hastily called and found the bed almost flooded with a very thick and foul-smelling pus; 40 to 50 ounces had escaped. Examination showed that the pus had perforated through the tumor wall into the rectum, and the finger, when introduced, encountered sundry masses of tissue that felt like bone. These were dug out and proved to be portions of a decomposed fetus. Operation was refused and the tumor scraped out as well as possible, through the rectal opening. The pus continued to discharge for some time, but the woman recovered and is now up and working, though there is still some discharge.

DR. HAROLD BRUNN said that while the diagnosis was often easy, there were times when it was difficult to make. Cases are encountered, however, in which the amount of the hemorrhage is small, the pain is not excessive, and examination shows the os somewhat dilated and the uterus enlarged; there has been a good history of pregnancy, and every indication is that the case is one of threatened abortion. Here it is not wise to curette, for it is not certain that the abortion may not be stopped. Such cases are exceedingly difficult to diagnose and not easy to handle certainly until the lapse of some days and the condition reveals itself more clearly.

DR. ZEMACH LEVIN asked in what manner the diagnosis could be made in the early stages of the trouble and before rupture of the sac had occurred. He thought it certainly wise to operate early, when the diagnosis could be made, but knew of no way in which the diagnosis could be surely made in the very early weeks and before rupture had taken place. He asked Dr. Barbat how he could make the diagnosis of extrauterine pregnancy in the cases he had reported, before rupture occurred.

DR. J. HENRY BARBAT said, in reply, that he knew of no way of making the diagnosis as a certainty in the early weeks and before rupture. In the cases he reported the diagnosis had been made for the reason that the sac had ruptured and the accompanying symptoms were clearly those of extrauterine pregnancy with rupture.

DR. KELLY, in closing the discussion, said that operation was the only method of treatment that could be safely recommended. He recalled a report of sixteen cases treated by electricity in order to kill the fetus, and of these three of the patients died. The operation is especially free from dangers, as we know that pregnant women will take an anesthetic better, and resist shock better, than those not pregnant. He agreed in the belief that the gross appearance of the decidua was often enough to indicate the condition, without resorting to the microscopic examination of the tissue. When the whole cast of the uterus is thrown out, it does not at all resemble the cast in membran-

ous dysmenorrhea, and confusion ought not to arise between these conditions.

CANCER OF STOMACH.

DR. F. B. CARPENTER reported an operation for cancer of the stomach, and said that he did not report the case as cured, nor make the statement that the man would live forever. He thought it well, however, to record the operation as successful so far as the time elapsed allowed. The man had now been quite well for three months. The history was clear, all the classic symptoms and signs of cancer of the stomach being present. Operation was recommended and refused. Later the patient returned and agreed to the operation. The pylorus was somewhat to the right, and the incision was made vertically, through the right rectus muscle. The mass was very easily reached, was movable, and there were no nodules in either the lesser or the greater omentum; there were, however, some in the tissue of the stomach away from the mass itself. For this reason the chance of relief after operation was thought good. Two clamps were placed on the stomach and one on the duodenum; the lesser and the two anterior layers of the great omentum were ligated. Great effort was made to preserve all the blood-supply possible. The value of this had been demonstrated by the experiments which he and Dr. Barbat had made on dogs, and the results he thought were uniformly better when ample blood-supply was assured. The omentum for about one-third of the length of the stomach was tied off. The entire cut end of the stomach was sewed with three layers of sutures. The first lot of sutures was through the mucosa, and was a continuous suture; the second was an interrupted suture line which approximated the cut ends perfectly; these sutures passed through all layers. The approximation seemed to be perfect, but for safety a line of interrupted Lembert sutures was introduced. The duodenum was anastomosed with the posterior wall of the stomach very easily, by the aid of a Murphy button. No temperature over 99 was observed, and that occurred on the following day. For four days rectal feeding was employed, but after that liquid diet by the mouth was allowed. The man made a good recovery and has since the operation gained thirty pounds in weight. Mortality was formerly from 15 to 50 per cent. in these cases, following operation; it has been reduced by recent mechanical aids and is now probably about 20 per cent.

DR. J. HENRY BARBAT said in the matter of connecting the intestine, it would sometimes be found that the duodenum could not be brought up to the stomach without too great tension. When this was the case he thought it better to cut the jejunum and anastomose it with the stomach, closing the lower end; then to anastomose the duodenum to this portion of jejunum, five or six inches below the stomach. In this way the bile is led to the intestine at about the normal point, and is not allowed to enter the stomach and do harm by producing irritation.

Canadian Medical Association.

(Thirty-Second Annual Meeting, held in Toronto, Ont., Aug. 30, 31 and Sept. 1, 1899.)

(Concluded from p. 622.)

SECOND DAY—MORNING SESSION.

ERYSIPELAS, WITH TREATMENT BY MARMOREK'S SERUM.

DR. A. DE MARTIGNY, Montreal, recited his experience during the last fifteen months with this serum in cases of erysipelas of the face. Although the result of the ordinary treatment in these cases is very good, he thought that the results that he had achieved in several cases treated after the manner commended the employment of the serum to the profession. One case in particular reported, where the temperature registered 105 degrees and the pulse 148, patient very weak and the face very much swollen and no improvement after ichthyol and ordinary tonic treatment, one injection (20 c. c.) of the antitoxin, with the application of a solution of bichlorid 1-4000 brought the temperature next morning down to normal and the pulse to 96; and the next day pulse normal. Five days thereafter, the patient, a female, went back to work. Other cases were mentioned in which the results were equally good. It exerted a prohibitive action also on relapses.

DR. POWELL, Ottawa, asked re the dose of this particular

serum, whether the standard dose was 20 c. c. and whether the dose is altered by the severity of the case or by the age of the patient and other necessary rules for the guidance of the practitioner.

THE PRESIDENT stated he had employed this plan of treatment recently in half a dozen cases with very prompt results and instanced a case where seven attacks or relapses had occurred in fourteen months, but after using this serum, no relapses had occurred in that particular patient.

SIR JAMES GRANT, OTTAWA, hoped Dr. de Martigny would pursue further his observations on this plan of treatment for erysipelas and stated that as far back as 1863, he himself had been subjected to the influence of the serum from ordinary vaccin for a very severe blood-poisoning from which he was suffering at the time. He had employed serum therapy then in the treatment of cases of skin disease, particularly severe forms of psoriasis that he had met.

DR. IRWIN, Weston, related a case of scarlet fever in a child which after two weeks developed erysipelas and in twenty-four hours was in a very bad state. He injected 10 c.c. on the second day without any result and the child died.

DR. DE MARTIGNY, in reply, stated that either 10 or 20 c.c. can be used, but the streptococci are not all of the same kind. He spoke of the different families of these, and if we are sure of the particular variety we have to deal with in a specified case, the serum corresponding, then 10 c.c. would be a sufficient quantity; but as we do not always possess this information, he considered it wise to inject the larger dose at once. He concluded by asking the members to try this treatment on any cases they might meet with in the next twelve months and report progress at the next general meeting of the Association.

COMPLICATIONS AND TREATMENT OF FRACTURE OF THE SKULL.

DR. J. M. ELDER, Montreal, read this paper. At the outset he stated that his paper had more especially to deal with fractures at the base. During this past summer, he had had under his care in the Montreal General Hospital, no less than seven cases, five being there at the same time, and the whole seven recovered. He thought the profession too prone to think that this was a form of fracture in which treatment was useless. The history of one of these cases in particular was related, the form and nature and location of the injury with the symptoms. He quoted from one of Shepherd's cases where he had assisted that surgeon several years back in tying the common carotid artery after such an injury and stated that in this case he ligated the left common carotid artery, the injury being on the left side, put the patient to bed and she regained consciousness on the third day. Complications ensued in the way of thromboses in different sinuses, but the patient left the hospital twenty-six days after the accident, perfectly well and continues well up to the present time. The other six cases were very much of the same nature. The doctor then outlined the general form of treatment pursued in these cases, giving attention to keeping nose, ears and mouth in proper condition, and having controlled the hemorrhage we should render the parts as aseptic as possible, giving special attention to the external ear. The patient should be kept free from all excitement either of sight, sound or mental agitation.

DR. LETT, Guelph, Ont., brought up the question of the development of mental symptoms after these injuries and also after the tying of the carotid artery.

DR. ERNEST HALL asked the surgeon what led him to select the left side and where there are symptoms of internal without external hemorrhage, what are the surgical indications.

DR. HARRISON, Salkirk, Ont., also asked as to the development of mental symptoms following these cases. He had had injuries of the brain in which there was no ligation of the carotid, in which there was perfect restoration and then a year after these symptoms supervened.

MR. CAMERON stated that he had tied the common carotid on both sides and no mental symptoms followed and thought that these symptoms were due to the traumatism.

DR. SHEPHERD, Montreal, said, in reference to the case Dr. Elder had mentioned, that he had operated several years ago on one of these patients and found a clot at the base of the skull, and because the hemorrhage was so profuse, he tied the carotid immediately. So far as he knew, up to a year ago, no mental symptoms had developed.

DR. ELDER in reply thought that he had heard that this case of Dr. Shepherd had within the last two or three months gone insane; Dr. Shepherd had no knowledge of this and thought it could not be the fact. He was of the opinion, however, that mental symptoms did not develop by reason of tying the cord.

DRS. ATHERTON, Fredericton, N. B., and BELL, Montreal, contributed further to the discussion of the paper and the cases cited therein.

OBSERVATIONS ON ADENOIDS AND ENLARGED TONSILS AND THEIR REMOVAL, WITH NOTES.

DR. D. J. GIBB-WISHART, Toronto, contributed a paper with this title. The paper was based on the results obtained in a service of four years in the Sick Children's Hospital. His table showed that in all 103 operations had been performed, 47 males and 56 females. Twenty-four per cent. were under 5 years, 21 per cent. over 10 years, and 52 per cent. between 5 and 10 years. Two deaths resulted, both from the anesthetic. Sixteen of these cases were examined one or two or three years after the operations and only four showed any return of the disease. He spoke of the diagnosis of adenoids, the treatment after operative measures had been practiced and the healthy mental improvement which followed operation for this condition. A description of the operation for removal of diseased tonsils followed and he stated that in his opinion the operation was too frequently performed. He also discussed the choice of anesthetic, favoring chloroform.

SIR WILLIAM HINGSTON deprecated the employment of the spray in the nasal passages and the frequency of the operation of tonsillotomy. He had seen many members of different families, all having enlarged tonsils in their youth, grow up, and in adult life the tonsil returned to its normal condition. Powders are the proper applications to the nares.

TUBERCULOSIS AND INSURANCE.

DR. JOHN HUNTER, Toronto, spoke of the imperative duty of the examining physician furnishing true and accurate reports to the medical directors of life insurance companies, and at the same time strongly asserted the position that it was the duty of these companies to see that the applicants should receive the benefit of the advances of medical science of the day. The whole burden and purport of the paper was to invoke discussion that could be used to define more clearly where we are at with reference to the relationship between tuberculosis and insurance and to what degree does the presence of tuberculosis in the individual or family history justify the rejection of applicants. Hereditarily counted for naught, physical condition and environment much. Too much stress was put upon family history nowadays, whereas the applicant did not receive the right benefit from his own good physical condition.

DR. BENEDICT, Buffalo, spoke of heredity as very much like the heredity of scarlet fever, the difference between a longer period of incubation.

SIR WILLIAM HINGSTON said that this question has done an enormous evil to society. A beautiful young girl is about to be married; a whisper goes round that the disease may be transmitted; she comes of tuberculous stock; the nuptials are declared off and in this way society suffers.

SIR JAMES GRANT advocated the formation of a national society such as the Prince of Wales presides over in England for the spread of information concerning tuberculosis and the means to employ to effect its eradication.

DR. P. H. BRYCE thought that if this Association could form an association to assist the government of the country in this matter, it would be accomplishing much. He advocated inspectors for schools and institutions and if a solitary case be found, to have that individual removed.

CYST OF BROAD LIGAMENT.

DR. CHAS. SMITH, Orangeville, Ont., outlined some of the features we have to deal with in operating on intraligamentous cysts of the broad ligament. The patient, who was 53 years of age, enjoyed good health after operation for a period of five years, when death resulted from an attack of apoplexy.

AFTERNOON SESSION--SECOND DAY.

IMPLANTATION OF THE URETERS IN THE RECTUM IN A CASE OF EXTROPHY OF THE BLADDER, WITH PATIENT.

PROF. GEORGE A. PETERS, Toronto University, exhibited the

patient, a boy aged 4½ years. At the age of 2½ years he first came under the surgeon's notice, with the condition described in the title and also proclivita recti. These cases are very troublesome, disgusting and loathsome to friends and an operation ought to be performed for their relief. The surgeon first described the cause of these conditions, then took up the operation for the restoration of the rectum, which was done two years ago and now shows it to have been a skillful and beneficial operation to the patient. The scrotum was present and the testicles descended; and a groove descended along the broad and shortened penis down to its tip. At the lower part of the bladder wall, the openings of the ureters could be detected; and the surface when dried would remain dry only from 15 seconds to 1 minute. He proceeded further in the description of the case and then detailed the different steps of the operation. The operation was done entirely extraperitoneally; the incisions in the rectum were made on either side thereof; and the little patient has good control over his sphincter ani, to the extent, that on the day he was shown to the Association, he had passed his urine at 8 a.m., then at 11:30, and again at 2:30 p.m. At night, he will go for four or five hours, without passing anything from the bowels at all. Almost immediately, the rectum manifested a tolerance of the urine. It is now five weeks since the operation was performed, and the bladder is all gone.

MR. CAMERON, the president, thought that this operation was bound to become the operation of the future. Heretofore a good many of these operations have proved failures.

PROF. JAMES BELL, McGill University, congratulated Dr. Peters on the result of this case. He considered it a surgical triumph. The operation for replantation of the ureters has been done for a good many different things; and the question of tolerance of urine in the rectum is still much discussed; but the results shown in this operation are good.

DR. SHEPHERD, Montreal, thought that the operation was an ideal one and congratulated Dr. Peters on the great success he has obtained in this case.

DR. PETERS, in reply, said that we must not lose sight of one point, that there is danger of death from ascending pyelonephritis. That has been the cause of death, when the operation has been done in animals.

CO-OPERATION OF SURGEON AND PHYSICIAN IN ABDOMINAL CASES.

DR. A. L. BENEDICT, Buffalo, took this as his theme and made an interesting presentation of the subject. He cited in illustration thereof several instructive cases in which the surgeon and physician should conjointly treat the patient. He thought it would be infinitely to the advantage of both and also to the patient if many of these cases were handed over for after-treatment to the physician.

The President spoke of the difference between the two callings and thought that every surgeon should serve a considerable apprenticeship in general medicine before reverting to purely surgical work.

SIR WILLIAM HINGSTON said that the surgeon should not make his diagnosis at the time of the operation. Some surgeons when in doubt, cut in. That, to his mind, is almost criminal. He generally finds that men in relation to their youth and experience, diagnose their cases in this way. They often, so to speak, "jump at the diagnosis." The proper way is to go over your case thoroughly, write down what it may be, then eliminate what it is not and by this process of exclusion, you ought always to be able to arrive in the end at a correct diagnosis. Sir William always diagnoses his cases before he operates. He expressed amazement at the rapidity with which some men rush to operate.

GALL-BLADDER SURGERY.

DR. J. F. W. ROSS, Toronto, first exhibited to the meeting a cabinet of gall-stones he had removed in operations and a specimen of a fistulous gall-bladder. He then took up the surgery of the gall-bladder, described the technic of the distinct operations, gave records of his cases and percentages of recoveries and demonstrated many important facts of interest in connection therewith. He also presented for examination an instrument he had recently devised and had prepared in London for the removal of stones from the common bile-duct. In regard to a remark from Sir William Hingston, he took issue with

that gentleman, and stated positively that he did not hesitate, when in doubt, to "cut in."

DR. T. K. HOLMES, Chatham, Ont., spoke of the interest and instruction conveyed in Dr. Ross' paper. When the gall-bladder is enlarged and adherent and the abdominal wall thin, the operation for the removal of gall-stones becomes an apparently easy operation; but if thick or under the edge of the liver far, he knows of fewer operations that will tax the surgeon's strength, than an operation of this kind. He commended Sir William Kingston's plan of exclusion in the diagnosis of abdominal tumors and illustrated on the black-board, an operation he had performed six weeks ago for gall-stones, on a woman with a thick abdominal wall.

PROFESSOR BELL entirely agreed with most of the conclusions of Dr. Ross; but when we come to deal with stones in the common bile-duct, he holds widely different views from Dr. Ross. It is not such a very difficult and serious operation as Dr. Ross seems to think. He reported eight cases twelve months ago and since then he has removed stones in four cases. Two of these have died: one from ether and the other from iodoform poisoning. In no case has he failed to remove the stone and in three of these cases the stone has been lodged in the ampulla. He does not attempt to break the stones.

ADDRESS IN SURGERY—THE RADICAL CURE OF HERNIA.

DR. W. B. COLEY, New York, gave an admirable historical review of this subject. He traced its origin from earliest times, giving dates and names of those concerned in its development, describing *en passant* in detail the different operations performed by the pioneers in this particular branch of operative surgery. Coming down to more recent times, the work of Macwren, Bassini, Kocher, Halsted, and others received detailed attention. The respective operations and improvements of these gentlemen were described and the honor accruing therefrom apportioned. Errors of technic were then dwelt with. Incision of sufficient length both in skin and also in aponeurosis came in for notice. Sutures and suturing and suppuration and the splendid advances which the radical cure has made in the last decade were not forgotten. Instead of a mortality of 6 per cent., we have now one of less than 1 per cent. amongst the leading operators. Five to 10 per cent. now suffer from suppuration. The reader closed his able paper with a concise reference to the operation as applied to femoral hernia, and thought most umbilical hernia got along better without any operative interference.

A vote of thanks was moved by Dr. Shepherd, seconded by Dr. Peters, to Dr. Coley for having given the Association the opportunity of hearing such an important paper. This was carried unanimously. Mr. Cameron presenting this to Dr. Coley in his usual happy manner and Dr. Coley making a felicitous reply.

THIRD DAY—MORNING SESSION.

ANESTHESIA BY CHLOROFORM AND ETHER.

DR. W. B. JONES, Rochester, delivered a practical paper with his title. He described minutely the preparation of the patient beforehand for the administration of the anesthetic, deprecating smearing the face and nose all over with vaselin. The information regarding the heart did not so much take cognizance of heart murmurs as it did of the muscular tone of the heart and the condition of the arteries. The quality of the blood was of importance. One should know something of the capacity of the chest and the total solids excreted in the twenty-four hours in the urine. Deformities and any partial paralysis should not escape notice and attention. The quantity of the anesthetic employed was dwelt upon. The usual quantity of chloroform is from eight to twelve drops per minute although he has kept up the anesthesia with only four drops per minute or half an hour. Strict attention must be paid by the administrator to his work, particularly following the pupils, respiration and the color of the face. The position of the patient must be such that respiration will not be impeded, the arms not hanging over the edges of the tables and all proper instruments at hand ready for emergencies. The particular juncture at which ether might be successfully changed for chloroform and vice versa received minute description. The surgeon was to understand that the anesthetist "was boss of the job," and neither needed nor should tolerate any interference. The time was ripe for

the appearance of the specialist in this branch of medical science; and every large city should have specialists in this line. He further dwelt on the symptoms of impending dissolution and the necessary means to be employed to avert such an accident. The responsibility of the anesthetist is equal with that of the surgeon and he should have a complete knowledge of the operation to be performed and the length of time that ought to be taken to complete every operation.

SOME OBSERVATIONS ON THE TREATMENT OF CANCER.

DR. A. R. ROBINSON, New York, illustrated his subject with a diagrammatic drawing. The paper which he contributed was in support of two papers which he had already delivered in Canada on the same subject, one in Toronto and the other in Kingston. He stated that after a pretty extensive experience in drugs, experimenting for a cure for cancer, there was no single drug known to the medical profession, internally administered, that would exert any influence on one of these growths in any part of the body. Too many cases go on with medicinal treatment when an early application of surgical measures would bring about more beneficial results. There were one or two places where the speaker thought a paste preferable to the knife, i. e., where you can not employ a knife to cut down deep, such as in the region of the nose and on the scalp. Arsenious acid paste is supposed to have more or less of a selective action in epithelioma. Equal parts of this with gum acacia of the consistency of butter should be applied and left on for 16 to 18 hours so as to get the right effect. From this you will get a complete necrosis *en masse* and an inflammatory process, but not an inflammation sufficient to destroy the tissues. Then you get the simple process of granulation. He protested strongly against a remark of Mr. Watson Cheyne that all epitheliomata should be treated with the knife and that alone. In his opinion, the assertion was too sweeping and his statements erroneous. He quoted Marsden in support of his conclusions.

DR. SHEPHERD thinks that in the majority of instances, the knife is the proper instrument. He has not employed escharotics except in a very small number of cases. Cancer in the first place is local and ought to be treated immediately by removal. Nitrate of silver is no use at all. In some cases the knife is not as good as the escharotic, but these cases are very few and chiefly on the face and scalp.

DOMINION REGISTRATION.

DR. RODDICK, who had the subject in hand delivered at some length a detailed plan of the scheme and was followed by Dr. Williams, Ingersoll, Ont., representing the Ontario Medical Council, who moved a strong resolution committing the Association to the carrying out of the plan, seconded by Dr. McNeill, Charlottetown, P. E. I. which was put to the meeting and unanimously adopted amidst great enthusiasm. Dr. Roddick was further commissioned to introduce a bill into parliament at the next meeting of that body.

NOTES OF VARIOUS EUROPEAN CONVENTIONS IN 1899.

DR. R. A. REEVE, Toronto, recited his observations whilst attending the International Otolological Convention, the International Ophthalmologic Convention and the British Medical Association's section on ophthalmology. He quoted from four sets of addresses delivered at these meetings and reviewed the discussions that had arisen on different subjects, paying attention to recent advances in these specialties and the newer remedies employed.

SURGERY AMONG THE INSANE.

DR. A. T. HOBBS, Asylum for the Insane, London, Ont., first pointed out the differences in operating on the sane and the insane and the difficulties to be met with in practicing upon the latter. After dwelling on the peculiarities and the maneuvers necessary before an examination will be submitted to on the part of these people, he spoke of the exceptional obstacles which had to be surmounted in order to study gynecology in these unfortunates. The best results were achieved in pelvic inflammations. In anesthetizing at first, chloroform had been employed, but it was found to be invariably weakening for the patient, so that it was abandoned and ether is now altogether given.

DR. ERNEST HALL, Toronto, instanced several operations in his own practice in British Columbia, in which out of 29 cases operated on, 7 were restored to reason. He contended that 92.5 per cent. of insane women have pelvic disease.

CRANIOTOMY FOR MICROCEPHALUS.

DR. W. J. WILSON, Toronto, reviewed the history on this subject and then proceeded to state his own case. The patient, a boy of 4 years, was presented to the members present. The patient was first brought to him in April last. He had then been taking thyroid extract for nine months in 5-grain doses per day and gradually increased until he was taking 20 grains per day. When the doctor saw him he walked bent over almost at a right angle, very excitable, nervous and always "on the go," restless, sleepless and could only say one word, "mamma." It was "mamma" for everything. Operations were done on him in four stages, with the object of preventing shock. Since operation five months ago, he has learned quite a number of words. He can stand erect and shows quite an improvement in every way. This, the doctor thinks is entirely due to the operation, as before, the mother had frequently tried to teach and train him but without perceptible result.

Place of meeting in 1900, Ottawa, Ont.

ELECTION OF OFFICERS.

President, Dr. R. W. Powell, Ottawa.
 Vice-President for Ontario, Dr. A. J. Johnson, Toronto.
 Vice-President for Quebec, Dr. A. R. Marsallais, Montreal.
 Vice-President for New Brunswick, Dr. Meyers, Monckton.
 Vice-President for Nova Scotia, Dr. W. G. Putnam, Yarmouth.
 Vice-President for Prince Edward Island, Dr. S. P. Jenkins, Charlottetown.
 Vice-President for Manitoba, Dr. W. J. Neilson, Winnipeg.
 Vice-President for Northwest Territories, Dr. Hugh Bain, Prince Albert.
 Vice-President for British Columbia, Dr. O. M. Jones, Victoria.
 Treasurer, Dr. H. B. Small, Ottawa, Ont.
 General Secretary, Dr. F. N. G. Starr, Toronto.

Orleans Parish Medical Society.

Meeting held Aug. 26, 1899.

UNILATERAL HYPERIDROSIS.

DR. L. G. LEBEUF related a case of unilateral hyperidrosis occurring in a man aged 60 years, suffering from spinal sclerosis. After exertion of any kind the left side of the body is dry, while the right perspires excessively. This is particularly well marked above the level of the fifth cervical vertebra, below which the hyperidrosis is not so noticeable. The trouble dates back thirteen years, to an attack of la grippe, of three weeks' duration, followed by hemiplegia, recovery from which was tardy. There is no history of syphilis.

DR. ISADORE DYER said this was the most extensive case of hyperidrosis he had ever seen. It is not uncommon to see localized disorders of the kind, as for instance excessive perspiration on one side of the lip, so intense as to cause inflammation of the sweat glands, hydradinites.

CARBOLIC ACID IN TETANUS.

DR. HERMAN B. GESSNER called attention to the treatment of tetanus, with carbolic acid, injected hypodermically. He had received a letter from Dr. E. F. Newell of St. Joseph, La., detailing a case treated successfully by this method. This was a negro boy aged 12 years, to whom he gave 25 m. of a 2 per cent. solution of carbolic acid on the second day. There was immediate relief from chronic convulsions, and a diminution of the tonic muscular contraction. The treatment was repeated twice daily for a week, when the boy was entirely well. Chloral and bromid, which had been in use at first, were discarded on the second day of the carbolic acid treatment. This treatment was brought to the attention of the profession by Prof. H. C. Wood, Jr., in an article published in the May number of *Mercer's Archives*.

DR. T. S. DABNEY spoke of the treatment of tetanus with the brains of animals, reciting three cases reported as cured by the use of emulsion of rabbit brain.

DR. C. H. TEBALUT, JR., had recently treated three cases of tetanus with serum, all without benefit. In one of these, that of an infant, the injection had been intracerebral. He condemned the use of eserin, which he had seen used in the surgical wards of the Charity Hospital. Of peculiar interest was a case lately seen by him, which ended fatally within twenty-

four hours, with subnormal temperature throughout—this was a case of intracerebral infection through unskilled douching.

DR. M. J. MAGRUDER had used serum in one case only; in this the effect seemed to be harmful rather than beneficial. He was interested in determining the cause of the frequency of tetanus neonatorum in midwives' cases. In his own obstetric practice he had delivered two hundred infants without having a case, while he had treated twenty-five or thirty cases in infants delivered by midwives.

DR. H. A. VEAZIE had treated seven cases by plying them freely with liquor, keeping them fully under the influence; all had recovered. Chloral and bromid had also been administered, as well as salicylate of sodium in some cases.

DR. E. M. DUPAQUIER stated that credit for the introduction of carbolic acid in the treatment of tetanus should be given Baccelli, an Italian physician; solution as strong as 10 per cent. had been used by him.

DR. F. PETTIT had not met with success in the use of anti-tetanic serum as a curative means, but he made it a practice to use it as a preventive in all punctured wounds likely to be followed by tetanus. He believed that the serum had been efficient in this application.

DR. GESSNER read from Lewis Smith's work on Children, a passage describing the great reduction of the mortality from tetanus neonatorum in the Dublin Lying-in Asylum after thorough ventilation had been provided for. Possibly this is not a true tetanus after all, but, as had been suggested to him by Dr. Dupaquier, some other cerebral affection.

Referring to Dr. Magruder's statement about the relative frequency of this disease in midwives' practice, he regretted to say that he had once had a case, in the infant of a cleanly woman whom he had delivered. In this case, however, the stump of the cord had been meddled with by a relative of the patient, who had probably been the infecting agent.

DR. F. W. PARHAM spoke of papers by Drs. Halliday and Sims, attributing the disease to pressure on the head in faulty modes of carrying infants.

DR. DUPAQUIER, referring to the suggestion that the disease in the new-born may not truly be a tetanus, said this had been put forth by a French author, who dwelt on the traumatism to the head of the fetus in its passage through the pelvis, and thought a resultant meningitis might explain the symptoms observed in these cases. As to serum treatment, it had been established that serum injected into the subcutaneous tissues can not be expected to reach and affect toxins fixed by the cerebral tissues. Intracerebral injection must be resorted to for this purpose.

Value of Patient's Estate Not to Be Considered.—The supreme court of Alabama holds that the trial court erred, in the case of *Morrisette* against *Wood*, in admitting testimony as to the value of the patient's estate against the objection of the defendant, who was executor thereof. And for this it reverses a judgment recovered for medical services rendered defendant's testator, remanding the case for a new trial. The supreme court says that the inquiry was as to the value of the professional services rendered by the plaintiff, and that the amount or value of the patient's estate could shed no legitimate light upon this issue, nor aid in its elucidation, as the case was presented in the trial court, there being no hint in the evidence that there was any recognized usage obtaining to graduate professional charges with reference to the financial condition of the person for whom such services were rendered, which had been so long established and so universally acted upon as to have ripened into a custom of such character that it might be considered that these services were rendered and accepted in contemplation of it. The cure or amelioration of disease, the court goes on to say, is as important to a poor man as it is to a rich one, and, *prima facie* at least, the services rendered the one are of the same value as the same services rendered to the other. The statement of the plaintiff as a witness that he knew the defendant's testator, and that he had a certain disease for several years before his death, and that he died of that disease complicated with another, which witness named, the supreme court further holds, involved no transaction with the deceased, and was not within any exception to the competency of parties as witnesses under section 1794 of the code, prohibiting a party from testifying as to transactions with a decedent in an action against his executor.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance	\$ 5.00
Foreign Postage	2.00
Single Copies	10 Cents

In requesting change of address, give old as well as new location

Subscriptions may begin at any time and be sent to

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
No. 61 Market Street, Chicago, Illinois.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, 100 Washington St., Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

These new members of the Association should send their annual subscription direct to the Treasurer, Dr. Henry P. Newman.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the Editor, and all communications relative to the business of the JOURNAL, proof-sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 61 Market Street, Chicago.

Original communications are accepted with the understanding that they are exclusively contributed to this JOURNAL.

SATURDAY, SEPTEMBER 9, 1899.

THE MICROBE OF YELLOW FEVER.

When Sanarelli announced his discovery of the bacillus icteroides, which he held to be the specific cause of yellow fever, upon rather weak grounds, Sternberg drew attention to the similarity between his bacillus X, isolated from yellow-fever cases, and Sanarelli's organism. Since then evidence has accumulated to show that these two microbes are distinct; this is now Sternberg's opinion¹.

Sanarelli's claims in regard to his bacillus have been confirmed by numerous Italian investigators, including such names as Foà². Most of these confirmatory studies were made in the laboratory and far removed from infected districts. Novy advanced the claim that inasmuch as Sanarelli's organism proved itself very resistant to low temperature, it could not well be the cause of yellow fever, which is a disease of warm countries and warm seasons. Sanarelli³ ridicules this statement and calls attention to the well-known fact that pathogenic bacteria in general withstand cold well without losing vitality, although no growth generally occurs while so exposed. Certain observations in epidemiology also show that the agent of yellow fever does not lose its vitality in cold, e. g., the occurrence of yellow fever in midwinter and the transportation of the disease by means of ships which pass through severe exposure to cold.

In thirty-two out of thirty-nine autopsies on yellow-fever cases, P. E. Archinard⁴ found a bacillus practi-

cally identical with the bacillus icteroides, but the agglutination reactions, obtained with the serum of convalescing yellow-fever cases and other diseases, did not, it seems to us, produce as prompt, decisive and constant results, as might be expected and desired, neither in the case of Sanarelli's organism nor that of Archinard.

Then Reed and Carroll⁵ published a preliminary note concerning the marked resemblances of the bacillus icteroides to the bacillus of hog cholera in cultural, morphologic and biologic respects. They expressed the opinion that Sanarelli's organism is a variety of the hog-cholera bacillus, and that it should be regarded only as a secondary invader in yellow fever. It is impossible now to go into the details of Reed and Carroll's experiments, but one observation strikes us as very significant, and that is the marked agglutinative reaction shown toward the hog-cholera bacillus by the serum, very highly diluted indeed, of an animal immunized with bacillus icteroides, and vice versa.

In his answer to some of these criticisms, Sanarelli can do nothing but emphasize the great differences between his observations and Reed and Carroll's, especially as to cultural peculiarities and to certain lesions following experimental inoculations; Reed and Carroll obtained typical focal necrosis in the liver by injecting bacillus icteroides, a lesion which Sanarelli had not met with in all his work—if we mistake not, Foà observed the production of necrotic foci in the spleen by the bacillus icteroides—Sanarelli ascribes Reed and Carroll's startling results to some deplorable fault or accident in bacteriologic technique—a point which will no doubt be effectively and completely disposed of.

Sternberg⁶ refused to yield to whatever evidence there may be in favor of the specific iteroide rôle of Sanarelli's bacillus because he—Sternberg—did not find it in his researches, employing, as he did, media upon which the bacillus grows readily, because of the similarity between Sanarelli's bacillus and the hog-cholera bacillus, especially with respect to pathogenic action and agglutination, and because serum of yellow-fever patients does not markedly agglutinate Sanarelli's bacillus while serum of immunized animals does in very high dilutions. Sternberg expresses perfect willingness to revise his opinion if Reed and Carroll's observations are shown to be faulty. There is another possible contingency which, perhaps, ought to be taken into account in connection with this, namely, that Sanarelli's bacillus might be the cause of yellow fever even though its resemblance to the hog-cholera bacillus is so pronounced as to apparently amount to absolute identity except possibly in respect to the pathogenic effects on man. However, this is not supported by analogy, and it does not satisfactorily explain the failure of yellow-fever serum to agglutinate the bacillus icteroides as promptly as that of immunized animals. For the present, and as the matter now stands, Sternberg's view that the colon bacillus, bacillus X and bacillus icteroides are

¹ Medical News, August 19, 1899.
² *Chl. f. Allg. Path.*, etc., 1899, x, 524.
³ Medical News, August 12, 1899.
⁴ N. Y. Med. Journal, Jan. 28, 1896.

⁵ Medical News, April 29, 1896. ⁶ *Loc. cit.*

pathogenic saprophytes occasionally and accidentally present in the blood and tissues of yellow fever would therefore seem a reasonable one. To what extent the results of the work in Havana and elsewhere of the Commission of Medical Officers, U. S. Marine-Hospital Service, of which a preliminary report has appeared¹, will change matters remains to be seen. The preliminary report is very favorable to Sanarelli. The bacillus *icteroides* was isolated from all the cases of yellow fever which were studied in Havana. While a large number of different animals were found susceptible in the same general manner to experimental inoculation with bacillus *icteroides*, bacillus X, colon bacillus and Havelberg's bacillus, and their toxins, the commission claims to have established the "natural specificity" of Sanarelli's organism because it proves to be the only microbe which was infectious under natural conditions. The primary infection takes place through the respiratory tract; the infection may remain local in the lungs or it may invade the blood and give rise to a septicemia, the invasion of the blood corresponding clinically to the "secondary paroxysm" of yellow fever heretofore regarded as the result of secondary, mixed infections which, of course, may take place. The commission differs from Sanarelli, who regards yellow fever as a septicemic disease from the start, and from Sternberg, who regarded the gastrointestinal tract as the point of first attack. Theoretically, the primary infection of the respiratory tract may explain the failure of Sanarelli and others to find the bacillus in every case of yellow fever on the assumption that the lungs were not examined carefully enough. The full report of this commission will be read with great interest. In the meantime the relations of the bacillus *icteroides* to the hog-cholera bacillus should be definitely settled, as much which now seems strange will then become clear.

NAGGING WIVES AND NERVOUS HUSBANDS.

Some years ago one of the health officers of New York City stirred up self-appointed representatives of the "new woman" by his remarks on the production of nervous prostration in husbands by the nagging of wives. The novelists devote much attention to the self-sacrifice of the wife to the hypochondriac husband, but the reverse of the picture is too well known to physicians. The hysteric nagging wife of the insane or neurasthenic husband is a familiar acquaintance. Such women are usually regarded as *fin-de-siècle* products. The puritan matron, like her descendants, however, was often a hysteric. The eighteenth century statutes anent the use of the ducking-stool—which still survive in Delaware—demonstrate the recognition of nagging as an antisocial vice by the fathers of the republic. In the late sixteenth and early seventeenth century, hysterics were far more frequent than is usually supposed, and that minor form of hysteria which takes the direction of motor restlessness was peculiarly apt to voice itself in nagging. In-

deed, in the "Comedy of Errors," which appeared in 1593, Shakespeare indicates that, according to popular opinion of that time, husband nagging produced not only nervous prostration but even insanity. In Act V, Scene i. the Abbess endeavors to ascertain the cause of the alleged insanity of Dromio of Syracuse, in the dialogue with Adriana.

Ben Jonson also indicates the popular belief in the nerve-destroying effects of nagging in his "The Silent Women." (Taine's English Literature.) Morose is an old paranoiac who has a horror of noise but loves to speak. He inhabits a street so narrow that the carriage can not enter it. He drives off, with his stick, the bear leaders and sword players who venture to pass under his windows. He sends away his servant, whose shoes creak. The new one wears slippers with wool soles, and only speaks in a whisper. Morose forbids the whisper and makes him reply by signs. His nephew, whom he ill-treats, finds for him a supposed silent woman for a wife. Morose, enchanted by her brief replies and her voice, which he can hardly hear, marries her. As soon as she is married she speaks, scolds, argues, as loud and as long as a dozen women. She orders the valet to speak louder and opens the doors wide to her friends, who arrive in crowds, overwhelming Morose by their noisy congratulations. Morose drives them out, gnashing his teeth and looking dreadfully. Afterward physicians who are called pronounce him mad and discuss his insanity before him in an interesting illustration of psychiatric phraseology of the seventeenth century.

The disease in Greek is called *mania*, in Latin *insania furor*, *vel, ecstasis melancholica*, that is *egressio*, when a man *ex-melancholico erudit fanaticus*. But he may be but *phreneticus* yet, mistress; and phrenitis is only delirium or so.

While the play is intended to depict a paranoiac with suspicious ideas, it also illustrates the influence which medical and popular opinion ascribed to nagging as a factor in nervous disorder. The Elizabethan dramatists, Jonson, Shakespeare and the rest were very fond of drawing dramatic allusions from current medical science, especially as related to psychiatry.

The most ludicrous appearance of the nagging wife in the literature of the first half of the present century was that of Mrs. Caudle of the famous "Mrs. Caudle's Curtain Lectures," by Douglass Jerrold. Of his hero Jerrold remarks: "Mr. Caudle was blessed with an indomitable constitution. One fact will prove the truth of this. He lived thirty years with Mrs. Caudle, surviving her. The nagging, however, had one serious result. When Mr. Job Caudle was left in this briery world without his daily guide and nocturnal monitor, he was in the ripe fullness of fifty-two. For three hours at least after he went to bed—such slaves are we to habit—he could not close an eye. His wife still talked at his side. True it was she was dead and decently interred. His mind—it was a comfort to know it—could not wander on this point; this he knew. Nevertheless his wife

was with him. The Ghost of her tongue still talked as in the life, and again and again did Job Caudle hear the mienitions of by-gone years. At times so loud, so lively, so real were the sounds that Job with a cold chill doubted if he were really widowed. And then, with the movement of an arm, a foot, he would assure himself that he was alone in his holland. Nevertheless the talk continued. It was terrible to be thus haunted by a voice, to have advice, commands, remonstrance, all sorts of saws and adages still poured upon him, and no visible wife. Now did the voice speak from the curtains; now from the fester, and now did it whisper to Job from the very pillow that he pressed. "It's a terrible thing that her tongue should walk in this manner," said Job, and then he thought confusedly of exorcism or at least of a counsel from the parish priest.

The "common scold" of the seventeenth and eighteenth centuries, and the nagger of to-day were expressions of an ill-regulated and ill-balanced nervous system which led to motor restlessness and egotistic inability to see the rights of others. Nagging is far from rare as an occupation disease of school teachers and adds to the school strain of children. It also occurs among the occupation diseases of regular army officers and others in authority. Its worst effects are, however, seen in the domestic circle.

THE PATHOGENESIS OF ACROMEGALIA.

Since Marie, in 1886, first described acromegalia as a morbid entity, it has continued to awaken interest and its literature has steadily increased. Marie's first account, based on two cases in Chareot's wards at the Salpêtrière, was exhaustive and left little to be added by later investigators except explanation of its pathogenesis. Under other names the disease was recognized long before Marie's day, for Sternberg has gathered several undoubted cases from literature as far back as 1552. One of Carl von Langer's two classes of gigantism, first announced in 1872, is clearly acromegalia. In 1884 Fritsche and Klebs described a characteristic case, but as an unknown disease. Since Marie's first systematic and accurate description, many reports of cases and explanations regarding its nature have been made.

Of the etiology or its predisposing causes practically nothing is known up to the present time. Its symptomatology is, on the other hand, so well known that nothing further need be said of it here. Its treatment offers little that has hitherto proved satisfactory.

The special interest in the affection at the present moment centers in its pathogenesis. The question, together with a masterly consideration of the whole subject, is discussed by Harlow Brooks of the Pathological Institute of the New York State Hospitals, in an elaborate monograph published in the *Archives of Neurology and Psychopathology*, vol. i, No. 4, 1898, issued in July, 1899.

Many theories have been elaborated to account for the phenomena of acromegalia. Of these the author discusses seven, but clearly shows that none of these explanations cover all of the phenomena of a typical case, or are sufficiently constant to warrant their acceptance, except these which have to do with the pituitary gland.

After elaborately considering the comparative anatomy, embryology, histology and physiology of this gland, the writer passes at once in *medias res* in the sentence: "it is manifest that the only reliable key to the unraveling of this rather chaotic mass of morphological alterations in the hypophysis obscuring the pathogenesis of acromegalia is on the basis of function." This is because the great variety of lesions found in the hypophysis can bring about the acromegalic condition only by coincident changes in the gland's functions. If the quantitative changes in the secretion be the basis of consideration, the lesions fall naturally into two groups. The first are those which cause, or are associated with, diminution or suppression of its functions; and the second, those which cause or are associated with its increase. The former include various tumors tending to replace the parenchyma of the prehypophysis as well as degenerative and distinctive lesions of all sorts. The latter include the hyperplasias and adenomas of the prehypophysis.

Rogowitsch, Marinesco and Marie seem to have adopted the theory of atrophy and suppression of the prehypophyseal function, using the thyroid gland and the rôle it plays in myxedema as an analogy. Brooks declares that such an explanation is "flatly contradicted by definite and reliable facts;" for as in a case cited by McAlpin, the entire pituitary body was completely destroyed by a sarcomatous growth, without an approach to any characteristic acromegalic phenomena. The testimony afforded by Boyce and Beadles, as well as the experimental evidences of Vassale and Sacchi, of Horsley and of others, all tend to disprove the atrophic theory. The "error lies in the fact that these instances of sarcoma of the hypophysis in acromegalia are not sarcomata at all. In such cases hyperplasia has been mistaken for sarcoma."

This leaves, then, as the only tenable explanation of acromegalia, hyperplasia including adenoma of the prehypophysis, with an increase of its function and of its functioning cells. The hypersecretion theory was first brought forward by Tamburini, and is not in the least weakened by reason of the so-called compensatory hypertrophy of the pituitary gland occasionally observed in myxedema. In myxedema the increased function of the prehypophysis is only relative, supplying a deficiency of the thyroid secretion, whereas in acromegalia there is an actual increase of prehypophyseal secretion. The relation of this increased pituitary function to the connective-tissue growth, to parenchymatous degeneration, and to the nervous system, is most interestingly and minutely discussed.

THE JOURNAL AND THE CANADIAN MEDICAL ASSOCIATION.

Those in attendance at the meeting of the Canadian Medical Association, held in Toronto, Ont., last week, were profuse in their praise of the enterprise displayed by the JOURNAL in the early publication of the proceedings. They also expressed astonishment at the short period of time which elapsed between the close of the first day's session and the receipt of the printed report. The Association assembled on Wednesday, August 30, and early on Friday morning, September 1, a copy of the JOURNAL containing a complete report of the day's proceedings was handed to each member in attendance.

A CORRECTION.

Dr. Ira Von Geison, of the New York State Laboratory, has repudiated the statements attributed to him in a New York paper, which were editorially noticed in this JOURNAL some weeks ago. His disclaimer, which we are glad to see, is printed in the July issue of the *American Journal of Insanity*, which has just appeared. It is not always safe to treat statements made with the circumstantiality of that of the New York journal as beneath notice, and if Dr. Von Geison had not made this correction the world would have been justified in thinking that the interview was authentic. It would have been better all around if the correction had been made more promptly after the publication.

AN ENFORCED ANTI-SPITTING LAW.

The anti-expectorator ordinance in San Francisco seems likely to hold its own and to be enforced without fear or favor. One offender, who is reported to be a millionaire, has had to undergo his punishment, and the repetition of the offense only made it more severe. If this is not merely an indication of a "sand lots" prejudice against millionaires, and if like even justice is dealt out to the hoodlum who deserves it, as well as to every grade between, San Francisco is to be congratulated. The prohibition of indiscriminate expectoration is one of the most reasonable hygienic regulations, and has, moreover, the advantage of being cosmetic as well as sanitary. It is to be hoped that this pervasive nuisance can be legally checked elsewhere as well as in San Francisco.

THE CENTURY'S ADVANCE IN PHYSIOLOGIC PSYCHOLOGY.

The September issue of *Harper's Monthly* contains an article by Dr. H. S. Williams, on "The Century's Progress in Physiological Psychology." There is certainly a large amount of material for such a review, and Dr. Williams appears to have fairly utilized it. We know vastly more than formerly about the functions of the brain, and the latest developments of our knowledge of its anatomy are suggestive in many ways. We have also become able to measure and register our sensations and have reduced some facts thus obtained to their mathematical expression; methods have been improved and a vast store of facts obtained, but after all we are not so very much nearer an understanding of the real nature of our mental action than before. In fact, as Dr. Williams shows, some of our advances are really only experimental verifications of ideas theoretically

advanced many years prior to the beginning of the present century. The quality of mind does not necessarily appear to have improved, though we may know more of its correlated mechanisms. As a popularizer of scientific subjects Dr. Williams is a success, and his paper will open up to a large section of the reading laity a wide range of scientific thought.

EXTRAIESTINAL INFLAMMATORY LESIONS CAUSED BY TYPHOID BACILLUS.

W. T. Howard, Jr.,¹ points out that among the many typhoidal and post-typhoidal inflammatory lesions in various extraintestinal organs, a considerable number are now known to be caused by the bacillus typhosus, either alone or mixed with other bacteria. He reports three cases of this sort, and states that he has been able to collect 144 cases from the literature, in which the typhoid germ was present in inflammatory foci outside of the intestines; in 20 other cases mixed infections were present, making a total of 164. While some of the older cases are open to doubt, in all the recent ones the Widal test was applied, and in consequence the diagnosis is conclusive. The typhoid bacillus is, therefore, a frequent and important cause of the complications and sequelæ of typhoid fever; in some cases it also causes infectious processes without the necessary presence of typical lesions.

THE TESTIMONIAL AND THE MEDICAL PRESS.

A fine line lies between the testimonial to the effectiveness of a remedy that the manufacturer obtains from the physician to aid in selling the product, and the honest report on the utility of a new agent, derived from the painstaking observation of the clinician whose only aim is to assist his fellow-practitioners in arriving at a correct estimate of the remedy. The line of demarcation can not always be discerned in the face of the testimonial, but can invariably be discovered in the professional reputation and standing of the giver. Unhappily the latter can not often be generally known among the 125,000 physicians of the United States. There remains then as a guide for the reader only the character of the medical journal in which the testimonial appears. Unfortunately there are too many journals which sin in this respect, and still more unfortunately the profession in most cases does not closely discriminate between the wheat and the chaff among its periodicals. We should, however, invariably eschew those journals that devote much space to testimonials of whatever kind as to the effectiveness of proprietary remedies. The clean medical journal does not admit to its columns laudatory articles concerning proprietary remedies, and there is no temptation to laud unduly preparations the making of which is open to all pharmacists. If one cares to read such testimonials, he may be sure that the manufacturer will not cease to keep his desk full of reprints of them.

THE ETIOLOGY OF CIRRHOSIS OF THE LIVER.

Hyperplasia of the interstitial connective tissue of the liver, with secondary contraction, results essentially through the agency of irritating influences conveyed

¹ Philadelphia Medical Journal, July, 1899.

to the organ through the portal vein or the hepatic artery, possibly also through the bile-duct. These influences are principally either toxic or bacterial. Of the former, some are derived from without, as alcohol, cad and highly irritating foods. Bacteria may cause cirrhosis in part directly and in part indirectly, through the poisons they generate. Other toxic substances, generated in the intestines as a result of fermentative processes, or resulting from deficient functional activity of certain organs such as the liver, the kidneys, the skin, may also contribute to the development of hepatic cirrhosis. Sometimes no etiologic factor can be determined. As the irritating cause reaches the liver either through the portal vein or through the hepatic artery, the type of the resulting diseases will vary accordingly, with the development on the one hand of the lesions and symptoms of ordinary portal or atrophic cirrhosis, or on the other of biliary or hypertrophic cirrhosis. Cirrhosis of the liver may also arise in consequence of circulatory or biliary stasis, or of the presence in the blood of particles of dust. The most commonly accepted cause of hepatic cirrhosis is alcoholism, but in a discussion of this subject Rolleston¹ contends that alcohol does not induce cirrhosis directly, but rather by leading to the production of sclerogenic poisons or by enabling such poisons to exert their pernicious activity on the liver.

YELLOW FEVER.

No sooner have we realized that the yellow fever is under control at Hampton, Va., than the news is flashed over the United States that it has developed in at least three other localities. And these cases can in no wise be traced to Hampton. One suspected case, fatal, is reported from Knox County, Ind.; others are at Key West and New Orleans. The probability is that all these cases can be traced to Cuba, although but little of the disease seems to be prevailing there. It has been expected, and we have so claimed in these columns, that hereafter hygienic laws would be enforced, and the disease kept out, or at least would be kept under control. We have no reason to change our views. A complete sanitary inspection of the islands can not be made in one season, nor can the requisite hygienic measures be carried out in a few short months. The rigid measures which have been adopted, and which are being extended throughout the islands, will, it may be expected, completely wipe out the disease. The result of the work already done is so evident that still more energetic measures will do the rest. As far as the present outbreak in this country is concerned no fear need be felt. The active measures put forth so quickly after the appearance of the disease, together with the lateness of the season, remove all possibility of its spread. The marine-hospital service, by its action in its management of the outbreak at the Soldiers' Home, and by its energetic work at the present time, shows that this bureau is always on the alert, and prepared to do active work when required. This is necessary so long as there is any disease in any part of Cuba, for, with the greatly increased intercommunication, a rigid quarantine against all the ports is almost an impossibility. It must not be forgotten, also, that the

present epidemic, especially as far as New Orleans is concerned, may have had its origin on the Isthmus of Tehuantepec or at Vera Cruz, where the disease is prevailing.

MICROBES IN MILK.

The question of milk infection has been prominently to the front of late, especially in connection with tuberculosis. It is a matter of some little interest, perhaps, to know that bacteria are pretty generally present in milk, even before it is drawn from healthy cows. Some of the earlier observers who recognized this fact maintained, nevertheless, that these organisms only existed in the lower milk-ducts, the teats and the lower part of the cistern, and that the last milk drawn was sterile; in other words, that the infection was probably from without, in the normal condition. Later observers have not confirmed this view and in the last volume of the "Transactions of the American Microscopical Society," Mr. Archibald Ward reports some tests that appear to be conclusive. Not satisfied with making cultures from the milk drawn under antiseptic precautions, he, in connection with Dr. V. A. Moore, made bacteriologic examinations of the milk from the remoter glandular tissues of the udder, the samples being taken under due precautions immediately after slaughtering the animals. Bits of tissue were also detached with flamed scissors, and transferred to culture-media by the aid of a flamed platinum loop. In the cultures thus obtained it was found that the same organisms frequently occurred in the fore milk and in each of the three parts of the udder, and that in all of the six apparently healthy cows thus examined there were found bacteria in the depths of the milk-secreting tissue. Most of the pure cultures were found to belong to some one of three species of micrococci, and Holmes concludes that these organisms are pretty constant inhabitants, and if reduced in number by one milking, enough are left to produce the original abundance before another. The practical bearing of these findings is obvious. If normal milk is never sterile, it is quite possible that it may not always contain only innocuous species. Indeed, in one cow Ward found a streptococcus rather persistently present, and in another a culture of bacillus prodigious introduced into the milk cistern was detectable for six days. The chances of udder infection from without are numerous, and further study of milk bacteriology at its source is very desirable.

THE ASSOCIATION BUTTON.

After considerable delay, the ASSOCIATION button is now ready. It is in every way attractive, handsome, and above all, appropriate, and for the reason that a large number were ordered at one time, can be sold at the low price of one dollar. It is hoped that every member of the ASSOCIATION will place one of these adornments on the lapel of his coat before the snow flies, and to assist in bringing about this much desired result, an offer is made in our advertising columns. We refer those who are anxious to help build up the ASSOCIATION to the offer there made. It will not be inappropriate to quote from the report regarding this button, made to the ASSOCIATION at Denver a year ago by

¹ Quarterly Medical Journal, 1896, p. 239.

Dr. Richard French Stone. Dr. Stone obtained letters patent for the leading features of the design, which patent he has turned over to the ASSOCIATION. The following is from his report: "We can readily see how the wearing of such means of permanent identification might be of much service in arousing a spirit of fellowship that would be helpful in bringing the members of the ASSOCIATION closer together. It would serve to fix attention and direct thought to the interest of the ASSOCIATION during the intervals between the annual meetings, and would prove suggestive of matters pertaining to its growth and development. To meet this requirement I herewith send you for consideration and adoption what is believed to be an appropriate gold and enamel finished emblem. Please observe that the device is in the form of a circular shield, having for its central feature a spear-pointed cross, opposite to the arms of which are the initial letters of 'Member of the American Medical Association.' The circular shield and spear-pointed cross typify the protective armor of the period in which medicine had its origin. The cruciform center not only typifies the great advancement of the profession during the Christian era, but was also the ideographic sign or symbol of life and of the 'Healing Art' in ancient Egypt, Greece, Rome and other nations of the greatest antiquity. The initial letters and the enameled national colors (red, white and blue), sufficiently symbolize the nationality of our ASSOCIATION. For these reasons it is believed that the design represents the origin, history, traditions and province of our profession, as well as the national character of our organization in the fullest sense, and that the emblem constantly worn as an ornate coat-lapel button (or scarf-pin), will serve at all times and on all occasions throughout the world as a distinctive method of social and professional recognition, thus securing the many advantages resulting from this identity."

SANARELLI'S AUTOBIOGRAPHY.

One of the enterprising New York dailies had in its last Sunday's edition a history of the alleged discovery of the yellow-fever bacillus, written by the discoverer himself, Sanarelli. While it is hard to believe that any one, much less a true scientist, would write in such a self-laudatory style, still we are compelled to believe this in this instance, for the article is introduced with an editorial statement to the effect that it "was written by Prof. Giuseppe Sanarelli, and it may be considered the first authentic autobiographic statement made by the discoverer of the bacillus of yellow fever." The writer states that he was born at Monte, Sept. 20, 1865, and that after preparatory studies, he entered the University of Siena, that his graduation thesis had for its subject the etiology and pathogenesis of morose infection, "which thesis I am proud to say was afterward printed and published at the expense of the government." Sanarelli then tells us that after his graduation in 1889 he went to Pavia to study under the "famous Professor Golgi," then to Munich, and from there to Paris. During this time he published many valuable monographs "which are well known to all students of bacteriology." He tells us that his rise was now rapid, for at 29 he was called to the chair of hygiene in the University of Siena, and soon afterward, in 1895, he was

invited to the University of Montevideo, Uruguay." "And let me here say that, if I left a brilliant position and still more brilliant career in my mother country to accept the invitation of the Montevideo University, it was because I hoped in the new world to face and grapple the great problem of exotic pathology, which had occupied and tormented me for a long time—the problem of yellow fever." He then refers in a half sneering way to Drs. Sternberg and Friere's long-continued efforts to discover the germ of yellow fever. Speaking of the former, he says: "At the end of ten years of labor he declared his mission accomplished and published a minute and detailed report, which resulted in showing failure and insuccess." Of Friere's labors he says: "he was compelled to publish a report devoid of all scientific interest or importance." Then the writer tells the world what brilliant work he did in a short time: how in June, 1897, he communicated his discovery to the scientific world, and how his success created great surprise, and caused many to be incredulous. And so on. He closes his communication by stating that he rejoices to learn that the United States, after an excessive period of inactivity, is commencing to do something toward emancipating itself from that dread scourge. "My personal satisfaction is great, for this awakening and consequent acting will save me from the fate of the majority of the scientists of my country—the fate of recognition and justice after death." The whole article reads so much like the writings of a quack that we feel loath to believe that it is really printed as Sanarelli wrote it. The great big "I" and little "u," the self-praise, the conceited references to his own work, not only in the investigation of yellow fever—for he claims to have revolutionized the views held as to the etiology and pathogenesis of other diseases, especially typhoid—and the sneering supercilious manner in which he alludes to others, make one feel like pitying him. If a young man only 34 years old had accomplished all and more than Sanarelli claims to have accomplished he could only lower his reputation by such self-praise. Allowing for a certain foreign ignorance of American ideas of propriety, this effusion still leaves behind it a rather unpleasant impression of his personality.

Medical News.

DR. JOHN T. MANGE of Baltimore has been elected chief of the gynecologic clinic of the Baltimore University School of Medicine.

THE GOVERNMENT hospital ship *Relief* has been condemned by the local inspector of steam vessels at San Francisco. The vessel was pronounced unsafe for ocean travel.

THE APPEARANCE of yellow fever in New Orleans, it is said, is reviving the rigid quarantine regulations which have caused in the past so much disturbance of business and other matters in the South. However, only two cases have thus far been definitely reported, with one death.

MRS. MARY SANSONI, a leper, who has offered those interested in leprosy a chance to study the disease, died in Baltimore last Tuesday, aged 32. She had been isolated in a hospital in Baltimore for two years.

LATEST reports are to the effect that yellow fever is spreading at Key West. Five deaths have occurred.

DR. A. T. HAIGHT, Chicago, has just returned from Europe. He attended the International Otological Congress and read a paper before that body.

MUNCIE, IND., has no hospital, but the physicians and the public-spirited citizens there are agitating the question of building one, and it is hoped that the city council will act in the matter and either build or assist in building one.

NEWS by way of Madrid states that one case of the plague has developed in the prison at Oporto. Much uneasiness exists at the infected place relative to the sanitary cordon maintained, and already one of the guards has been shot from ambush.

ON SATURDAY, September 2, the Chicago Lying-In Hospital, 294 Ashland Ave., opened its doors to the public. Emergency cases from any part of the city are received there at any time. The president of the Association, having the institution in charge, is Mrs. E. C. Dudley, 1619 Indiana Ave.

THE PORTUGUESE steamer *Oceunum*, from Oporto, Lisbon and St. Michaels arrived in New York on September 1, having on board ten cabin and fourteen steerage passengers. Owing to the existence of the bubonic plague at Oporto the vessel was ordered to the quarantine station for disinfection.

THE FOUNDATIONS are being laid for the construction of a new annex to the Isabella McCosh Infirmary of Princeton College. The building will be three stories high, and constructed of limestone and brick. It will be used for contagious diseases. When completed the additions will have cost about \$20,000.

PROF. WILLIAM F. SMITH has resigned the chair of anatomy in the College of Physicians and Surgeons, Baltimore, on account of ill-health. Dr. Isaac R. Trimble has been elected to fill the vacancy. For some years Dr. Trimble has held the chair of anatomy and clinical surgery at the Woman's Medical College.

ANOTHER death attributed to Christian Science treatment has occurred in Seranton, Pa. Death is said to be due to cholera infantum, and the mother, being a Christian Scientist, refused to call a physician. The funeral was announced to have taken place on August 27, but the services were prevented by the coroner, who ordered an investigation made.

It is reported that Dr. Andrew von Grimm, adjunct professor of diseases of children at the Post-Graduate Hospital of New York, while recently performing an operation on a child suffering from diphtheria had the misfortune to be severely bitten on the finger, from which septicemia subsequently developed, and at last accounts his condition was pronounced serious.

THE MEMBERS of the Andrew G. Curtin Association of Army Nurses held a meeting in Philadelphia on August 28, to take some action relative to the entertainment to be given the members of the National Association of Army Nurses of the Civil War, and who were to be in attendance at the G. A. R. encampment held in that city. A tablet will be erected at Fernwood Cemetery in memory of deceased members.

JUDGE GAMBLE of Iowa who recently delivered a decision in the case of a traveling practitioner, that the Medical Practice Act of the State was unconstitutional, has sent his opinion to the State Board of Health. He bases his opinion on certain New Hampshire cases, and declares the law class legislation. The attorney-gen-

eral, it is said, maintains the validity of the act and the supreme court will have to make the final decision.

ALTHOUGH the city of Philadelphia and other cities of Pennsylvania have dispatched a vessel laden with supplies to the distressed of Porto Rico, which has been fitted out at a cost of thousands of dollars, it is now proposed that another similar one be sent to that country. Already contributions are pouring in, the latest being a gift of \$1000 by the citizens of Erie. The sum now on hand amounts to \$30,243.21.

IT IS SAID that the Illinois Society for the Prevention of Consumption is preparing plans for the establishment of a state sanatorium for the treatment of this disease, and a bill will be introduced into the next legislature for an appropriation for this purpose. The movement, it is said, has the support of Governor Tanner, and the forthcoming report of the State Board of Health will give the facts of the needs of the State of Illinois in this direction.

ACCORDING to the *San Francisco Examiner*, Dr. Alonzo Taylor of the University of Pennsylvania, will become the head of the Department of Medicine in the Affiliated Colleges of the California State University. Dr. Taylor, it is said, will make a special study of the requirements of the medical department as to equipments, etc., and will then go to Europe and spend some time in gaining ideas and facts from the best German universities.

JOSEPH FUNK, a resident of Philadelphia, has secured a writ of habeas corpus against the attending physician to the Municipal Hospital of that city to show cause why his two children, suffering with scarlet fever, who he avers were removed from his house without his consent and against his will, should not be taken away from that institution. Judge Pennypacker, who granted the writ, made it returnable on Friday, September 8, when the complaint was to be heard in open court.

BY ORDER of Surgeon Anita N. McGee, in charge of the army nurses, instructions have been issued regarding the kind of uniform to be worn by them. The uniform consists of a waist with adjustable cuffs, and an apron of white linen, worn with a skirt and necktie of army blue galatea. A jacket of the galatea style is also provided. Caps are not to be worn. Chief nurses are entitled to wear in place of the apron a sash of red silk, knotted around the waist. The badge of the nurses' corps consists of a modified form of Greek cross.

ON AUGUST 29 the coroner's jury in the inquest into the death of James McGuire, a paretic patient in the Manhattan State Hospital for the Insane, on Ward's Island, rendered a verdict to the effect that his death was caused by undue violence at the hands of three attendants. The coroner committed the three men to the Tombs, to await the action of the grand jury, while another attendant was sent to the House of Detention as a witness. In view of the medical testimony presented at the inquest this action certainly seems unnecessarily harsh, but at the same time it is only proper that every case of this kind shall receive a very thorough investigation.

A SLIGHT epidemic of anthrax among cattle has appeared in southern Chester County, Pa. In one herd five cattle have died. The disease has also appeared in the region of Chambersburg, four cattle and two horses having died within the past few days. It is now feared that one of the owners of the cattle may have been inoculated with anthrax while burying an animal affected

with the disease, for at present he manifests symptoms of the disease and his condition is serious. An epidemic disease, the cause of which is as yet unknown, also exists near Allentown, Pa. Among a herd of 200 Jersey cattle belonging to one farmer, 70 afflicted animals have died. In some respects the affection is said to resemble anthrax.

AN INSTITUTION peculiar to Philadelphia is The Philadelphia Medical Corps. Organized in 1887, it did excellent service in connection with the centennial celebration of the constitution. It has its volunteer surgeons on hand at every great gathering to do gratuitous service when called on in an emergency. During the Peace parades last year its services were especially noticed. At the Grand Army Reunion, held during the past week, the value of this organization was to be again tested. It is a purely philanthropic organization, receives no rewards and asks no aid except occasionally calling on a bystander for help in special cases. It is, therefore, a credit to the city and one that should be duly appreciated.

THE "CHRISTIAN SCIENTISTS" held a meeting in Jersey City recently and, according to the *Buffalo Medical Journal*, some remarkable cures were reported. One of these was vouched for by an old woman, who, prefacing her remarks with a statement of her undying belief in the efficacy of prayer, said she knew a man in Texas who had spilled acid in his eyes. The eyeballs were so badly injured that both were removed by surgeons. The owner of the eyeless sockets became a believer and by means of prayer new eyeballs grew, and now the man can see as well as anyone. No wonder these people get patients, when they can perform such remarkable feats. We are patiently waiting for the raising-of-the-dead report.

A CURIOUS fact is reported by the *Medical Press and Circular* in regard to the assault on M. Labori, Dreyfus' counsel. He was in charge of Dr. Réclus, a distinguished French surgeon, who was called by the family. Among those who shared in the excitement on the night of the attempted assassination was M. Doyen, another prominent French surgeon, who immediately seized his instruments and took the next train for Rennes and succeeded in obtaining an interview with the patient, which, it is said, was not allowed to take a professional turn, though in taking leave "he placed himself at the patient's disposal." The action has stirred up an ethical controversy in which, it is said, Dr. Réclus very emphatically expressed his opinion.

ACCORDING to the official report of Surgeon-General Wyman, pilgrims returning from Mecca have been attacked by bubonic plague, which is said to have been due to inexcusable negligence of taking even the ordinary precautions against the disease. It is said that the danger of the spread of contagion is especially great at the second annual pilgrimage, because those who return must first undergo examination at the quarantine stations. In order to evade these requirements many of them escape into the surrounding countries, thus conveying the disease in all directions. It is further stated that on board a vessel loaded with 1200 pilgrims there recently occurred four deaths, which were unmistakably due to bubonic plague. The Turkish health authorities are much afraid that the disease will be carried to many districts by rats and vermin, hordes of which swarm around the vessels of the carrying trade. The plague now exists in the following different countries: Japan, China, Egypt, India, Persia, Turkey and Portugal.

MEDICAL STUDENTS ACCUSED OF PRACTICING FRAUD.—*The Philadelphia Press*, in its issue of September 3, contains an accusation which if proved to be true will react very unfavorably on the candidates who recently passed the examination prescribed by the Board of Medical Examiners of Pennsylvania. This paper charges on information furnished it that the students of at least two of the medical colleges of Philadelphia had been provided with all the questions asked by the Board previous to the examinations. It is not definitely known as to how the questions were obtained, but the idea is hinted at that the sum of \$500 was placed in the hands of the printer at Harrisburg, and that the questions were then transferred to probably one of the students, representing a clique, to be subsequently sold to the candidates intending to present themselves before the State Board of Medical Examiners. It is charged further that these questions were circulated widely. A recent graduate in medicine—whose name is not given—stated that papers containing the whole set of questions were offered him for \$2.50.

Correspondence.

Inebriety a Disease.

HARTFORD, CONN., Aug. 26, 1899.

To the Editor:—The question of vice and disease in inebriety was first agitated in this country by Dr. Rush of Philadelphia, in 1809. He asserted that all inebriety should be regarded and treated as disease. This was called a wild, infidel theory. In 1829, Dr. Todd secured the passage of a resolution in the Connecticut State Medical Society, declaring inebriety a disease requiring medical treatment. This was termed rank heresy and so bitterly denounced that nothing more was heard of it. In 1854, Dr. Turner's project of an asylum for the medical treatment of inebriates as diseased, roused a more severe criticism. This continued with varying intensity until 1870. At this time the Association for the Study and Cure of Inebriety was organized, and its declaration of principles pronounced inebriety a disease, and curable. The religious press denied this with great bitterness, and denounced the Association and its members as enemies of truth. The medical press followed with sneers and contemptuous silence. Even the temperance advocates joined in denying the disease theory. These extreme criticisms and denials of disease finally reacted into a half vice and half disease theory, which is urged by many persons up to the present.

The publication of the *Journal of Inebriety*, in 1876, was the occasion for a new outbreak of most acrimonious criticism. For several years the *Journal* and its writers received, with each issue, what was intended to be a destructive criticism and condemnation of its purpose and work. As chairman of a committee appointed by the Association I personally urged the leading opponents of the disease theory to present the evidence of the vice origin of inebriety in a scientific form for publication in the *Journal*. Beyond a few dogmatic statements of opinions, nothing was offered, while on the other side over fifty physicians presented the history of cases and studies of the various physical conditions and causes of the disease of inebriety. For over twelve years many facts were grouped and examined in the issues of the *Journal*, and in other publications. The conclusions were so unanimous that further discussion was useless. Hence, from 1890, little attention has been given to the former denials and assertions of the vice origin of inebriety. Yet moralists, clergymen, and occasionally a sadly belated physician, refer to the topic again as if it was new, and the advocates of the disease of inebriety were all ignorant extremists. They are unaware that all these theories and opinions

have been settled by an appeal to the facts, and the question is, what are the teachings of these facts, not the opinions of the advocate? This is a curious repetition of the same criticism which has followed the recognition of the disease of insanity. Six years ago a noted divine denounced the physical origin of insanity, and declared that vice and wickedness were the most common causes. Less than three years ago a physician urged that the insane were pampered and made worse by luxuries, and that insanity was more vice than disease, and that harsh remedies were the true means of treatment. By some persons inebriety is regarded, in the same way, as a vicious indulgence of the appetites, which can be checked at any time. Fortunately the questions of acts and conduct are not settled by theories and opinions. The study of the inebriate is a question of facts and their meaning, which every year is clearer and can be determined with more exactness. If there is a case of vice origin in any inebriate it can be proven with a great degree of certainty, and the *Journal of Inebriety* will gladly publish all such records. They will be new to the scientific world.

T. D. CROTHERS, M.D.

The Neurotic's Diet.

NEW YORK CITY, Aug. 31, 1899.

To the Editor:—The article entitled, "The Neurotic's Diet," by Henry C. Eyman, M.D., is good reading, and I shall reproduce it with due credit in the *Dietetic and Hygienic Gazette*. Dr. Eyman says: "There is no doubt of the efficacy of raw meat, dry bread and hot water, exclusively in the very common acid dyspeptic states, while plethoric individuals with irritated kidneys and the neuralgic twinges of the uric acid condition, will just as surely obtain relief by the use of farinaceous food and nuts."

Who uses raw beef when he can obtain it cooked? What physician is foolish enough to prescribe a food uncooked, unpalatable, not in a condition for digestion and liable to provoke the presence of tapeworm in the body? Occasionally I come across this statement of the use of raw beef; physicians also ask, "how do you get your patients to eat raw beef?" The reply is that I never ask them to, but, when it is necessary to feed a patient closely on beef preparations, I have them broiled and palatable. I understand that in some of the European sanatoria inmates are stuffed with raw beef; this is hard treatment and unnecessary. Are any American physicians doing it?

As to "plethoric individuals with irritated kidneys and the neuralgic twinges of the uric acid condition," I have found such to do better on beef foods with the careful admixture of other foods, watching the blood and urine under the microscope.

Yours fraternally,

JOHN A. CUTTER, M.D.

London.

(From Our Regular Correspondent.)

LONDON, Aug. 22, 1899.

THE OTOLOGICAL CONGRESS.—This congress held in London the past week, under the presidency of Dr. Urban Prichard, had a most successful meeting, 300 aurists from all over the world, having been in attendance. Such names as Politzer Knapp, Hartman, Luc, Macewen, Malherbe, adorned the program, and so great was the pressure of papers that extra sessions had to be held to accommodate them all. Many of the foreign delegates came the week before and attended the British Medical Association at Portsmouth. The social side of the gathering was most elaborate; congratulations were sent to the Queen, and the festivities closed with a visit to Windsor and an entertainment on the prettiest part of the River Thames, by Dr. Field.

One of the most amusing things about the Congress was the frank and outspoken astonishment of the lay press that such

a large body of scientists could assemble from such remote distances, merely to discuss such a limited subject as diseases of the ear. The newspapers were never tired of referring to "Specialism Ultraspecialized," and wondering more or less openly and naively how the members were going to fill up their time in session. As the frank and innocent *Daily Chronicle* expressed it: "To the mere layman it is almost incredible that diseases of the ear should command the minute attention of a holiday-making crowd of highly cultured gentlemen addressing each other in all the languages of Europe for six hours a day during an entire week!" The superbly sesquipedalian terminology of the science impressed them hugely, chiefly because it was hopeless to attempt to understand it, and they noted with awe that all this prodigious accumulation of learning has been created within the past fifty years. Perhaps there was some show of reason for their astonishment, as it must be confessed that this new branch of the medical art, hopeful and valuable as its work has been, has so far not yet made itself illustrious to the popular eye by its practical triumphs.

There was a singular dearth of specially striking papers read on new discoveries announced during the session although the general standard of the communications was high and the discussions were most animated. The chief advances noted by the president in his address were in prophylaxis of chronic middle-ear trouble and greater mastering of suppurative otitis, especially with reference to preventing cranial complications. Hartman, at Berlin, reported two interesting cases of congenital absence of the external meatus and one acquired atresia of the meatus resulting from post-scarlatinal suppuration. The entire morning was given up to a discussion on the always exciting and somewhat venerable question of when to open the mastoid in chronic suppurative otitis media; an operation which is claimed by the general surgeon nowadays as belonging to his sphere. The museum was superb, the British section alone containing over 2000 preparations.

CONTROL OF OYSTER BEDS.—The failure of Mr. Chaplin's excellent bill for the control of oyster beds is a source of much regret to the English profession and to sanitarians generally. It came by its death in that belated survival of the Middle Ages, analogous to our intelligent and disinterested Senate, the House of Lords. The report of the now famous commission on oysters as a cause of disease was clear and urgent enough to secure for the bill a large majority in the House of Commons, but of course had little weight. It was killed by an amendment which referred its carrying out to a board of fisheries which has no jurisdiction over nearly half the areas in which beds are laid in the kingdom and these areas the most liable of all to pollution by sewage.

PROFESSOR OGSTON'S INDICTMENT OF THE ARMY AND NAVY.—The bold and vigorous indictment of the army and navy authorities for their contemptuous treatment and inadequate provision for the medical staff, by Professor Ogston, in his address in Surgery at Portsmouth, is still being widely commented on. Indeed, the unfavorable impression produced by it is both widening and deepening as the controversy goes on, and it really looks as if the sluggish authorities would have to take action in the matter and that speedily.

UN SOUND TEETH AND THE ARMY RECRUIT.—The announcement that over seventeen hundred English recruits were rejected on account of the condition of their teeth sounds appalling, until we discover upon inquiry that this apparently large number was the residuum of nearly 80,000 examinations, or barely 2 per cent. of the men examined. And as it only takes three badly decayed or missing teeth to disqualify a recruit, the bubble of physical degeneracy, so far as this proof of it goes, collapses into its constituent thin air and froth. We have long been most suspicious of the popularly accepted dictum, that our modern teeth are degenerate and degenerating. It is one of those pseudoscientific conclusions which sound well, harmonize with all our traditional nonsense—dating from the glacial epoch—about "these degenerate days" and man's fallen estate, and hence appeal powerfully to the popular mind.

Canada.

(From Our Regular Correspondent.)

TORONTO, Sept. 3, 1899.

CANADIAN MEDICAL ASSOCIATION.—The largest, the most enthusiastic, and the most profitable meeting ever held in the history of this organization was that which after "three days of solid enjoyment" closed its final session at 1 o'clock on Saturday morning. Contrasting the numerical representation with that assembled in the city of Quebec last year, over three times as many delegates were present at this year's meeting as at the last annual assemblage. From the moment Dr. A. J. Johnson, chairman of the committee on arrangements, announced the entertainments that the committee under charge of Dr. Bruce L. Riordan had arranged for the enjoyment of out-of-town members, the visitors completely abandoned themselves to a pleasurable participation in the several functions. On the evening of the first day, the beautiful halls and apartments of the museum of the Normal School were thrown open; a fashionable company soon surged and thronged through its magnificently spacious compartments, invitations having been extended to many of the city's best-known families. A musicale and reception was held in the theater, presided over by the chairman of the committee on arrangements. In his usual eloquent and brilliant style, Dr. G. W. Ross, Minister of Education of Ontario, welcomed the members and their friends to those time-honored and classic halls; in the name also of the Ontario Government, of which he is an acknowledged leader, he welcomed the representatives from the other provinces of the confederation and spoke of the mighty factor for good the physician was in the community. Mr. Cameron, president of the Association, made a particularly happy acknowledgement.

The afternoon of the second day was close and oppressive, which proved a decided incentive to a pleasant sail across Toronto Bay to the island home of the Royal Canadian Yacht Club. On one of their extensive lawns, a marquee had been erected, within whose shady bower, seats and tables were tastefully arranged, for the enjoyment of those good things, cool and nice and dainty. The city's "society" physicians and their ladies contributed to making this function very successful. The city fathers also showed their hospitality and good cheer. The steamer *Chippewa* was chartered by the City Council and an enjoyable sail around the island and out into the lake on the evening of Thursday was greatly appreciated by members from a distance. About 9:30 the vessel stood off at anchor from the grounds of the Industrial Exposition, where a magnificent view was afforded of the nightly fireworks and the battle of Omdurman. On the afternoon of Friday, the directors of the exhibition invited the various committees and the officers and visiting members from the other provinces and the United States to luncheon; and all the members of the Association and their wives and lady friends, together with the delegates from abroad were given free passes to the grounds, with reserved seats on the grand-stand, where a delightful performance in the ring, with both running and trotting races, caused the profession to forget sorrow and the heavy work of the morning session. The Toronto Golf Club also extended its hospitality to the members.

The splendid array of pathologic specimens reflected deserved credit on the chairman of that department, Dr. A. Primrose, Toronto. Trinity Medical College, the Medical Department of Toronto University, McGill University and private members loaned specimens which proved instructing and interesting.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.—On all sides were heard expressions of pleased surprise at the commendable enterprise displayed on the part of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION in having a copy of its issue of Saturday, September 2, containing a telegraphic report of the first day's proceedings, placed in the hands of each member of the Association present at the beginning of the morning session of the third day, September 1.

DOMINION REGISTRATION.—On the third day Dr. Roddick dealt in detail with a Dominion federated council. Each province is to be represented on the central board by three members. The committee recommended this plan of giving equal representation rather than the plan of representation by population. All the provinces are to retain their present systems, their respective medical councils not being interfered with in any way whatsoever. Should a physician become licensed to practice, for instance, in the Province of Ontario, he needs no other license so long as he desires to continue in that province; but should he desire to have the privilege of practicing in any other province of the Dominion, he must obtain his authority to do so from the central licensing board, to be situated presumably at Ottawa, the capital of the Dominion of Canada. All practitioners in any province of the Dominion, who have held their licenses to practice for at least ten years, may at any time after the adoption of this scheme by the Parliament of Canada, present themselves before this board and obtain licenses to practice in any province of the Dominion; but should a physician only be in practice, say for seven years, he will have to wait three more years before he can obtain such a license. This seemingly retroactive clause applies to present licentiates. The bugbear in the whole matter seems to be the standard of the preliminary education, delegates from some of the provinces being afraid that the standard of the central body might not be high enough.

THE BRAIN OF MURDERER PARBOTT.—Before giving the notes on the examination of the brain of this matricide, a short resumé of the case may be in order. Aged 32, by occupation a carter, this man was tried at the last assizes in Hamilton for the murder of his mother, who had been dispatched with an axe in the hands of the accused. At the trial, the plea of insanity was set up and Dr. Russell and Dr. Daniel Clark, of the Hamilton and Toronto Asylums, respectively, were summoned to examine the patient and report, on behalf of the defense. Dr. Russell states that he found the prisoner of a low intellectual order, his normal sense being of a still baser grade. At first he denied all recollection of the deed, but subsequently confessed and told the two experts all about it. He said he should have done the deed long ago, and spoke brutally of his mother. He said he had been a hard drinker for years and was drunk the day the murder was committed. On June 23 last, he was hanged, and his body was given over to the jail surgeons, Dr. Balfe and Dr. Wallace of the Hamilton Asylum for the purpose of a post-mortem. He weighed 160 pounds and was 5 feet 8 inches in height. The tips of the fingers could be thrust into the interval in the broken neck. The scalp was abnormally thick; calvaria also thicker than the average, being slightly asymmetrical in the occipital region. There was no difficulty in separating it from the dura. The Pacchionian bodies were very numerous and very adherent. Over the parietal regions, the pia was noticeably milky in appearance and when the brain was being lifted from its position, posteriorly, the medulla and the pons and adjacent parts were seen to be of a deep red color, there being quite an extensive extravasation of blood. The spinal cord was torn through about two inches below the lower margin of the pons, being attached to the nether portion by the pia mater alone. On passing the finger through the foramen magnum, the atlas was in its proper position, while the axis was with the lower part of the column and the odontoid process intact upon it. With the finger still in the foramen, no fracture of bone could be detected, the gap being due to the separation of the vertebrae. The brain weighed fifty ounces, and the convolutions were broader than the average. Section of the brain was perfectly normal and healthy in every respect macroscopically. The pupils were equal, about half way between extreme dilatation and contraction.

SKIN CLINIC AT ST. MICHAEL'S HOSPITAL.—The skin clinic at St. Michael's Hospital at 9 o'clock on the morning of the sec-

and day, was an important feature of the meeting, and was well attended. Refreshments were served, and the members of the Association present spent a very pleasant and profitable hour examining the patients. There were about thirty cases shown, and among them were several rare skin diseases, such as dermatitis herpetiformis, larva migrans, articular pigmentosa, hydrocystoma, hydradenitis, favus, molluscum contagiosum, exfoliative dermatitis following psoriasis. Drs. A. R. Robinson of New York, Shepherd of Montreal, and Graham Chambers and A. McPheeran of Toronto took part in the discussion of the cases.

TUBERCULOSIS CONTINUED.—Supplementing the information already given in the *JOURNAL* of August 26, p. 560, regarding the attention the profession in Canada is bestowing on this subject, some mention ought to be made of two able articles emanating from the respective pens of Dr. A. D. Blackader, Montreal, and Dr. H. McL. Kinghorn, Saranac Lake, N. Y., both published in a recent issue of the *Montreal Medical Journal*. The article by the first-named gentleman, "On the Treatment of Tuberculosis," gives a historic account of the open-air method of treatment, deals with tuberculin and specific immunity, and mentions experiments of Maragliano of Genoa, Paquin of St. Louis and Stubbert, at the Loomis Sanitarium, with serumtherapy. And further, diet, cod-liver oil, hydrotherapeutic measures, strychnin, creosote and ichthol in keratin coated pills, in daily doses of from 6 to 10 grs., all receive ample attention. Reverting to chest protectors, the essayist quotes Ransome, who asserts that the best procedure in this direction is douching the chest well, night and morning, with cold salt water. "The Results of Sanatoria and Special Hospital Treatment in Pulmonary Tuberculosis," are dealt with by Dr. Kinghorn for the special benefit of Canadian readers. After dwelling for some length on the cases denominated "cured," "apparently cured," "disease arrested," and "improved," the writer gives in tabulated form, the statistics of nine sanatoria for the treatment of pulmonary tuberculosis. In this table, the Gravenhurst Institution, Muskoka, where up to that time the mortality had been *nil* or not given, the "cured" is represented by 14.45 per cent, the "disease arrested" by 27.7 per cent., the "improved" by 34.93 per cent., and the "unimproved" not given. The article concludes with a table, on "Two Hundred and Three Patients who Remained in the Adirondack Cottage Sanitarium, an Average Time of Nine Months." In the August number of the *Dominion Medical Monthly*, three important points are mentioned in an editorial article on this subject: 1, the employment of a rubber "sanitary" pocket, so constructed as to fit into the inside pocket of the patient's coat, serving as a receptacle for handkerchiefs, used for the sputum of the afflicted; 2, the formation of a national society, for the propagation of information concerning tuberculosis and the necessary means to employ to stay its ravages—with provincial and county branches, on the lines of that promulgated by Sir William Broadbent in England, and presided over by H.R.H. the Prince of Wales; and 3, trephining in tubercular meningitis, incising the dura mater, admitting air to the subdural space—and, if need be, the employment of medicated injections therein. Just to hand is the July report of the Provincial Board of Health of Ontario. This shows a slight increase in death-rate over the average of the last three or four years. The total number of deaths reported is 1643 and the death-rate is 9.3 per 1000. For June the number was 1521, the death-rate, 9 per 1000. The total number of deaths from contagious diseases was 230, 6 more than in July, 1898, and 17 more than in June of this year. Scarlatina registers 7, diphtheria 20, measles 4, whooping-cough 6, typhoid 15, while consumption shows a marked increase; 178 deaths were registered from the "white plague" alone, which is the rate of 1 per 1000. In July, 1898, deaths from consumption were 143, 0.9 per 1000.

NOTES.

Dr. N. E. McKay, Halifax, N. S., has received an appoint-

ment on the faculty of the Halifax Medical College. He will be lecturer on surgery and professor of clinical and operative surgery. . . . Surgeon-Lieut.-Col. J. L. H. Neilson has been appointed director-general of the Canadian militia army medical services. . . . Dr. Oronhyatekha, Supreme Chief Ranger, I. O. F. Toronto, and Dr. Thomas Millman, medical officer of the same institution, have been elected to the positions of president of the National Fraternal Congress and vice-chairman of the medical section thereof, respectively. . . . Dr. P. H. Bryce, Secretary of the Provincial Board of Health for Ontario has just returned from a trip to Muskoka. He states the hotels up there are now in fine sanitary shape and that not a single case of typhoid fever has been reported there this season, which is altogether unusual.

Book Notices.

TREATMENT OF PELVIC INFLAMMATION THROUGH THE VAGINA. By WM. R. PRYOR, M.D. Professor of Gynecology, New York Polytechnic; Consulting Surgeon, City Charity Hospital; Visiting Surgeon St. Elizabeth Hospital, New York City. With 110 illustrations. Price, \$2.00, net. Philadelphia, W. B. Saunders, 1899.

As the title indicates, the author has not attempted to cover even a small part of the gynecologic field, but that which is covered is done thoroughly. The inflammatory diseases of the pelvis are the cause of the major portion of the suffering of women, and the importance of right treatment can not be too much emphasized. The spirit predominant throughout the work, as the author acknowledges, is that of an aggressive interference, yet the radicalism does not go beyond what is dictated by sound reasoning. The ultraconservative gynecologist even will find much to aid him in his methods of treatment, for while the author is emphatic in urging radical treatment when indicated, the milder methods are fully given. The book is distinctly original, and is intended to reflect the author's views, and his only. "The views and methods of others can readily be procured from the medical press," as the author informs us. The book is well illustrated and will be found of great practical value, not only to the operator, but also to those who confine themselves to the more simple or palliative measures.

TWENTIETH CENTURY PRACTICE. An International Encyclopedia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D., New York City. In Twenty Volumes. Volume XVI. Infectious Diseases. New York: William Wood & Co. 1899.

This slightly belated volume of this valuable series contains a number of important articles by authors whose names alone are a guarantee of the worth of their contributions. Chief among these may be noticed: "Lobar Pneumonia," by Dr. Andrew H. Smith; "Cerebrospinal Meningitis," by Dr. Netter of Paris; "Inflammation," by Prof. Ziegler of Freiburg; "Relapsing Fever," by Prof. Popoff of St. Petersburg, and the two on "Typhoid Fever," by Drs. Thacher and Brauman of New York. Tropical medicine is represented in the articles on "Yaws," by Dr. Nicholls of Dominica, W. I., and that on "Dysentery" is by Dr. Sodré of Rio Janeiro. All the articles are monographic and give the latest accepted views on their respective subjects, of course, in some cases tinged by the author's own predilections on certain disputed points. This, however, does not detract from their general value, and the volume is one that will rank well in the series.

LES POSSES VISCERALES (ESTOMAC-INTESTIN-REIN-FOIE-RATE) DIAGNOSTIC ET NOSOGRAPHIE (ENTEROPOSES-HEPATITES). Par FRANTZ GLENARD, (The Visceral Poses, Etc.). Avec 224 figures et 30 tableaux synoptiques. Paris: F. Alcan. 1899.

The theme of this bulky volume is the derangements characterized by displacement of the abdominal viscera, which the author remotely attributes to hepatic derangement and creates a new diathesis, that of "hepatitis," a condition in his opin-

ion responsible for a large number of nutritional disorders. The arguments in favor of the author's views are given at great length, and are based, as he claims, on the study of over ten thousand cases, all of the same pathologic family.

THE MECHANICS OF SURGERY, comprising Detailed Descriptions, Illustrations and Lists of the Instruments, Appliances and Furniture necessary in Modern Surgical Art. By Charles Truax. Chicago: 1899. Price \$4.50.

Mr. Truax has attempted something in this book that is unique, to say the least, and he has done his work well. The task of giving us such a work as is attempted in this volume is a very hard one, for the reason that the author does not pretend to be a surgeon, and yet has quite often to give advice which is not supposed to come from any one but a surgeon. The position which he occupies, and from which he writes, is that of a manufacturer of instruments, and he lays no claim to anything further. He has carefully avoided, therefore, stepping over the boundary, although at times he seems to have gotten very close to the edge.

Each branch is taken up and instruments are grouped under the particular department to which each belongs. The opening chapter is on the history of instruments, which is followed by one on the construction of surgical instruments, and in this the subject is treated in a general manner. Then follows a chapter of the care of instruments, in which he is given advice that is serviceable as far as it goes, but it is disappointing in that so little is said about the minor details in the care of instruments. However, this omission is met in different places in the book where hints are given for the care of special instruments.

Not only are hints given as to the care but also how to select the right instrument for the purpose in hand, and in this part of the work comes its great value. Taking up the subject of thermometers, for instance, the physician will find in paragraphs devoted to this instrument some very practical information that will be found useful. He calls attention to the advantage of knowing how long it takes the thermometer to register, so that time may not be unnecessarily wasted in securing the proper temperature. Different instruments take different lengths of time. An instrument that will register the maximum degree of heat in one minute is preferable to one requiring five minutes. The author calls attention, however, to the fact that in getting these thermometers that register in a minute it requires that the bulb be very thin and consequently more breakable. The time required for a thermometer to register the maximum temperature must depend on the shape of the bulb, the quantity of mercury and the thickness of the glass forming its walls. It is, he says, very important that physicians should know the time requisite for each thermometer to register, and to obtain this he makes a suggestion. This is that on receiving a thermometer, it be tested by immersion in water at about the normal body temperature—say for five minutes. After shaking down the mercury, it should be tested for four minutes. If the temperature is found the same after this test, it should be again tested for three minutes. If this reaches the same result, it may be tested for two minutes, and so on until a test is made in which the maximum temperature is not reached. The shortest time, then, in which the proper temperature is secured should be selected for each registration, and if accurately timed in all cases the physician will be content to secure perfect results.

Such hints as he gives in reference to thermometers may be found in reference to other instruments in various chapters of the book; and those who want to know how to select good instruments and how to take care of them when they have them, will find many helpful hints.

The chapter on "Prosthetic Surgery," which comes at the end of the book, is one of the most valuable, and is a subject that has been well handled by the author, who speaks from experience.

We can not help but congratulate the author on the success he has made, and we are sure that those who procure the volume will feel that they are well repaid in the amount of information contained therein.

Deaths and Obituaries.

WALTER T. ADAIR, M.D., for fifteen years superintendent of the Cherokee Orphan Asylum and the Cherokee High School, died at his home, near the asylum, August 15, aged 65 years. He was staff surgeon of Stand Watie's command and chief surgeon of the First Indian Division, on the staff of General Douglas H. Cooper, during the Civil War.

WILLIAM H. CAEMMERER, M.D., Univ. of Jena, Germany, 1847, died at his home in Brooklyn, N. Y., aged 78 years. He was born near Madras, India, and soon after his graduation came to this country. During the Civil War and for some time previously he was an examining physician at Castle Garden, N.Y. In 1870 he removed to Brooklyn, N. Y., where he established himself in a large family practice.

WILLIAM H. DALLAM, M.D., Univ. of Md., 1845, died at his home, near Creswell, Md., August 31, aged 77 years. He was for many years connected with the management of the Chesapeake Furnace Association.

JAMES FITZGERALD FEELY, M.D., N. Y. Univ., 1865, visiting surgeon of St. Catharine's Hospital, Brooklyn, N. Y., died at his home in that city, August 30. He was born in London, Eng., in 1841, but came to this country with his parents when a child and completed his scholastic course at the Brooklyn Polytechnic Institute. He was a member of the AMERICAN MEDICAL ASSOCIATION, the N. Y. State Medical Association and other scientific bodies.

DR. ROBERT W. HASLETT, for forty-five years a practitioner of medicine in Wheeling, W. Va., died at his home September 2, aged 71 years. He had been president of the State Medical Society, of the Ohio County Medical Association, and had held other responsible positions. The Ohio County Medical Association, at a special meeting called for the purpose, passed resolutions of condolence, and these, with other proceedings, show the high esteem in which he was held by the profession and the citizens.

JOHN M. GRAY, M.D., of Noblesville, Ind., died at the home of his daughter, in that city, August 29. Through the Civil War he was surgeon of the Thirty-ninth Indiana. During his late years he had been in failing health, and was almost blind.

J. B. HARRISON, M.D., died at his home, in Union City, Tenn., August 27, aged 70 years. He was an old landmark of the city, and did a large charity practice for years.

JOHN J. LYNSON, M.D., died at his home, in Tarrytown, N. Y., August 26, aged 73 years. He was an assistant surgeon in the Sixth N. Y. Heavy Artillery during the Civil War, later being surgeon of the provost-marshal's office at Tarrytown.

HAMILTON MAILLY, M.D., died at his home in Bridgeton, N.J., August 30, aged 32 years. Dr. Mailly was a victim of tuberculosis, and spent six months in Colorado, returning about one year ago apparently benefited in health. He was born in Delaware in 1867, graduated from the University of Pennsylvania in 1891, and has since been practicing his profession in Bridgeton. He has for a number of years held the office of Secretary of the Cumberland County Medical Society, and was also a member of the Medical Staff of the Bridgeton Hospital Association. Dr. Mailly was held in the highest esteem by the medical profession in general.

CORNELIUS HANFORD SCHAPPS, M.D., formerly of Brooklyn, N. Y., died in New York City, September 1, aged 82 years. He became a licentiate of the N. Y. State Medical Society in 1840.

George S. Pohls, M.D., died in Philadelphia, August 30, aged 49 years. . . . William Tuby, M.D., Macon, Mo., August 29. . . . George H. Trumbo, M. D., at Linden, Va., August 26, aged 59 years.

Miscellany.

Pharmacy in Germany.—The drug store in Germany must have, besides the store and separate prescription room, a room for dry storage, a cellar, a laboratory and a compounding room, and he accepted as suitable by the Regierungspresident. It is inspected once in three years by a commission consisting of a physician, a druggist, government official and a policeman. Poisons have to be kept locked up in a special compartment with special scales.

Death After Zinc Chlorid Injection Into Uterus.—M. Schmid recommends applying zinc chlorid on a cotton wad, instead of using the Braun syringe, as the solution may penetrate into the tube and cause fatal perimetritis, as has recently occurred in his experience. Three injections of 1 c.c. of a 50 per cent. solution were uneventful, but the fourth caused death within eight hours, although the fluid had not reached the fimbriated extremity.—*Monats. f. Geb. u. Gyn.*, June.

Peace Propositions.—The three propositions advanced at the Peace Conference, prohibiting the throwing of explosives from balloons, the use of projectiles destined solely to disseminate asphyxiating or toxic gases and of projectiles that spread after entering the body, were all signed by Russia, France, Sweden and Norway among the more important of the twenty-six powers represented. All were rejected by Austria, China, Germany, Great Britain, Italy, Japan, Luxemburg, Servia and Switzerland. The United States also refused to sign the gas and bullet ordinances, and Portugal the latter. The same powers also all refused to sign the ordinance applying the principles of the Geneva Convention to maritime warfare, with the addition of Turkey.

Can Block off Streets.—In the case of George V. Anderson against the mayor and council of the city of Wilmington, the superior court of Delaware holds that the city had a right to block off a street for the comfort and well-being of sick residents thereon, in its discretion, and to use for that purpose such instrumentalities as it deemed proper. Inasmuch, however, as the street was a public highway of the city, to the proper use of which all the citizens were entitled, the court adds that it was the duty of the city, in placing such obstruction, as for example a wire, there, to so place and mark the same as to properly guard the public safety, and to give such notice of the obstruction as would reasonably notify all persons having occasion to use the street that the danger was there.

Infiltration Anesthesia.—This method of inducing anesthesia, according to the Berlin correspondent of the *Medical Press and Circular*, seems much more cultivated in Germany than in other countries, and a recent article by H. Braun in *Volkmann's Archiv*, brings it still further to the front. The best medium for producing the anesthesia in the eucain B solution (eucain B 0.1, sod. chlorid 0.8, aq. dist. 100.0). This solution admits of sterilization, while cocain does not. Before the operation Braun always gives a morphia injection, but not in the region to be operated on. The method of injection is that adopted by Schleich himself. He has performed both minor and major operations under this form of infiltration anesthesia—tracheotomies, empyo-thoracentsis, abdominal sections (twenty cases). The solution is said to be very suitable for hydrocele operations. After removal of the fluid, the sac is filled tensely with the fluid, and in a quarter of an hour the tissue to be removed is infiltrated with the solution. The regionary anesthesia recommended by Oberst is most suitable for phlegmons and diffuse inflammations.

Entitled to Sick Benefits.—The word "sickness," as used in the by-laws of beneficial societies, the supreme court of Rhode Island states, in the case of Robillard against the

Societe St. Jean Baptiste, is construed to include insanity, so as to entitle a member becoming insane to sick benefits, where the by-laws provide for sickness and do not especially exclude insanity. Nor is it a defense, where the allegation is that the member was sick and unable to work, on account of nervous trouble, the supreme court of Michigan holds, in the case of Wuerthner against Workingmen's Benevolent Society, that his condition might be due to immoral practices, where there is no specific exclusion on that account under the by-laws. It says that a claim that such is the case has force, by reason of the repulsive nature of the vice; but, it adds, had the sickness resulted from overexertion in sport, or over-eating, or the liquor habit, the same defense might be made, if this one was permissible.

Nursing Consultations.—Seven years ago Prof. P. Budin established a weekly consultation for the infants, born in his service at the Charité, who are brought back by the mothers every Friday morning for inspection and advice after they leave the hospital. It is impossible to overestimate the benefits of these conferences, with the weight and progress of the infants recorded from week to week, advice to the mothers and gratuitous distribution of sterilized milk in bottles only containing enough for one meal for the baby. There has not been a single case of rhachitis, milk dyspepsia, "big belly" nor scorbutus among the 435 thus supervised for one month to two years, and only one death from bowel trouble, and in this instance his advice was disregarded. Similar consultations have since been established elsewhere in France. Some, like the "Drop of Milk" at Fecamp, where the mortality from enteritis has fallen to 1.28 per cent., supply all the sterilized milk needed by the infants, free or not according to circumstances.

Medical Department, University of California.—Many changes have been made in this institution since the closing of the last term. The anatomic and pathologic departments have been entirely reorganized and will be placed under salaried heads, the men in these departments have nothing to do outside of the college work of their own departments. Fifty microscopes have been given to the department by a regent of the university, the same regent also having agreed to be responsible for the full equipment of a pathologic laboratory on the best and most complete scale. It is expected that all the laboratories will be fully equipped by the end of another year. Very extensive facilities are to be provided for original research and for animal investigation, and as there is considerable research work already in progress, this part of the college work may soon be expected to be heard from. The library of the department is being catalogued as rapidly as possible, considering the fact that no catalogue of any kind has previously existed. There are about 3000 bound volumes in the library, including complete sets of many journals, among them being *Virchow's Archives*, Schmidt's *Jarbuch*, the *Lancet*, the *British Medical Journal*, and others. There are also about 2000 German monographs and as many English and American pamphlets. When fully catalogued and indexed the library will be very valuable.

Fifty Dollars a Day Not too High.—In the case of the City of Walla Walla vs. Ferdon, the supreme court of Washington holds that an ordinance imposing a license fee of \$50 per day for the sale by public outcry of drugs, medicines, nostrums or any other substance for the cure of, or pretended cure of, any disease or ailment, is not invalid, as being unreasonable, in demanding an extortionate sum for the license. The court recognizes that a municipal corporation may not arbitrarily declare a lawful trade or business a nuisance. Yet it says that the manner of conducting it may be regulated, and that it may be licensed when so regulated. Nay more, it declares that it can not be said that the sale of drugs and nostrums by public outcry, and accompanied, say by a concert, comes within the class of useful trades or employments.

It thinks it rather falls within another class, where, under the authority to regulate and license, a substantial revenue may be incidental to the license. Nor does it consider that it made any difference that the defendant held a license as auctioneer and also for a show or exhibition, although the contention was that therefore as a showman he could attract people, and as auctioneer he could vend drugs and nostrums which were claimed to cure ailments. Neither does it accede to the contention that because there was no license required for the sale of drugs in the usual manner by drug stores there was discrimination in the terms of the ordinance in question. It insists that there is a material difference between the ordinary dispensation of drugs through the drug store, and noisy sales by public outcry. It further asserts that it can not be said that the public welfare of a city requires the sales of nostrums in the latter manner.

New York Medical Items.—The monthly report of the New York State Board of Health of the mortality in the State in July, just issued, places the total number of deaths at 11,291. Of these 7324 were in the maritime district, a showing that compares favorably with the mortality in past summer seasons. The total number of deaths in New York City was 6808, of which 3571 were in the Borough of Manhattan, 2381 in Brooklyn, 397 in Bronx, 285 in Queens, and 164 in Richmond. Of the deaths in the city, 101 were from old age, and 836 from accident or violence. In the maritime district in general the mortality represented an annual death-rate of 22.5 per 1000 of the estimated population; in the city of New York, a death-rate of 22.5; in the Borough of Manhattan, a death-rate of 21; in the Borough of the Bronx—increased by the number of the large institutions there—25.5; in the Borough of Brooklyn, 22.5; in the Borough of Queens, 25.8, and in the Borough of Richmond, 28.7. The percentage of deaths of children under 5 years of age to the total number of deaths was 51.3 in the maritime district in general; 52.2 in New York City as a whole; 49.1 in the Borough of Manhattan; 50 in the Bronx; 53.1 in Brooklyn; 55.2 in Queens, and 49.4 in Richmond. Some rather curious contrasts are presented by the mortality records of some of the towns in the maritime district outside of New York City. Thus, in Sag Harbor, at the eastern extremity of Long Island, while the total number of deaths represents an annual death rate of 32, or one-third more than New York City and the district in general, the percentage of deaths under 5 years is only 12.5. On the other hand, in White Plains, Westchester County, a rural community, the percentage of deaths under 5 years is 62.5, or more than 10 per cent. greater than in the city of New York. The proportion of deaths from zymotic diseases per thousand deaths from all causes was 265.3 in the district in general; 267.6 in the City of New York as a whole; 228.2 in the Borough of Manhattan; 245 in the Bronx; 312.6 in Brooklyn; 302.5 in Queens, and 250 in Richmond. In the towns outside New York City the largest proportion per 1000 of total deaths, 555.5, was in North Hempstead, on Long Island, and the smallest, 103.8, in Brookhaven, also on Long Island.

Good Will.—Lord Eldon said that good will was simply "the possibility that the old customers will resort to the old place." In that sense, in which he used the term "good will of the premises," the supreme court of Tennessee says there may be an advantage of pecuniary value in occupying premises which have been occupied by skilled professional men, and to which the public has resorted, or has been attracted by advertisements, or prior visits, or general reputation of prior occupants. It reasons that many persons, attracted to the place by the reputation of former occupants, might remain, no matter who might be in occupancy, while others might leave so soon as it was ascertained that they were not occupied by the persons in whom they had professional and personal confidence. But whatever else may be said about it, or done to such good will as arises out of location, the court holds, in

Slack vs. Suddoth, that there can be no forced sale or transfer in invitum of such good will, so far as it is based upon business connections or professional reputation and standing, such as arises from the skill of physicians, dentists, etc. More particularly, the court holds that where two dentists had been talking of dissolving partnership, and one of them went out of the firm, rented a room adjoining the old offices, and offered his former partner \$500 to let him have the lease and use of those offices, the court holds that this offer was no criterion of the value of the use of those rooms, and would be no justification for an award to him of \$500 or any other sum for the good will so-called acquired by the remaining partner. In other words, it holds that the partner that left was entitled to nothing on the account of good will, under the above-stated principles.

Not Responsible for Amputated Parts.—A case apparently without a parallel, is that of *Doxtator vs. Chicago and West Michigan Railway Company*. The plaintiff sued to recover damages on account of having been deprived of the right to give the remains of her deceased husband a Christian burial, alleging that she had been deprived of that right by the wrongful act of the defendant. The theory of the plaintiff was that, when the railway company lifted her husband from the ground, after he had been run over while in its employ, it took on its shoulders a duty, and that duty was to care for him while he should live, and at his death deliver his remains, and the whole of them, over to his wife for burial; that the company did not do this, but, instead, negligently allowed the cremation of the dismembered lower limbs, and was, therefore, liable to the widow in damages. She obtained a judgment in her favor. But the supreme court of Michigan reverses this, holding that the defendant was entitled to a directed verdict. At the outset, it states that at the common law there was said to be no property in a dead body, and that in one sense this may still be deemed an accurate technical statement; but that it has been held in a number of well-considered American cases that the one whose duty it is to care for the body of the deceased is entitled to possession of the body, as it is when death comes, and that it is an actionable wrong for another to interfere with that right by withholding the body or mutilating it in any way. This right was conceded here. Taking up the question of the duty of the company, and how far it assumed control over the injured man, the court holds that, by the yard foreman calling another to hold his head, and notifying the surgeon of the road and calling the police ambulance, neither the foreman nor the railway company could be said to have become bailees, or to have assumed such a control over the injured man as to preclude the relatives from assuming charge of the ministrations to him. At his own request he was not taken home, though the policeman who came with the ambulance took him to a different hospital from the one he requested. Now, if its surgeon had not appeared, the court thinks that the company would not have been liable for any further neglect of, or injury to, the unfortunate man. Nor does it consider that, finding the patient in an appropriate hospital, with another surgeon in attendance, by assuming charge of the case, the company's surgeon took upon himself, as the agent of the railway company, the duty of seeing to it that, when death ensued, the body should be delivered to the widow. It holds that the duty he assumed consisted merely of performing such operations as the nature of the case required, leaving it to the attendants at the hospital to make such disposition of the parts amputated as custom warranted, and that neither in purpose nor in fact did he assume to take charge of the dismembered parts. The assumption of the charge of the case, it holds, was simply assuming charge of the operation. The surgeon had no knowledge of any direction as to the disposition of the amputated parts, and the court maintains, was not in fault in not assuming and guarding against an unwarranted disposition of them.

The Public Service.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., to and including August 31, 1899.

Daniel M. Appel, major and surgeon U. S. A., from the general hospital, Savannah, Ga., to Fort Bayard, N. M., as commanding officer of the general hospital for pulmonary tuberculosis to be there established.

Edward J. Barrett, appointed lieutenant and asst.-surgeon, Vols., August 17, 1899, and assigned to the 41st Inf. Vols., at Camp Meade, Pa.

William J. Boyd, acting asst. surgeon, from Pavillon, N. Y., to duty at Fort Leavenworth, Kan., appointed member of a board at that post to examine persons designated for appointment as second lieutenants in the army.

Walter Cox, lieutenant and asst.-surgeon, U. S. A., sick leave extended.

Thomas Earle Evans, acting asst.-surgeon, from Fort Crook, Neb., to Fort Riley, Kan., to accompany troop G, 8th Cav., to San Francisco, Cal. Charles M. Galbraith, major and surgeon, Vols., leave of absence granted.

Henry Lippincott, lieutenant-colonel, deputy surgeon-general, U. S. A., to represent the medical department of the army at the eighth annual meeting of the Military Surgeons of the U. S., at Kansas City, Mo., Sept. 27-29, 1899.

James E. Pilcher, captain and asst.-surgeon, U. S. A., to report for examination to the president of an army retiring board in New York City.

Junius L. Powell, major and surgeon, U. S. A., relieved from the operation of former orders requiring him to represent the medical department at the meeting of the U. S. Military Surgeons at Kansas City, Mo., Sept. 27-29, 1899.

Charles Richard, major and surgeon, U. S. A., member of a board at Fort Leavenworth, Kan., to examine persons designated for appointment as second lieutenants in the army.

Robert P. Robbins, appointed captain and asst.-surgeon, Vols., Aug. 17, 1899, assigned to the 47th Inf. Vols.; he will join this regiment on its arrival in Manila, P. I.

Joseph L. Santoro, appointed lieutenant and asst.-surgeon, Vols., August 18, 1899, and assigned to the 29th Inf. Vols., at Fort McPherson, Ga.

Dwight B. Taylor, acting asst.-surgeon, to accompany recruits from Columbus Barracks, Ohio, to San Francisco, Cal., and thereafter return to his station.

Walter D. Webb, appointed captain and asst.-surgeon Vols., August 17, 1899, and assigned to the 43d Inf. Vols., at Fort Ethan Allen, Vt.

James S. Wilson, lieutenant and asst.-surgeon, U. S. A., orders relieving him from duty to the hospital ship *Missioni* on his arrival at Manila, P. I., amended so as to relieve him at once; he is directed to proceed to Manila on that ship.

Nelson W. Wilson, acting asst.-surgeon, to post duty at Fort Porter and as examiner of recruits at Buffalo, N. Y.

GENERAL ORDERS, No. 159.

WASHINGTON, August 29, 1899.

By direction of the Secretary of War, the Surgeon-General of the Army is authorized to establish a general hospital at Fort Bayard, N. M., as a sanatorium for the treatment of officers and enlisted men of the army suffering from pulmonary tuberculosis and hereafter transfers of enlisted men suffering from this disease may be made to this hospital on the recommendation of medical officers of the army—to be forwarded through military channels.

Such buildings pertaining to the post of Fort Bayard as may be necessary to carry this order into effect will be designated by the Surgeon-General of the Army. Fort Bayard will be put in good state of repair by the Quartermaster's Department.

The Surgeon-General is also authorized to provide for the care and treatment of discharged soldiers entitled to the benefits of the U. S. Soldiers' Home, Washington, D. C., who may be sent to the sanatorium by the Board of Commissioners of the Home. The expense of the maintenance of such discharged soldiers to be paid from the Soldiers' Home funds. By command of Major General Miles.

H. C. COBBIN, Adjutant General.

BOARD CONVENED.

The following order for a board of medical officers to be convened at Manila, P. I., for the examination of candidates for admission into the medical department of the army was issued from the War Department, August 29, 1899:

By direction of the Secretary of War, a board of medical officers, to consist of—

Major William R. Hall, surgeon, U. S. Army;

Major William H. Artlund, surgeon, U. S. Army;

Captain William L. Kneidel, asst.-surgeon, U. S. Army;

First Lieutenant Douglas L. Duval, asst.-surgeon, U. S. Army;

First Lieutenant Clarence J. Manley, asst.-surgeon, U. S. Army,

is appointed to meet on board the hospital ship *Missioni*, as soon as practicable after the arrival of that ship at Manila, Philippine Islands, for the examination of candidates for admission into the medical department of the army. The board will be governed in its proceedings by such instructions as may be communicated to it by the surgeon-general of the army.

Movements of Navy Medical Officers.—Changes in the medical corps of the U. S. Navy for the week ending Sept. 2, 1899:

P. A. Surgeon E. R. Stitt, detached from the hrean of medicine and surgery, September 25, and ordered to the *Warford*.

Asst.-Surgeon W. M. Garton, detached from the *Annapolis*, when placed out of commission, and ordered to the naval academy.

Asst.-Surgeon W. M. Garton, order of August 28 modified, when

detached from the *Annapolis*, ordered to the Norfolk navy yard for duty on the *Franklin*, instead of to the naval academy.

Pharmacist J. N. Hurd, detached from treatment at the naval hospital, Mare Island, Cal., and granted sick leave for three months.

P. A. Surgeon J. C. Rosenbluth, detached from the *Nashville* and ordered to the naval hospital, Chelsea, Mass., for treatment.

P. A. Surgeon M. S. Guest, detached from the Boston navy yard and ordered to the *Wabash*.

Asst.-Surgeon H. B. Dunn, detached from the Washington navy yard, September 2, and ordered to the Fort Royal naval station.

Asst.-Surgeon A. Stuart, detached from the Fort Royal naval station, and ordered to the *Yankee*.

Asst.-Surgeon D. B. Kerr, detached from the *Yankee* and ordered to the *Marietta*, upon reporting of relief.

Asst.-Surgeon M. K. Johnson, detached from the *Marietta* and ordered to the *Amelia*.

Pharmacist R. Wagener, ordered to the Army and Navy General Hospital, Hot Springs, Ark., for treatment.

Marine-Hospital Changes.—Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the U. S. Marine-Hospital Service, for the seven days ended August 24, 1899.

Surgeon D. A. Carmichael, granted leave of absence for 30 days.

Surgeon Eugene Wasdin, to proceed to Marshall, Va., on special temporary duty; detailed as delegate to the International Medical Congress to meet at Brussels, Belgium, Sept. 4, 1899.

Surgeon W. J. Pettus, granted leave of absence for one day.

P. A. Surgeon W. G. Stimpson, granted leave of absence for 30 days from August 18, 1899.

P. A. Surgeon J. H. Oakley, to proceed to Paducah, Ky., on special temporary duty.

P. A. Surgeon H. W. Wickes, granted leave of absence for 10 days.

Asst.-Surgeon L. D. Fricks, detailed as inspector of unseaworthy property at Norfolk, Va.

Acting Asst.-Surgeon H. S. Caminero, detailed as quarantine officer for the port of Guantanamo, Cuba.

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended Sept. 1, 1899:

SMALLPOX—UNITED STATES.

Florida: Jacksonville, August 26, 1 case.

Louisiana: New Orleans, August 26, 1 case.

Massachusetts: Boston, August 26, 1 death; Fall River, August 26, 1 case.

Michigan: Sault Creek, August 26, reported present.

Ohio: Cleveland, August 26, 2 cases.

Pennsylvania: Philadelphia, August 26, 1 case.

Washington: Spokane, August 26, 1 case.

SMALLPOX—FOREIGN.

Argentine Republic: Buenos Ayres, June 1 to 30, 1 death.

Austria: Budapest, August 6 to 10, 1 case.

Belgium: Antwerp, August 5, 5 cases, 1 death.

Brazil: Rio de Janeiro, July 14 to 27, 11 deaths.

Egypt: Cairo, July 23 to August 2, 7 deaths.

England: Hull, August 19, 3 deaths; London, August 5, 1 death.

Greece: Athens, August 1 to 11, 5 cases, 2 deaths.

India: Bombay, July 25 to August 1, 22 deaths; Madras, August 15 to 21, 1 death.

Mexico: Chihuahua, August 20, 1 death; Mexico, August 13 to 22, 6 cases, 3 deaths; Navejo Luereco, August 12 to 18, 1 death.

Russia: Moscow, July 29 to August 14, 6 cases, 1 death; Odessa, August 5, 1 case, 2 deaths; St. Petersburg, July 29 to August 12, 15 cases, 2 deaths.

Turkey: Erzerum, August 5, 2 cases.

YELLOW FEVER.

Argentine Republic: Buenos Ayres, June 1 to 30, 3 cases, 3 deaths.

Brazil: Rio de Janeiro, July 14 to 27, 6 deaths.

Colombia: Barranquilla, August 6 to 13, 2 deaths.

Cuba: Havana, August 14 to 27, 7 deaths; Matanzas, August 21, 1 case; Santiago, July 30 to August 12 to 19, 5 cases, 4 deaths.

Mexico: Tuxpan, August 14, 5 deaths; Vera Cruz, August 17 to 24, 22 deaths.

CHOLERA.

India: Bombay, July 25 to August 1, 7 deaths; Calcutta, July 15 to August 3, 73 deaths.

Japan: Yokohama, July 29, 1 death.

PLAGUE.

Egypt: Alexandria, July 30, 4 cases, 3 deaths.

India: Bombay, July 25 to August 1, 132 deaths; Calcutta, July 15, to August 3, 7 deaths.

Straits Settlements: Penang, July 7 to 14, 71 deaths; Singapore, July 2 to 15, 7 cases, 4 deaths.

CHANGE OF ADDRESS.

Akins, W. T., from 1122 Southport Ave. to 1042 Addison St., Chicago.

Bond, L. L., from West Side to Denison, Iowa.

Best, S. R., from Brandon to Centerburg, Ohio.

Bennett, A. L., from 1463 Pearl St. to Steel Blk., Denver, Colo.

Bellamy, R., from 210 W. 57th St., New York City to Newport, R. I.

Childers, R. A., from Gainesville to Abilene, Texas.

Felt, R. A., from Galesburg to Knoxville, Ill.

Gilman, J. P., from Fond du Lac, to 725 Chestnut St., Louisville, Ky.

Gilmore, G. H., from Murray, Neb., to Stanberry, Mo.

Kelly, William, from Nashville, Tenn., to Care C. I. M. Hawkwood, Hunan St., Changteh, China.

McClintock, J. T., from Sioux City to Box 1804, Iowa City, Iowa.

Neilson, T. H., from Philadelphia, Pa., to Box 188, Cape May, N. J.

Stotts, A. F., from 137 Vine St., Philadelphia to Soldier, Pa.

Ullrich, A. M., from Grove Beach, Conn., to Lancaster, Pa.

Wilson, J. B., from Canon City, Colo., to Laramie, Wyo.

Whittaker, J. T., from Lakewood, N. Y., to 32 Garfield Pl., Cincinnati, Ohio.

Woodward, R. M., from Reedy Island Quar., Port Penn, Del., to U. S. Marine-Hospit. Bureau, Washington, D. C.

The Journal of the American Medical Association

VOL. XXXIII

CHICAGO, ILLINOIS, SEPTEMBER 16, 1899.

No. 12

Address.

A PROFITABLE MEDICAL EDUCATION.*

BY HENRY O. WALKER, M.D.

SECRETARY DETROIT COLLEGE OF MEDICINE.
DETROIT, MICH.

In the following remarks, which it is now my pleasant duty to make, I shall bear in mind that I am addressing a select body of medical gentlemen on a most familiar topic; one that is uppermost in our minds on the occasions of these annual meetings; of the utmost importance to us as teachers as well as our students, and a subject concerning which there are honest differences of opinion. It is not my intention at this time to elaborate a complete system of medical education, but rather to bring forward again some of the main elements in what constitutes for the now-a-day average graduate in medicine a profitable training. In doing this I am aware that you may recognize some old straw being re-threshed, but I am put to it by the conviction that they are worthy of frequent repetition.

The most conspicuous fact relative to medical education is its continual change. From the crude ideas on anatomy, which the early Egyptians must have had, through their practice of the healing art and the embalming of dead bodies, and from the rules in hygiene with which the book of Leviticus abounds, through the mysticism, fanaticism and reforms of the several intervening periods up to the present, medicine has been an ever-changing art, a constantly-growing science. Within our own memory, with the progressive development of the older correlated branches of medicine proper, such as physiology, physiologic chemistry, hygiene and pathology, and by the birth of histology, bacteriology, electrotherapy and other newer sciences, the curricula of medicine have of necessity been greatly modified and expanded. Prescribed schedules of study have from time to time been lengthened to admit of additional courses, and at the same time a system of compression has been practiced in all of them in order that new matter might be introduced. In calling attention to these incidents no thought of destructive criticism is indulged in. They are the inevitable results and evidences of the growth of knowledge. They are, in fact, evolutionary changes. As we have observed them in the recent past so may they be looked for in the future.

While these modifications are entirely consistent with real progress, it is nevertheless profitable for us as teachers to be frequently reminded of the true purpose of medical education and of what it should consist. As the mariner in pursuing his journey over the trackless deep, turns ever and anon to the compass and by it shapes his course, so we, in guiding our pupils through the maze of useful and curious knowledge, need now

and then to get our bearings, lest we unwittingly stray from the proper path.

In considering the various uses of knowledge it is pertinent to ask whether the accumulation of medical and correlated science, and whether mental discipline in medical lore do in themselves fulfil the most desirable intent of our instruction. Again, is the chief end of our college work to develop Harveys and Huxleys and Grays and men like Agassiz, scientists who unravel bits of Nature, but doctors who do not practice? Even were we capable of doing this, something beyond the most of us, suppose we were to pick from off the benches those who have promise of scientific discoveries, how rarely would future years demonstrate the wisdom of our choice. I feel confident that you will agree with me that the product of our medical schools should be first and always men of action; men whose professional ability depends upon perfection, not so much in the science as in the art of healing. Such are they whom the world most needs and demands and to whom it gives a substantial reward. Ideals are as noble and as attractive in our profession presumably as in any other, but the bread-and-butter motive will always be with most of us the more determinate force.

Equally as important as a proper appreciation of the ends of study is the administration of the needed training. There is involved in this an understanding of both the character of our raw material and the management of the machinery at our command. Some persons have regarded it of sufficient importance to declare the advisability of laying the foundation for technical study in early childhood if possible, or in youth. This would seem to be an ideal and most desirable plan, but unfortunately for the bulk of those who come under our care it is only a dream of a lost opportunity. They come to us from the cities and from the farms, with limited literary attainments as well as after prolonged preparation. We hold entrance examinations, and during the successive terms also weed out the incompetent and unfit. There is left, we are wont to say, a lot of picked young men; but if we think them to have more than fair average capacities we are most truly mistaken. This fact should be borne in mind as we gradually raise the standard of admissions to our schools. I would in no wise curtail the requirements which the Association has already fixed. I do not forget the part which I feebly played in putting the standard to its present height. We shall doubtless learn that further advancement in this direction will be with difficulty made and at some cost in some of the schools. It is nevertheless most desirable, must come, and will most easily follow a rigid adherence to the rules we are now pledged to obey.

On the improved qualifications of our applicants will depend the solution of some of the problems now pressing their attention on us. Our curricula have been taking on new, yet essential branches, and in some respects need revising. Our laboratory work, so promising in its results, has been wonderfully increased in both breadth

*President's address, delivered before the Association of American Medical Colleges, Columbus, June 5, 1899.

and depth, and, unless due caution is observed, is apt to crowd out other equally important training. To meet the exigencies we have lengthened the term* of study and still the work is crowded. In our enthusiasm for diversified knowledge and special training for our students we should not forget the object in view. However patient and persevering our young Lydgate may be, his fellows will not be content with dry crumbs and long years of waiting, and we have no right to expect it of them. They are not destined to be martyrs to science, nor to be secluded by a cloistered wall. They are to be working doctors; men of affairs and of the world, partaking of its joys as well as soothing its sorrows.

There is no doubt as to the value of the fundamental branches of medicine. A fair elementary knowledge of physics, botany, general chemistry, biology and embryology is essential to a proper understanding of the super-structural branches and should, without exception, be insisted on. Preliminary preparation in physics and botany is already very generally required for admission, and there is no sufficient reason why all the other subjects named above should not also be relegated to the preparatory schools. Gradually this list might be extended to include elementary physiology and general bacteriology, including a limited amount of laboratory instruction. In this direction there may be afforded a degree of relief and provision made for desirable changes affecting the more technical branches.

As to the instruction itself, what I have to say appertains perhaps less to the Association than to the faculties and teachers whom we severally represent. Its important bearing upon the subject in hand is my excuse for bringing it in here. It has reference first to the modes of teaching, and secondly to the subject matter in which we deal. The modes of instruction which we have adopted are, in the order of their probable origin: the clinical, the lecture or quiz, and the laboratory methods. They are distinctive in style and function. No one of them can be made to serve as a satisfactory substitute for either of the others. Each one has its place. Their comparative value for our present purposes is however the important matter. The question is: To what extent shall each be employed? For an answer to this inquiry we have only to consider the end in view. On this point Dr. Holmes has so pertinently expressed an opinion with which I fully agree that I quote his words: "I myself have nothing to do with the clinical teaching, yet I do not hesitate to say it is more essential than all the rest put together, so far as the ordinary practice of medicine is concerned; and this is by far the most important thing to be learned, because it deals with so many more lives than any other branch of the profession." For the great majority of our graduates the clinical features of their college work will have been found to have served them best. When time shall have erased the theories and details of the lecture-room, and effaced from the mind the laborious distinctions of the laboratory desk, the pictures of diseased yet living forms will still remain as a perennial spring of knowledge and advice. As far as the subjects are adapted and our facilities will allow, the clinical mode should predominate, and neither of the others should be permitted to encroach upon it. By reason of its objective and tangible style, the laboratory method will be found preferable to the scholastic whenever a choice is possible.

Concerning the matter of instruction, distinctions should be made between the essentials and non-essentials of knowledge. At best facts are only scintillations of truth. We see one here and another there, with a blank

between. As Holmes has also remarked: "Science is the topography of ignorance. From a few elevated points we triangulate spaces inclosing infinite unknown details." While it is true that related knowledge is more easily taught and remembered than isolated facts, it is folly to unnecessarily consume our time and cumber our minds with useless non-essentials.

There is one more reform which appeals to me as worthy of our attention. For many years we have had laid before us the desirability of adopting the metric system of weights and measures. I need not go into details regarding the bungle and inexactness of the system we use and the obvious advantages of the other. Most of us have a working knowledge of the newer method, but habit and the want of unanimous action delay its exclusive use. We advise the teaching of it, and many of the schools have followed our instruction. Its general adoption is, however, too long delayed. Progressive men in other lines have very generally discarded the older modes as obsolete, and we have the authority of their national association that the pharmacists are only awaiting our consent before doing the same. They have suggested a plan of action which commends itself as both feasible and promising in its results. It is that in our schools of medicine the metric system *only* shall be taught. As I am aware of no serious objections to this plan, I heartily recommend to this Association the grant of its influence and authority in promoting its success. It is in the line of progress, will have an incalculable effect upon the science we love and by which we live, and should receive our serious consideration and approval.

Original Articles.

GALL-STONES.

CONSIDERATION OF THEIR ETIOLOGY, DIAGNOSIS AND OPERATIVE TREATMENT.*

BY JOSEPH RANSOHOFF, M.D., F.R.C.S. (Eng.).

Professor of Anatomy and Clinical Surgery, Medical College of Ohio (University of Cincinnati).

CINCINNATI.

Cholecystotomy was first performed by Boggs in 1868. It was not made a formal operation until ten years later, by Marion Sims. In less than a score of years, therefore, it may be said that the surgery of the gall-bladder and ducts has been developed until it would seem that little can be added to what is already known, or that greater success can be obtained in the future than the past has yielded. Nevertheless, there are many points in the etiology and diagnosis of gall-stones, their concomitants and sequelæ, that are mooted, and the elucidation of which may eventually make more successful the results to be obtained from operation. To some of these points I wish to direct your attention, and, as far as possible, to illustrate them with appropriate case reports and specimens.

Concerning the etiology of gall-stones comparatively little is known. Certain it is that the experiments made to produce them around foreign bodies introduced into a normal gall-bladder have almost always failed. Homans and Kehr have each reported a case in which a stone formed about a ligature.

The changes in the urine which lead to crystallization within the kidney or the secondary calculus formation

*Presented to the Section on Surgery and Anatomy, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

in the bladder, which can be recognized by urinalysis, present no analogies in the origin of gall-stones. This seems to depend on crystallization of an excess of cholesterolin, possibly due to stagnation within the gall-bladder and the absorption of water, probably the result of a transient infection of the mucosa and desquamation of its epithelium.

Naunyn has shown that the cells lining the gall-bladder exude a substance which, by the addition of acetic acid is formed into cholesterolin. It is now generally conceded that with few exceptions gall-stones only originate in the gall-bladder, and that the nucleus about which crystallization takes place is of hemic or bacterial origin.

Gall-stones present but few varieties, the vast majority being formed either of pure cholesterolin or of bile pigments. Either of these may secondarily be encrusted with lime salts when retained for any length of time within a suppurating nidus. In size, in color, and in shape they vary much, even more in numbers; still, the gall-stones found in an individual case, as a rule, resemble each other as much as do peas in a pod. Not the least interesting cases are those in which nothing is found within the gall-bladder or its ducts save a few calculi not larger than millet-seeds, or a little biliary sand, black in color, as hard as emery, and so insignificant in quantity as often to be isolated only with great difficulty.

When we regard a gall-bladder containing anywhere from two or three to as many as a thousand gall-stones, we involuntarily ask ourselves: When did these gall-stones develop; what, in point of age, is their relation to each other, and is it possible that they were formed at about the same time and from a common cause?

I believe this to be the case, but gladly admit it to be beyond my ability to prove. The similarity in color, size, shape and identity in a few of the specimens, examined chemically, of stones removed from the same gall-bladder forms the foundation for this view. Furthermore, recurrence of symptoms after gall-stone operations is uncommon. Since my first operation, in 1879, I have had no instance in which a second operation was necessary, and only two in which there was a recurrence of symptoms. A cholecystotomy in one of them was followed by the voiding of a stone two years later. Kehr has operated eight times in the same patient. Hermann of Carlsbad claims to have seen 15 patients who had been operated on; of these 7 had recurrence. When a stone is discharged soon after operation, through a fistula or by natural ways, it is reasonable to assume that it was overlooked at the first operation. On the other hand, there are exceptional cases in which it seems evident from the appearance of the calculi that they are chronologically far removed from each other, although contained within the same bladder. In looking over my specimens of gall-stones removed by operation, I find only three in which it seems self-evident that there is a marked difference in the respective ages of the gall-stones removed. In the prognosis as to the recurrence of gall-stones after operation, a solution of this question would manifestly be of first importance.

In the point of diagnosis it is ordinarily not difficult to come to the conclusion that gall-stones are present, although cholelithiasis, as has been shown time and again by autopsies, is one of the most frequently overlooked of all disorders. Certainly the diagnosis of gall-stones is not made in any community in every tenth or even every thirtieth individual. Yet in from 3 to 10

per cent. of adults—according to Paulsen and Naunyn—varying with different countries, gall-stones are found. Quite recently I had occasion to remove gall-stones from a deaf-mute, 45 years of age, who had previously had her ovaries removed for supposed ovarian disease, and later been treated, a short time before the diagnosis of gall-stones was made, for stricture of the right ureter and consequent renal distension. The attack of colic itself is apt to be mistaken for biliousness, dyspepsia, cardialgia, kidney colic, appendicitis, intermittent fever, intestinal obstruction, pleurodynia, and most frequently of all for gastric catarrh. The variety of affections for which gall-stone may be mistaken gives evidence of the lamentable fact that, with the exception of a passed stone, there is no reliable sign of the presence of a gall-stone or of disease within the biliary passages. Even the Roentgen ray has failed of its first promise. Notwithstanding this defect, it is my belief that where an operation is made for the relief of gall-stones a failure to find one is far less likely to meet the operator than in similar exploratory operations on the kidney. In the cases that have come under my care I have but once failed to find a gall-stone or disease of the gall-bladder. This was a case referred to me by Dr. J. A. Brown of Germantown, of a man of 30 years of age, who had passed eight or ten characteristically faceted stones. On the day fixed for the operation at the Good Samaritan Hospital, he was seized with a colic, which necessitated its postponement. The stone passed and was found in the stool. Three days after the attack was over a cholecystotomy done before the class revealed an absolutely empty gall-bladder and gall-ducts. The last stone had passed.

From an enormous experience, Riedel has come to the conclusion that the biliary colic is not due to the passage of a stone but is the result of an inflammation of the biliary ways. He substantiates this by the frequency with which the attack of colic is ineffectual, so far as the expulsion of a stone is concerned. When by the use of alkaline waters this inflammation is reduced, the transit of a stone is not usually associated with pain. It is the experience of every operator, furthermore, that the mere presence of a foreign body, like a probe or drainage-tube, in the biliary ways is not always productive of colicky pain. In a general way the diagnosis of cholelithiasis is easily made. That as to the location of the stones is far more difficult and often impossible, nevertheless there are certain features which permit one to come very near the truth.

Mr. Jordon Lloyd has very properly grouped gall-stone cases into those in which the gall-bladder walls are yielding and allow of its distension, and those in which the walls are contracted, thickened and indistensible. In either of these groups the stone may lie in the gall-bladder, in the cystic duct or in the common duct. When stones occupy a distended or distensible gall-bladder alone there may be no symptoms except the attack of colic, with a mild jaundice a day or two following it. When the stone occupies the cystic duct, jaundice is not usually present; there are attacks of colic and considerable distension of the gall-bladder. Frerichs had already shown that in these cases the stone within the cystic duct may act as a ball-valve, permitting the entrance of bile into the gall-bladder and preventing its egress. It is in these cases in which the gall-bladder is often very largely distended that we find what Hippocrates already called white bile, which is nothing more than the accumulated secretion of the glands of the

vesical mucosa. Jaundice is not a common evidence of stone in the cystic duct, although in one of my cases a large stone imbedded within it near its confluence with the hepatic duct had so occluded the latter as to produce a very deep jaundice. When there is a stone in the common duct, with a distensible gall-bladder, there is usually present more or less deep jaundice, pyrexia, a distended gall-bladder, and moderate enlargement of the liver from distension of the finer biliary ways.

Stones limited to a shrunken and indistensible gall-bladder are not easily located with precision. They may be suspected where there are frequently recurring paroxysms of pain and where there is tenderness in the region of the gall-bladder, without the presence of a tumor. A stone within the common duct, with dilatation of it and the cystic duct, and a shrunken state of the gall-bladder, probably presents evidences of its location with greater certainty than any hitherto considered. It is in this class of cases particularly that the hepatic intermittent fever of Charcot and of Osler manifests itself. In one of my cases, recently operated upon, these intermittent attacks had lasted for nearly ten years. The attacks invariably began with an intense paroxysm of pain, which was associated with a rigor, followed by temperatures of 103 and 104, and profuse perspiration. While the patient always presented during the entire period of his gall-stone history a sallow appearance, the jaundice became very deep after each attack. Nowhere in the biliary passages is the ball-valve action of a gall-stone so perfectly manifested in the clinical history as in those contained within the common duct. Paroxysmal pains and jaundice, varying in degree, are almost invariable evidences of gall-stones located within the common duct. When gall-stones are contained within the gall-bladder as well as within the common duct, no symptoms exist from which the presence of stones within the gall-bladder could be recognized. From a clinical as well as from the standpoint of operation, the stones within the gall-bladder then play a very subordinate rôle. This applies equally to the rather rare cases in which stones are found within the hepatic as well as the common duct. The condition is uncommon. It has been my privilege to see but two cases, one in an operation, the other in the autopsy of a case seen with Dr. Withrow. The patient, a male nearly 70 years of age, refused an operation, which was not particularly urged, since malignant disease was strongly suspected. Three large stones were found, one in the gall-bladder, one in the hepatic and one in the common duct.

Cholecystitis from other causes than stone can not be distinguished from that due to stone. In three cases I have met this distension of the gall-bladder from obstruction of the cystic duct without the presence of a stone. In each of these cases a tumor was manifest. In only one of the cases had the infection led to pus formation; in two of the cases there was found a thick, ropy, black bile and biliary sand or small calculi. It is interesting to note that in three of my cases of choledochus stone, with the fever curve indicating the presence of pus, pus was not found. The cause of the febrile elevations in these cases of cholecystitis and of choledochus stone, where there is no suppuration, is utterly unknown. It is ascribed to some ptomain poisoning, but it is interesting, in view of the fact that cholemia from obstruction, as in malignant disease, is, as a rule, associated with a reduction, rather than an elevation, of temperature.

Among the diagnostic features of lesions of the biliary ways there is one that merits special attention. I re-

fer to icterus. Until Lawson Tait pointed out that it was rather an evidence of malignant disease than of lithiasis, persistent jaundice was held to be an almost unailing sign of the presence of gall-stones. Latterly its import has been overrated in the diagnosis of cancer. Per se, icterus is a most unreliable symptom, both as to the nature and location of an obstruction. In two cases of men over 70 years of age—one of my own and one of Dr. Evans—in whom persistent icterus, with pain, vomiting and progressive emaciation might have pointed to the existence of pancreatic carcinoma—the operation revealed large stones in the gall-bladder alone. In regard to the importance of this symptom in localization, on theoretical grounds its persistence could only mean obstruction by stone in either the common or hepatic duct. Yet in three cases of empyema of the gall-bladder from stone and in one without stone, which I have operated on, jaundice was both pronounced and persistent without the presence of a stone in the common duct. In all these cases the icterus was of an inflammatory nature, and depended on an extension of the swelling from the mucosa of the bladder to that of the common duct. Riedel has rightly called this condition "inflammatory concomitant or allied jaundice." These cases, and those in which stones are not found, furthermore establish a fact often disregarded. It is that the severest biliary colic does not necessarily depend on the transit of a stone, but on the expulsive efforts of the gall-bladder to force its secretion through a duct largely reduced in its lumen by infiltration of its walls.

The effort of Riedel to ascribe every biliary colic to an inflammatory process rather than to the passage of a stone is futile. I have seen time and again the probing of a healthy cystic duct produce pain very like that of a biliary colic.

Empyema of the gall-bladder is ordinarily recognized with ease, yet are there cases where it has been mistaken for periappendiceal abscess or for a floating kidney. In one case I removed from an incision made for appendicitis four gall-stones. The clinical history was not that of an acute appendicitis. The patient, a very fleshy woman, 40 years of age, had suffered repeatedly from gall-stone colic. For seven weeks before the operation was performed she had been confined to bed with the general evidence of intra-abdominal suppuration. At the time of the operation the abscess was limited anteriorly by the omentum, which had become adherent to the colon and cecum. It could be traced upward toward the region of the gall-bladder, although its upper limit was not accessible. Had it not been for the presence of the gall-stones a differential diagnosis could not have been made even at the time of the operation, since the density of adhesions precluded the search for the appendix.

In a case operated on by me for Dr. Little of Cambridge City, there was a clear history of appendicitis. The operation revealed the presence of four faceted stones that looked at the first glance like biliary calculi, but section showed that they were but calcareous incrustations of small fecal masses—enteroliths. The possibility of mistaking a gall-bladder for a distended kidney exists, since in not a few cases an incision in the loin for the supposed renal disease revealed the presence of gall-stones. Such a case was reported to the Academy of Medicine of Cincinnati a few years ago by Dr. Jones. The error in diagnosis is the more readily made since Riedel has shown that the prolonged existence of gall-stones will often, by traction of a distended gall-bladder, more or less separate from the

under surface of the liver a tongue-shaped lobe, which, being in front of the gall-bladder, gives semblance to the form of renal tumor.

It does not seem probable that any perihaptic suppuration could be mistaken for empyema of the gall-bladder. Nevertheless, a case recently came under my observation in which a differential diagnosis could not be made until the abdomen was opened. The case was that of a lad of 15 years of age, who repeatedly had attacks of pain in the hepatic region. According to the clinical history, these pains were never associated with elevations of temperature. Three weeks before the patient was subjected to operation he had sustained a slight blow upon the abdomen. For a week he did not complain. He was then seized with violent pain in the region of the gall-bladder, which projected itself toward the back. When seen, twelve days after the inception of the disease, by myself and Professor Nickles, all the evidences of intra-abdominal suppuration were present. There was no enlargement of the liver, although an indistinct tumor could be found below the costal arch on the right side, which was exquisitely sensitive to touch. There was a slight sallowness of the skin. The diagnosis lay between empyema of the gall-bladder and subphrenic abscess.

The operation, performed February 28, revealed a normal gall-bladder and appendix; between the liver and the diaphragm adhesions were found. The wound in the peritoneum having been closed, search through the adhesions revealed a small subphrenic abscess, containing not more than two ounces of pus. It was evidently one of the rare cases which have recently been described, of subphrenic abscess, the result of a trauma, and independent of the gall-bladder and the appendix.

Given the diagnosis of gall-stones, the question of treatment interests, besides the patient, medical men and surgeons alike. What are the prospects from internal medication: what the dangers of operation? When is the time for surgical intervention? What form shall it take? The fact that gall-stones are so often found in autopsies without having ever made themselves manifest, so far as can be known, during life, does not argue so much for nonintervention as one would think. These are the cases in which the gall-stones did no harm, their presence was not suspected, and they could, therefore, not have been made the object of an operation. When gall-stones do make themselves manifest by symptoms more or less violent and pronounced, it is well known that they may be entirely expelled or be retained within the gall-bladder without doing further mischief. The period during which a patient may suffer is often measured by decades.

What internal medication can accomplish in cholelithiasis must be left for the consideration of the internists. I have had personal experience in numerous cases in which it, together with restriction of diet, and possibly a trip to Carlsbad or to French Lick, has seemingly put an end to the attacks of hepatic colic. I do not believe, therefore, that every case in which the diagnosis of cholelithiasis has been made is a fit subject for an operation. Furthermore, I am convinced that no complication of cholelithiasis short of secondary malignant disease is so grave but that it may be recovered from. I have twice seen gall-bladder empyema relieved spontaneously when the local and the systemic conditions seemed to make an operation imperative. I have once seen a ruptured gall-bladder terminate in recovery after an abscess of the liver

which it produced was opened. Courvoisier tells us that out of 135 cases of intestinal obstruction by biliary calculus, 70 ended in spontaneous recovery. I beg to present a specimen so recovered, and another specimen removed by operation. In view of these facts, unless indications that are vital exist, the suffering of the patient and the frequency of the attack must determine whether or not an operation is to be done. In every case in which the gall-bladder becomes distended, or in which the signs of empyema are made out, or if any obstruction of the common duct be present, or if only for a short time, an operation should not be delayed. Furthermore, where the diagnosis of gall-stones can not be made with accuracy, and where, from the symptoms, one might suspect the existence of adhesions, such as were mentioned above, and to which Lauenstein particularly called attention, an indication for an exploratory operation may be said to exist.

As in so many other fields of surgery, the early intervention is the least dangerous. When patients afflicted with gall-stones are informed of the dangers that may arise, of the relative mortality of simple cholecystotomy during the interval, and of choledochotomy in subjects reduced by high fever and by jaundice, it is certain that consent to an operation will not often be withheld.

What shall be the usual operation in uncomplicated cases of gall-stones within the gall-bladder? Notwithstanding the objections that have been made to it, I believe cholecystotomy, with the establishment of a biliary fistula at one sitting, best suited to the average case. The mortality from it is very small. Out of forty-seven cases I have had three deaths. One, my first case, was in a man of 76 years of age, who had been intensely jaundiced for six months. The hemorrhage was very severe. I believe that in this case life might have been saved by resorting to Riedel's favorite operation of cholecystotomy in two sittings. The other fatal one was one of empyema of the gall-bladder, with high sepsis and jaundice. No stones were found in the gall-bladder or ducts. The patient died twenty-one days after the operation, with uremic symptoms. Acute desquamative nephritis was found in the kidneys by Dr. Topmuller, who made the autopsy. It was probably the result of prolonged ether narcosis. No peritonitis was found, nor was there anything in the condition of the wound or gall-ducts to account for the fatal issue. The third death occurred in a case of gangrenous cholecystitis, referred to me by Dr. Curry of Lebanon, in which the existing profound sepsis was not relieved by operation.

In another case recently operated upon death followed. forty hours *post operationem*, from intestinal obstruction. My patient was a male, 40 years of age, who had suffered during twenty years with severe biliary colic. In recent years it required from two to three grains of morphia as a first injection to relieve the pain. In the intervals there was a continuous dull ache in the region of the gall-bladder. Light attacks of jaundice had been noticed. The patient had passed what was supposed to be a gall-stone three years before. An examination of the powder showed it to be of some lime salt and devoid of cholesterolin. Operation under chloroform narcosis, was performed Dec. 30, 1897, at Christ's Hospital. The abdomen was very thick and muscular. The incision parallel to the costal-arch was made six inches long. Unfortunately the thorax was a very long one, with the free hepatic margin two inches above the costal arch. The intestine was kept out of the way only with great difficulty, and the gall-bladder, covered by the lingual appendix of Riedel, could be felt, but by no operative technic brought

into view. Within it a single stone could be felt. Cholecystotomy, cholecystectomy and cholecystenterostomy were to me technically unfeasible. In the hope of establishing a ventral biliary fistula along a track limited by adhesions, the fundus of the gall-bladder was caught in the bite of a long forceps and the wound packed about the latter with gauze. The greater portion of the abdominal incision was finally closed. Eight hours *post operationem* vomiting of bile occurred, and during the night the vomiting assumed the regurgitant type. Twenty-four hours after the operation the gauze packing was removed without affecting the symptoms of obstruction. *Exitus lethalis* followed in forty hours. Although in this case I had expected to encounter no operative difficulties, it proved to be the most embarrassing of all my gall-stone cases. It is more than probable that the lamentable result was due to the tight gauze packing, which was made necessary by the tendency of the intestine to prolapse.

The chief objection to the method of cholecystotomy under consideration is the long continuance of the biliary fistula. In most cases the fistula closes in from two weeks to two months. It is very rare for much of the bile to escape from the fistula after the second month. I have the records of only two cases; in one the fistula continued to run for six months and then closed spontaneously; in the other a second operation had to be done, with division of a stricture of the cystic duct, more than a year after the first operation. It is wrong to call the fistulas remaining after cholecystotomy biliary fistulae, for the most part it is not bile that escapes from the wound, but a little glairy mucus slightly tinged with bile. There are two things, in my judgment, that have a tendency to keep the fistula open when the obstruction is not in the common duct. One is the suturing of the gall-bladder too far into the abdominal wound or even to the skin, as is not infrequently done. In my later operations I attach the gall-bladder only to the parietal peritoneum and the fascia over it. The other is the use of the silk ligatures, which I have supplanted altogether by the use of animal sutures in anchoring the gall-bladder.

Ideal cystotomy, an operation first performed by Meredith and highly indorsed by Bernays, Courvoisier and many of the French surgeons, would be the operation if it were devoid of danger. I have performed it twice, once with success, and in one case, which appeared to me an ideal one for the procedure, death resulted from peritonitis. In this case I thought I had sufficiently anchored the sutured gall-bladder to the abdominal parietes to prevent infection of the peritoneum, even if the sutured gall-bladder should not hold. I think I have performed my last cystostomy. Aside from the apparently greater danger of the operation, other objections can be justly brought against it. The drainage of the gall-bladder and the consequent relief of its swollen mucosa can not, of course, be accomplished through it. If a single stone has been overlooked—and that is possible, even probable—the object of the operation has failed of accomplishment. In not a few of my cases, although I had believed I had removed all the stones, small calculi would be repeatedly found in the dressings.

A method of cholecystotomy that must not be entirely overlooked is that originally performed by Boggs, and still advocated by Riedel and many other operators. It is the cholecystotomy in two sittings. Its advantages are that it can be quickly performed, if need be under cocaine, and that the danger of infecting the peritoneum

is nil. I have never performed it, but believe that in one of my cystectomies, fatal from hemorrhage, this method of operation might have been followed by a different result. In deeply jaundiced individuals, when cholemia has existed for a long time, and hemorrhages from the mucosæ show what is to be expected in an extensive operation, and when there is a distended gall-bladder, I think that cholecystotomy in two sittings has its proper place. For the ordinary cases of gall-stones it should be discarded. It prevents absolutely the examination of the deeper biliary ways and makes one helpless in the event of an adherent or fixed stone within them. In probably one-third of all cases of biliary lithiasis one of more stones are impacted within the cystic duct. This is at once made manifest by the hydrops of the gall-bladder. It is difficult enough to remove these with one finger in the gall-bladder and the other without. After cholecystotomy in two sittings a second laparotomy must at times be made to remove these deep-seated stones. No operation or wound of the gall-bladder should be closed until the operator has reasonably satisfied himself that there is no obstruction beyond its neck. Exploration of the cystic duct is ordinarily associated with little or no difficulty, nor is the digital examination from without of the upper two-thirds of the common duct difficult in ordinary cases. With the finger in the foramen of Winslow the free border of the lesser omentum can be palpated without any difficulty, as low as the duodenal terminus.

The difficulty in the way of this palpation, however, may be almost insurmountable. Hartman has called attention to an enlarged lymphatic gland, which I have met in one or two cases, which might very readily impress one as being a soft stone. To the management of the stone in the common duct I shall refer later. No operation of cholecystotomy is complete without an effort likewise to establish the patency of the bile passages by catheterization. In a very large majority of cases this fails. It has been shown that, even in normal subjects, catheterization is not always feasible. In some cases the soft bougie passes without any difficulty as far as the Vaterian ampulla, showing that the ducts are free. In most cases, however, owing to an inflammatory thickening of the mucosæ or to the catching of the bougie in some fold, or from some tortuosity of the neck of the gall-bladder and its ducts, the progress of the bougie is suddenly checked. The meeting of an obstacle does not mean either a stricture or an obstruction. It is a common experience after cholecystotomy to find that bile does not flow through the cystic duct during the first twelve or twenty-four hours. At the time of the operation catheterization necessarily failed. What was an apparent stricture was relieved with the subsidence of the swelling of the neck and duct of the gall-bladder. With this flow of bile through the fistula the surgeon has cause to feel relieved of his anxieties in the individual case.

Since Langenbuch, in 1882, first extirpated the gall-bladder, cholecystectomy has found many followers, particularly among French surgeons, among whom Péan, Terrier and Thiriar may be mentioned. Cholecystectomy has been held up as the only radical operation for biliary lithiasis. Were it impossible for stones to be formed elsewhere than in the gall-bladder this claim could not be questioned, but it has been established beyond doubt that they can form in the common, the hepatic, and even the smaller ducts. Recurrence after cholecystectomy has been observed, and a number of cases have been recorded in which the overlooking of a

stone in the common duct during the extirpation of the gall-bladder has caused the death of a patient. In yet other cases the lethal end was averted by the spontaneous establishment of biliary fistula after the operation. I have twice performed cholecystectomy, not through choice, but through necessity. In the one case a small shrunken bladder suffered in the efforts to liberate it, as I believe, beyond the possibility of repair. In the second case a large and soft bladder was torn into during the manipulation in such a way that a fistula could not be established. Both patients recovered, but the operation proved very much more difficult than cholecystotomy. I believe that cholecystectomy should be reserved for cases in which the position and shrunken state of the gall-bladder and the friability of its walls make cholecystotomy impracticable.

What shall be done with stones in the cystic duct? It has already been stated that in nearly one-third of all cases stones will be found more or less firmly wedged here. As a rule they can be easily pressed back into the gall-bladder by the finger from without, or forced from their position by irrigation. In the case of soft stones they may be crushed between the fingers or by forceps, after the manner suggested by Tate. In the event of these measures failing, the impacted stone should be directly cut down upon and removed. Primary cysticolithotomy is the proper procedure. When the stone has been removed, the closure of the wound with a continuous catgut suture completes the operation. I have thrice opened the cystic duct in this way, without any untoward complication. To prevent possible infection of the peritoneum I have always resorted to drainage and gauze packing in these cases. I believe a cholecystotomy an essential to success when the cystic duct is thus opened. When a fistula has been established no tension whatever can be placed on the sutured wound in the cystic duct, and union goes on unretarded. Kehr has quite recently reported five successful cases to the German Surgical Association. (1894.)

The acme of difficulties in gall-stone surgery is reached when a stone becomes firmly lodged within the common duct, from which only in exceptional cases it can be dislodged into the duodenum, or brought backward into the cystic duct or gall-bladder. When any great dilatation of the biliary ways exists behind the stone, the removal of the stone, from within the cystic duct may be practicable. Unfortunately, in most cases the stone is firmly held within the duct, giving at times the impression of a neoplasm. In two cases at least an inoperable neoplasm was supposed to have been found during the operation, and an autopsy later revealed an impacted stone. The question at once arises whether a stone within the common duct should be left to take care of itself and an anastomosis established between the gall-bladder and the duodenum and colon.

I believe cystenterostomy is so advocated in every case by Murphy, the offending body being left to take care of itself. In my judgment this does not appear good surgery. Wherever feasible the foreign body should be removed by choledochotomy. As a factor in the causation of cancer, its importance is of the first order. Cystenterostomy should be reserved for impermeable stricture of the common duct, as shown by the continuance of a biliary fistula, and for malignant disease. If operations on the gall-bladder were more often performed as soon as the diagnosis of cholelithiasis had been made, it is certain that operations on the common duct for removal of impacted stones would be relatively less frequent than now. As it is, about 6 per cent. of the

operations for cholelithiasis must be made on the common duct.

My personal experience had been limited to 7 cases out of a total of 62 operations on the biliary ways. Two succumbed to hemorrhage from the post-operative oozing so common when jaundice is present. In a third the stones were a part of carcinoma of the common duct. In removing them the vena porta was lacerated. Although the tear was successfully sutured the patient succumbed twelve hours after operation. The mortality of choledochotomy in 1890 was 40 per cent. Kehr has recently reported 32 cases with only 4 deaths. In all my cases, the choledochotomy was followed by immediate suture and drainage. Cystotomy was likewise performed in every case, except one where the shrunken condition of the gall-bladder made it unfeasible.

In conclusion, it might not be amiss to present a short résumé of my operations on the bile passages from my first operation in 1879. There have been altogether 62 operations on 54 patients, 47 being cystotomies for gall-stones, hydrups, empyema or gangrenous cholecystitis; of these 4 died. In 3 cases cysticotomy was added without a death. In 6 cases cystotomy was followed by choledochotomy and in one the latter alone was performed. All these cases have continued well except one; she passed a gall-stone two years after she was operated on, and has since continued well. Of the fatal cases 2 died from hemorrhage; the third was associated with carcinoma of the common duct. Cystendesis was performed twice, with one fatal issue. Rupture of the gall-bladder, I have observed twice. In the one case a retroperitoneal abscess was opened, with recovery. In the second case general peritonitis existed at the time of the operation, which failed to avert death. In one case a laparotomy was done for intestinal obstruction. The stone was found in the ileum about three feet from the cecum. Although operated on within sixty hours of the outset of symptoms, the intestinal paralysis was not recovered from. In one case of a common-duct obstruction from carcinoma of the pancreas, the jaundice was relieved by a cholecystenterostomy by Murphy's button. The patient lived nine months, and the button was buried with him.

While my experience in the surgery of the biliary ways is far from large, I feel warranted in submitting the following propositions for your consideration:

1. The gall-stones found in a gall-bladder are generally formed together, that is about one and the same time. Their removal will not be followed by recurrence unless a reinfection of the biliary ways occurs.
2. Cholecystotomy with drainage should be regarded as the normal operation.
3. Save in exceptional cases, the operation should be done at one time.
4. Ideal cholecystotomy or cholecystendesis is not to be recommended.
5. Cholecystectomy is rarely indicated in acute processes. It is more dangerous than cholecystotomy. Since most stones are formed in the gall-bladder, cholecystectomy is the more radical operation. It should be reserved for chronic cases in which a restitution of the gall-bladder to the normal cannot be expected.
6. Cystotomy is a safe supplement to incision of the gall-bladder for stones of the cystic duct.
7. Choledochotomy with suture and drainage should be considered the routine procedure in common-duct stones. Incision of the duct through the duodenum or from an incision in the loin (Tuftier) will rarely be needed.

8. Cholecystenterostomy has a limited but distinct field of application, i. e., obstruction jaundice from malignant disease or impermeable cicatricial common-duct stenosis.

GALL-STONES.

OBSERVATIONS ON THEIR TREATMENT.*

BY ANDREW J. MCCOSH, M.D.

NEW YORK CITY.

During the past decade it has become generally recognized that the treatment, if not the diagnosis, of certain diseased conditions demands from the moment of their onset the joint attention of both physician and surgeon. Among such diseases may be mentioned appendicitis, pyelitis, and, in its various forms, cholelithiasis. In the first mentioned of these diseases surgical observation is considered of so much importance that the case is generally transferred to the surgeon, or he at least is summoned by the family physician to see the patient in consultation, as soon as a probable diagnosis of appendicitis has been made.

In cases of cholelithiasis the drift of opinion is in the same direction, though for manifest reasons the importance of early surgical observation is less urgent. In the diseases just mentioned, as in all others, it is but natural and right that the family physician should first be summoned, but he owes it to his patient as well as to his own reputation, that a surgeon should be called early in the course of the disease, for it is only thus that a just estimate of the progress of the case can be formed whether it be toward permanent recovery, toward operative interference or—what is most common in such cases—toward a temporary stage of recovery. It is not alone the immediate outcome of the attack which is to be considered, but an important observation can thus be made and a definite opinion formed on the nature and severity of the disease should similar attacks occur in the future.

The decision as to the propriety of operation or as to the most favorable moment for such interference is often difficult and requires the nicest judgment, which must generally be based upon a large experience. The personal equation, and perhaps the training of the practitioner, will very often influence him in the decision of this question. Many of us who see such cases in consultation with physicians can frequently tell before visiting the patient whether it be wise to at once order preparations to be made for operation. When summoned by certain physicians I often feel so certain of the probability that immediate operation will be needed that all necessary arrangements are made before leaving my office.

The remarks just made apply of course only to large medical centers. The country practitioner judges his case from the standpoint of both physician and surgeon and we surgeons from the cities are often surprised by the keenness of observation, by the excellence of the judgment, and by the broad grasp of the essential characteristics of the case which are so often shown by our colleagues in the country.

Turning now our attention more particularly to the subject of this paper, cholelithiasis, we are confronted with a number of questions of the greatest importance, some of which have yet to be solved. Among these may be mentioned: What period of time is necessary for the formation of a gall-stone? Much difference of opinion

exists on the subject, and the limits of the answer seem to be from a few days to many months. Another question is the influence of medical treatment on gall-stones. Prophylaxis is of the greatest importance, but the general consensus of opinion seems to be that gall-stones when once formed can not be materially influenced by internal medication. The character of the bile and the state of the lining membrane of the biliary passages may be favorably modified by medical and hygienic treatment, but a stone once formed can not be changed by any such treatment. If not too large, conditions for its passage into the intestine may be made more favorable, or the biliary passages may be brought into a condition where they do not resent the presence of a calculus, but more than this can not be expected from treatment by diet, drugs, or exercise.

It is now believed by many that so-called biliary colic is not produced so much by the passage through or impaction of a calculus in the bile passages as it is by inflammation of the gall-bladder and ducts. As long as the bile and the biliary passages remain normal a gall-stone will as a rule produce but few symptoms. It was formerly believed that gall-stones produced colic only when they began to move along toward the duodenum, thus causing an irritation of the ducts, and that reflexly vomiting and often fever would accompany the attack, but that jaundice and distension of the gall-bladder supervened only when the stone became impacted. We now know that this view is not entirely correct. It is true that a calculus is generally the cause of the inflammation in the bile passages—probably about 90 per cent. of the cases—but it is the inflammatory process and its complications rather than the stone which produce the severe symptoms. Distension of the gall-bladder will often take place when the cystic and common ducts are entirely free from stones, and not only will the usual symptoms which are generally attributed to the passage of a stone, such as colicky pain and vomiting, be thus produced, but also those of graver character, such as chills, fever, and jaundice, and death even may result without the impaction of a stone. It is sometimes forgotten that jaundice may thus be produced, and I find it to be a not uncommon error to suppose that the cause of jaundice occurring in an attack of cholelithiasis must be the downward passage of a calculus and its impaction in the common duct. In this connection let me narrate the following case:

CASE 1.—Mrs. A., aged 29 years, had been a vigorous girl, but since the age of 15 years had been subject to attacks of colicky pain in the abdomen several times a year. These attacks lasted from twelve to thirty-six hours, and were not often severe enough to confine the patient to bed. She had an attack of typhoid fever in the spring of 1898. On Feb. 19, 1899, the patient was seized with sharp pain over the region of the gall-bladder, and until February 26 she suffered from several severe attacks of pain, occurring daily, generally accompanied by vomiting. On account of the severity of the pain she had to be kept almost constantly under the influence of morphia. On February 25 slight jaundice appeared and her temperature rose to 101. Her physician, Dr. Bradshaw, wisely decided that operation was necessary. She was admitted to the Presbyterian Hospital on Feb. 26, 1899. Her temperature was 103, pulse 114 and she looked sick, the abdomen was moderately distended and there was tenderness over the region of the gall-bladder. She was distinctly jaundiced.

Operation was performed Feb. 26, 1899, under chloroform anesthesia. A 4-inch vertical incision was made through the right rectus muscle. The transverse colon was found adherent to the liver. On separating the adhesions a small, much thickened and adherent gall-bladder was found, about the size of a small walnut, there were also numerous adhesions about the cystic duct in which were felt two small calculi. The gall-bladder was opened, and through it the stones were extracted: they were three in number, with very sharp angles, and each

*Presented to the Section on Surgery and Anatomy, at the Fifteenth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 9, 1899.

one not much larger than a millet-seed. The opening into the gall-bladder was sutured to the parietal peritoneum. The discharge of bile was very profuse during the next two or three weeks and caused a severe irritation of the skin, which produced more or less vomiting, which was probably nervous in its origin, but which for a few days in the second week was quite serious. The bile ceased to flow on March 24—the twentieth day. Up to the present time the patient has remained in perfect health.

Another stumbling-block which is often found in the path toward a correct diagnosis is the idea that if a stone be impacted in the common duct, the result will be a distended gall-bladder. The physician will sometimes argue that a stone can not be lodged in the common duct, because the gall-bladder is not distended, and he, therefore, decides against operative interference because the gall-bladder is not palpable. With a recent impaction, such distension is not uncommon, but with impaction which has persisted for any length of time a shriveled, thickened gall-bladder is the rule rather than the exception. In the case, the narration of which follows, the gall-bladder, which was opened on the twentieth day after impaction, was found markedly distended.

CASE 2.—R. F., married, aged 33 years, had always been healthy, having had three children. There was no history of previous abdominal pain. About Sept. 20, 1898, she felt rather miserable and on October 6 she experienced some vague abdominal pain, located at first near the umbilicus and later in the right hypogastric region. There was no nausea nor vomiting. The bowels moved after a dose of salts; the pain continued to increase until the date of her admission to the hospital, October 8.

On admission her temperature was 103 and pulse 90. She was a fairly well-nourished woman. There was no jaundice. The edge of the liver was felt an inch and a half below the costal margin; the abdomen was somewhat tympanitic; there was considerable tenderness in the right hypochondriac region, and there was felt, extending from the costal margin as far down as the umbilicus, a mass which seemed as large as a large coconut. It was very tender, and moved slightly with respiration. October 9 and 10 there was but little change; temperature 100.5 to 101.5. The mass was slightly tender but there was no diminution in its size or tension.

Operation was performed October 11, under chloroform anesthesia. A four-inch vertical incision was made through the right rectus muscle; the liver edge extended two inches below the costal margin; the gall-bladder was much distended and very tense. The patient was turned on the right side, gauze pads being packed around the gall-bladder; a trocar was plunged into it and gave exit to about six ounces of fluid, which at first was thin and clear bile, and then it became thicker and finally consisted of pus and mucus. The finger inserted into the gall-bladder felt a stone, oval, non-faceted, about 1½ inches in length. It was extracted. The edge of the cut gall-bladder, whose wall was much thickened, was sutured with catgut to the parietal peritoneum and the remainder of the wound closed by suture. The patient made a good recovery. There was considerable discharge of bile, which, however, steadily diminished until November 2—22 days—when it ceased. The maximum temperature was 100.5 on the second and third days. The wound was entirely healed on November 8, on which day she was discharged from the hospital. She reported on May 20 that she had enjoyed perfect health since the operation.

In the next case which I will narrate the impaction had existed for four months and the gall-bladder was found shrunken and much thickened.

CASE 3.—R. H., aged 50 years, married, had enjoyed fair health, though she had occasionally suffered from attacks of so-called indigestion. In February, 1897, she suffered for ten days from a short attack of what was called biliary colic; she remained well for two weeks and then came another severe attack. Since then until May 24, 1897, when she was admitted to the hospital, she had suffered from similar attacks once or twice each week. The attacks generally lasted about two days, and began with severe pain over the region of the gall-bladder, with vomiting. This was followed by chills and sweating. From May 10 to 12 she was slightly jaundiced. During most of this time the urine had been of a dark mahogany color.

On admission, May 24, she was found to be a well-nourished

woman; the abdomen, which was very fat, was somewhat tympanitic, and just below the free border of the right ribs there was slight tenderness, but no resistance and no tumor could be felt.

Operation was performed May 26, under chloroform anesthesia. A four-inch oblique incision was made an inch below the right costal margin, and the omentum was found adherent to the under surface of the liver, which was small in size. Under its edge was felt the shrunken and much thickened gall-bladder, adherent to the neighboring structures. After considerable search, which was difficult on account of the adipose tissue and numerous adhesions, a calculus was felt at the junction of the common and cystic ducts and another in the common duct close to its entrance into the duodenum. As it was impossible to move either stone, the common duct was therefore hooked up with the left index finger and its wall incised and a three-faceted stone, the size of a hickory nut extracted. The other stone, somewhat smaller in size, was pushed through the same opening. The opening in the duct was closed by continuous catgut suture. A gauze drain was inserted and the remainder of the abdomen closed. The patient made a good recovery, there being a slight leakage of bile until June 27. She was discharged from the hospital July 2, and since that time has enjoyed good health.

In this connection it may be of interest to state that there are reported in this paper nine cases where cholecystotomy was done for stones impacted in the common duct. In six of these a thickened, contracted gall-bladder was found, in one a thickened but moderate-sized gall-bladder, and in two a thickened and distended gall-bladder containing pus.

CASE 4.—E. J., aged 52 years, married, for eight or ten years had been subject to bilious attacks consisting of pain in the upper right side of the abdomen and accompanied by vomiting; the attack lasted usually from one to three days; she had been jaundiced but once. The present illness began on May 8, 1898, when she was seized with severe paroxysmal pain below the right costal margin. There was no fever nor vomiting and no jaundice. On May 15 she had another attack of severe pain and vomited persistently for twenty-four hours. There was marked local tenderness in the right hypogastric region. On May 17 slight jaundice appeared.

She was admitted to the hospital on May 18. The abdomen was slightly distended; she was tender over the right hypogastric and lumbar regions; there was marked jaundice; temperature 102; she was very drowsy.

Operation was performed May 19 under chloroform. A mass could be felt in the epigastric region just to the right of the vertebral column. A four-inch vertical incision was made through the right rectus muscle. The edge of the liver was hard, irregular and much engorged, and was slightly adherent to neighboring structures. The gall-bladder was not visible. There was felt, just to the right of the bodies of the vertebrae, a hard mass the size of a duck's egg, to which were firmly adherent omentum and intestines. The mass was at first supposed to be a carcinoma, but after separating adhesions it was found to be an enormous stone, occupying the entire length of the common duct, which had become enormously distended to contain such a large mass. It was with considerable difficulty that the duct could be exposed so that a three-inch incision could be made through its wall, which was very much thickened.

The stone, however, was too large to emerge from such an opening. It was, therefore, broken into several pieces with the points of a strong pair of scissors and was extracted piecemeal. It was then found that the mass consisted of an amalgamation of a number of stones, the two largest being about the size of a walnut. These were so firmly agglutinated that considerable force was required to separate them. The mass was four inches in length and the maximum circumference was six inches. A large amount of bile escaped after the extraction of the stone. The cystic duct was shortened and was apparently empty, but the finger passed on toward the gall-bladder. At its neck was found a constriction, and beyond this in the bladder itself were found thirty or forty smaller stones, the largest being the size of a hickory nut. The gall-bladder was contracted around these stones and was much thickened. It was not opened. The opening in the common duct was partially sutured with catgut. To facilitate drainage a counter-opening was made in the right lumbar region, through which a strip of gauze was passed, as was also another which was led out through the abdominal opening. Considerable shock followed, but she soon rallied. Her mental state improved daily, though it was two days before it became normal. There was a free discharge of bile until June 20—32 days—when it ceased. The maximum temperature was 101 on the second day. The

patient was discharged cured on June 30, and up to April, 1899, had remained in good health.

It should also be borne in mind that cholecystitis is generally infectious. Normal bile is sterile, but it is easily infected, and the proof is rapidly accumulating that in the majority of cases of cholecystitis the colon bacillus and often other pyogenic germs will be found in the gall-bladder, and that even before the secretion becomes purulent the general infection may be so severe as to seriously endanger the life of the patient. Case 1 illustrates this point.

That the gall-bladder and passages are easily infected is shown by their behavior in typhoid fever. In the chapter on this subject in Keen's valuable book, it is very clearly shown that the gall-bladder contains the typhoid bacillus in nearly every case of typhoid fever. Thus Chiari reports that in 22 cases of typhoid fever, he has found on bacteriologic examination the typhoid bacillus in 19. Westcott has tabulated 74 cases of typhoid infection of the gall-bladder which have accompanied or followed typhoid fever. That the bacillus penetrates even the gall-stones is shown by the result of a hundred examinations made by Fournier, in 38 of which the typhoid bacillus was found. In this connection the following case will be of interest:

CASE 5.—Mrs. Y., aged 26 years, of good family history, for several years had complained of occasional attacks of pain in the right hypochondrium, coming on with great severity at night and occasionally accompanied by vomiting. The pain soon subsided, and she was always up and about the next day. After her marriage, in April, 1894, the attacks entirely disappeared. She gave birth to a child on April 3, 1895, and her convalescence was normal; after she had been up and about for about two weeks she began to complain of chilly feelings, pain in the back and in the extremities, and sent for Dr. E. W. Hedges of Plainfield. These symptoms increased for six days, and were accompanied by a gradually rising temperature and pulse and the probable diagnosis of typhoid fever was made. There was no pain over the liver, but on May 25 a tumor of small size was palpable in the hepatic region. At the end of twenty-four hours it had increased considerably in size and was more tender on pressure. On May 29 I saw the patient, in consultation with Drs. A. H. Smith and Hedges. There was then a tumor in the right hypogastric region, which seemed about the size of a large cocoon. There was some abdominal distension and some vomiting. There was also marked tenderness in the right side of the abdomen.

The symptoms pointed either to an abscess, the result of a perforated typhoid ulcer—the diagnosis of typhoid fever having already been made by Dr. Hedges—or to a cholecystitis. The temperature was 103.5, pulse 128. The patient appeared very ill. Immediate operation was advised, and accordingly was done in the evening, under chloroform anesthesia. A four-inch vertical incision was made to the right of the right rectus muscle. A much distended gall-bladder, exceedingly tense and slightly adherent to adjacent structures was found. The patient was turned on the right side, and the bladder surrounded by gauze compresses, a trocar and canula was plunged into the distended gall-bladder. Pale, green bile spurted out through the canula with such force that it struck the wall, six feet distant. The bladder was then opened by an incision, and a finger passed in felt as if it was entering a bag of fine gravel. Gall-stones which would have nearly filled a pint measure was scooped out, the largest being about the size of a large pea, and the smallest resembling caviar. It was roughly estimated that about 5000 stones had been removed. The gall-bladder was sutured to the parietal peritoneum and a tube inserted. The wound did well, but the temperature and pulse rose steadily until on June 7 it reached 107. The spleen was easily palpable and rose-colored spots appeared on the abdomen. At the end of the third week the fever began to decrease and reached normal at the end of the fourth week. On June 8 a stitch was removed, and a leakage of bile, which had still persisted, ceased on June 12. The patient made a good recovery from her typhoid fever and has remained perfectly well ever since.

The indications for surgical interference in cases of cholelithiasis have in the past few years become much more clearly defined, though the importance of operation

for the relief of these conditions is not so strongly impressed on the profession at large as I feel sure will be the case in the course of the next few years. The different views on this subject seem to be in very much the same stage as were those on appendicitis eight or ten years ago. It is, however, true that dilatory tactics in this latter disease are much more precarious than in the case of cholelithiasis, and the public at large have not as yet become educated to that degree that our patients insist on operation for the relief of gall-stones as they so often do for the removal of a diseased appendix. On account of this less dangerous character of gall-stone attacks, I doubt if the indications for operation will ever be so clearly defined or certainly as urgent as are those for appendicitis, and there will always be room for a considerable difference of opinion on this subject.

It is often a difficult question to decide when the physician should cease his efforts to cure by purely medicinal means and should transfer the patient to the surgeon for operative interference. A great change has taken place in our views on this subject within the past few years, and the modern physician is now apt to call upon the surgeon at a much earlier date than was the custom ten, yes, even five, years ago. The results of operation on the gall-passages have been so successful that many physicians, if not their patients, will decide that operation is preferable to a life that is constantly threatened by attacks of biliary colic or to a regimen which takes away much from the charm of living. Unfortunately, however, this view is not universal, perhaps through ignorance of the success of operations on the bile-passages or perhaps as the result of the physician's own experience with operations which have been done on some of his own patients, who have been transferred to the surgeon only as a last resort when they are thoroughly poisoned, when their kidneys have become overburdened, and when the mortality of operation must be very great. I fancy that many of the surgeons here present have with difficulty been able to conceal their indignation when after weeks, yes months, of so-called "watching," a patient, semicomatose with high fever, with urine loaded with albumin and lacking in any reparative or resisting power has been handed over to him for operation. He is often tempted to decline to interfere, but still he feels that it is his duty to make an attempt to save a life, even though the chance be but 1 in 10 instead of 9 in 10 as it should have been. The reason generally advanced for such delay is that the diagnosis is uncertain and that the case must be kept under observation until it can be ascertained with certainty that the fever, that the jaundice, that the sepsis are due to a gall-stone rather than to a catarrhal cholelithiasis. Is this right? Should not rather a laparotomy be advised, call it exploratory if you like, the danger of which, should the operation be fruitless, is very slight.

I speak strongly on this subject, for it has been my lot to receive several patients in this deplorable condition when there had been every opportunity weeks previously to give the patient a fair chance for recovery through operative interference. It is but lately that I saw such a case with a physician of wide experience; on my urging immediate operation he replied, "the result of the operation on the last patient I sent you was not so favorable as to encourage me to advise operative interference in this case." Let me narrate the history and allow you to judge whether it was not the inexcusable delay rather than the operation which caused the fatal result.

CASE 6.—B. B. had enjoyed fair health, with the exception of

so-called stomach attacks, until the beginning of 1895, two years before her present illness began. Since then, however, she had never been entirely well, being troubled every three months or so with an attack which gave the following symptoms: She would be seized with sudden cramp-like pain in the region of the liver and in the pit of the stomach; vomiting would follow, which was at times severe and continuous for a day or two. The pain continued generally for from twelve to fifteen hours. There had never been jaundice. The entire attack would generally continue for two to four days. Her last attack occurred on April 23, and from the onset seemed more severe than usual. April 25 she had a severe chill, followed by fever; on the 26th her symptoms were worse, and on the 27th I was called in consultation with her physician. Her temperature was then 103.5; she was very drowsy, and distinctly jaundiced. There was some resistance and tenderness over the region of the gall-bladder. I urged immediate operation, but it was decided to "watch" the patient for a day or two. This process of watching continued for five days longer, during which time the serious symptoms continued, the temperature being from 102 to 104, the mind being more or less obscured by the choleric poisoning. The patient also vomited. On May 1 she was sent to me for operation. On admission to the Presbyterian Hospital she appeared semicomatose. Her temperature was 105, pulse 112. Her urine contained albumin and granular casts. Though the chances for recovery seemed few, it was decided to operate, and on the same day chloroform was administered and a four-inch transverse incision was made below the costal margin. The omentum was found adherent to the abdominal wall and to the edge of the liver. On separating the adhesions a shrunken, thickened gall-bladder was exposed. A stone was felt in the common duct near the duodenum. It was extracted through an incision in the wall of the duct, which was afterward closed by a catgut continuous suture. A gauze drain was led out through the abdominal wound. On May 2 the patient was stupid and drowsy, though her temperature remained below 100. On May 3 she passed but little urine, which was loaded with albumin and contained granular casts. Her temperature began to rise, and she died on May 5, from poisoning which was mainly uremic in origin.

In this connection let me briefly quote a few statistics:

Kehr performed 180 gall-bladder operations—including cholecystotomy, cholecystectomy, cystendesis, etc.—and lost only three patients. Out of 46 choledochotomies he lost 4 patients; out of 360 laparotomies done for disease of the biliary passages with all their complications he had 42 deaths—a mortality of 11.7 per cent.—and if out of this number are excluded those cases which had hopeless liver disease such as cancer, suppurative cholangitis, etc., twelve died—an operative mortality of only 3.8 per cent. Riedel, in 100 cases where he operated for cholecystitis—hydrops and empyema—lost none of his 98 cholecystotomies, the only two deaths being in cases where he had extirpated the gall-bladder. On the other hand, Naunyn reports 150 cases of disease of the biliary passages treated conservatively by medicinal treatment alone, with a mortality of 6.6 per cent., due to complications, exclusive of cancer. We must also remember that recovery in many of the 93.5 per cent. who did not die must have been temporary only, as the stone still remained.

Let us briefly consider a few of the conditions where operative interference must at least be discussed, and I will take the liberty of illustrating each variety with cases which have occurred in my own experience which will best perhaps indicate my beliefs and practice.

CHOLECYSTITIS.

This is most often due to the presence of a gall-stone, but whatever be its cause, the indications for treatment are very similar. Should the attack be acute and subside in a week or two without symptoms of sepsis or cholangitis, operation is not indicated. Should, however, the distension of the gall-bladder, with pain and some fever, persist for weeks the question of operative interference must be seriously considered. Of course, with

patience the attack may subside, but on the contrary grave complications may appear. The longer the duration of the inflammation, the greater will be the disposition to future attacks. This is especially true if the inflammation has been excited by a calculus, because the chances for its passage into the duodenum, after the attack has persisted for weeks, is so slight. With this double predisposition—an altered lining membrane and a stone as an irritant—the risk of future trouble is very great. Is it not wiser, then, to end the present attack and to remove the tendency to future attacks by means of an operation, the risk of which is so slight, provided it be done early in the course of the disease before serious structural alteration in the bile-passages and neighboring viscera has taken place, as under such conditions the operation may become one beset with great difficulties and attended by a serious risk? Whether interference is to be recommended at the end of three or in six weeks will depend on the severity of the attack and perhaps also on the social condition of the patient. Case 2 already reported illustrates my views in this connection, and I will take the liberty of reporting still another case in which a cholecystotomy was done on the fourteenth day of the attack.

CASE 7.—N. E., aged 34 years, married, until present illness had enjoyed fair health. On January 13 she felt chilly and had some general abdominal discomfort with considerable distension; she was confined to the house but did not go to bed until January 15, when she was seized with severe pain in the right hypochondriac region, radiating through toward the back. She vomited once; the pain and tenderness continued with probably some fever until January 23, when she entered the Presbyterian Hospital.

On examination she complained of slight tenderness, but said that her pain had been gradually disappearing; there was no jaundice and no vomiting and the stools were of good color. Below the right margin of the ribs was felt a soft fluctuating mass, moving with respiration, which did not seem adherent and was but slightly tender. The liver edge was felt $1\frac{1}{2}$ inches below the ribs. Her temperature remained between 99.5 and 101. Slight tenderness persisted, and the tumor seemed to increase in size.

On January 27 chloroform was administered. As the tumor seemed to be situated rather far externally there was some doubt as to the certainty of the diagnosis of distended gall-bladder, therefore a one-inch intramuscular incision was made in the right loin, an inch below the border of the ribs, and on exploring with the finger it was found that the tumor consisted of a distended gall-bladder. The wound was closed and a fresh incision four inches in length was made through the right rectus muscle; the gall-bladder was distended to the size of a large cocoon and was very tense. It was carefully walled off by gauze compresses. The patient was turned on her right side, and through a trocar plunged into the gall-bladder eight to ten ounces of a greenish bile, followed by considerable mucus, flowed out. The opening in the gall-bladder was enlarged, and the finger, inserted, felt in the cystic duct at its neck a calculus the size of a hickory nut. It was extracted and exploration failed to find any other calculus. As the gall-bladder was moderately thickened and its lining membrane unhealthy, a cholecystotomy was done, the gall-bladder being sutured with catgut to the parietal perineum and the abdominal wound closed except for a space through which a strip of gauze, which had been inserted into the gall-bladder, emerged. The patient made a good recovery, bile ceasing to flow on the twentieth day, and the wound being completely closed on February 25, when she was discharged. She has remained perfectly well up to the present time.

It must be borne in mind that both these patients were working women for whom a long illness or a state of semi-invalidism was a very serious matter.

Should at any time in the course of such an attack symptoms of cholangitis, sepsis, empyema of the gall-bladder, pericholecystitis or abscess of the liver ensue, there can be no question as to the urgency of operative interference and the delay in such cases is unjustifiable. Let me illustrate this by two cases.

CASE 8.—Mrs. N., aged 59 years, for thirty years had been

subject to severe attacks of colicky pain in the abdomen. For the past two or three years these had been so frequent that the patient had been a semi-invalid. She had scarcely dared to go out, as any excitement or undue exertion was apt to precipitate an attack. They averaged about ten a month and would last from two to twenty-four hours. During the past year they became much more frequent and more severe, were generally accompanied by vomiting, and on several occasions the patient was jaundiced. Recently their duration had been from one to three weeks. During the past year the patient had been advised by her physician, Dr. Bradshaw, to undergo operation, but she was encouraged to decline any operative procedure, by the advice of a distinguished consultant who saw the patient on several occasions. On July 1 the patient had one of her severe attacks, but it was accompanied by fever, and later by septic symptoms. The fever continued until the time of the operation, in August. She vomited frequently and became very much emaciated; had a varying temperature, from 103 to 103.5. I first saw the patient on August 8. Her temperature was then 104, pulse 120. She was thoroughly septic, looked very weak, and seemed scarcely able to endure a serious operation. The abdomen was somewhat distended and boggy; there was some tenderness and resistance over the region of the gall-bladder, and also an indistinct mass could be felt. At the earnest solicitation of Dr. Bradshaw and myself, the patient consented to operation.

Chloroform was administered Aug. 10, 1898. A four-inch vertical incision was made through the right rectus muscle; the omentum, edge of the liver and colon were found adherent. The gall-bladder was much thickened around two stones the size of a hickory nut. Another stone of about the same size was felt in the common duct close to the head of the pancreas; this was raised up by a finger passed into the lesser omentum and the stone was extracted through a vertical incision into the wall of the duct. This opening in this was sutured with catgut. The opening into the gall-bladder was not sutured, but was surrounded with strips of gauze, which emerged through the abdominal opening. Considering the patient's condition there was but moderate shock. She made a slow recovery. There was a moderate discharge of bile for fifteen days, when it ceased. Up to the present time the patient has remained in good health.

REPEATED GALL-STONE COLIC.

It is in cases of this kind that there must always be allowed a certain latitude of opinion regarding the indications for operation. In the first attack or even in the second, interference is not often indicated except complications arise, such as infective cholecystitis, cholangitis, liver abscess, etc. When, however, attack follows attack and the patient's health, or at least happiness, becomes undermined by their frequency, then operative interference must be seriously considered. The social standing of the patient may have some bearing in the treatment. If it be such that a visit to Carlsbad or that a life surrounded by hygienic safeguards can be pursued, the indications for operation are perhaps not so strong, for by such means the frequency of the attacks can be somewhat controlled and the risk of grave complications lessened. Among the "workers," however, no such precautions are possible, and the expense, from a financial point of view, the pain of repeated attacks, and the danger of serious complications must be weighed in the balance against a mortality of perhaps 1 per cent, which attends operation for the relief of this condition, when uncomplicated by serious liver disease.

There are several conditions which are of influence in deciding for or against operation. If calculi appear in the stools, and especially if they are friable, there is a better chance for spontaneous cure than in cases where the stone is locked up in the bile passages. If it does not emerge, it is probably of large size, and this is still more probable if jaundice be absent. Once trouble in the gall-passages has been excited by the irritation of such a stone or indeed by a collection of smaller stones, the chance of recurrence of the attack is great, and the safer plan of procedure is to remove the cause rather than run the risk of one of the many possible complica-

tions which occur and end so fatally in about 6 per cent. of such cases.

It is probable that a stone greater in diameter than 2.5 cm. can not emerge through the papilla into the duodenum, and the large stones which eventually pass out of the rectum have invariably entered the intestinal canal by ulceration out of the gall-bladder into the stomach or intestine. If the ulceration goes straight, the outcome is a fortunate one, but not infrequently the stomach and intestine will not arrange themselves for a safe and direct passage of the stone from the bile-tracts into their caliber, and in such cases an intra-peritoneal abscess will result or a general peritonitis be started. The following case is an example of a fortunate outcome from such an ulceration stump.

CASE 9.—I. S., aged 34 years, married, was admitted to hospital Oct. 3, 1897. Until three years ago the patient had been a healthy woman, with the exception of a severe illness eighteen years before, which had resulted in loss of sight. In 1894 she was laid up in bed for three weeks with fever, severe pain in the right hypochondriac region, vomiting and abdominal distension, and ever since she has had constant tenderness below the free border of the right ribs. She has also had several mild attacks similar to the first, each one accompanied by severe pain and jaundice. When she turns on her left side she has a sensation as if a heavy body in her abdomen dropped toward her left loin. The last attack began in the end of August, accompanied by much pain, marked jaundice and some fever.

She was admitted to the Presbyterian Hospital October 3. She complained of considerable pain in the right hypochondriac region, where there was also marked tenderness, which was greatest in the midaxillary line, just below the border of the ribs. In the region of the gall-bladder there was considerable resistance, and an indistinct mass could be felt. The patient was most comfortable when lying on the right side; her tongue was heavily coated but she did not vomit. Her highest temperature was 99; pulse 88.

Operation was performed October 13 under chloroform anesthesia. A four-inch vertical incision was made through the right rectus muscle. In the region of the gall-bladder was felt a hard mass, which was found after separation of numerous adhesions to consist of adherent stomach, gall-bladder and omentum. On separating the latter the stomach and gall-bladder were found firmly fastened together over a considerable area. On separating these two structures, an opening in the stomach wall, circular in shape and about $1\frac{1}{2}$ inches in diameter, was found communicating with a smaller opening in the wall of the gall-bladder. This latter organ was small and shrunken, not larger than a walnut, with wall very much thickened. It was excised, the cystic duct being ligated with catgut. The gastric perforation was found on the anterior wall of the stomach near the pylorus, the edges were trimmed and sutured.

It must be remembered, however, that it is not always the large stones which produce the severest symptoms. The case first reported developed the most serious symptoms and yet the cause was three minute calculi, barely larger than the head of a pin. It should also be borne in mind that the irritation of a calculus is the most common exciting cause of cancer of the liver and bile passages.

An argument which is at times used against operation in these cases is that if you remove the offending calculi it is probable that new ones will form and excite further trouble. A similar argument could be employed against almost any conservative operation in surgery and does not seem worthy of serious attention. Even if calculi should form, they can be easily removed by a simple operation, which should be extraperitoneal and free from risk.

JAUNDICE WHICH PERSISTS.

This does not always mean an impaction of a stone. It will often arise from a cholecystitis. In a case of prolonged jaundice it is often difficult to determine the proper moment for operation. In the past and, even though to a less extent, in the present the tendency

has been and is to delay operation too long in these cases. A reaction, however, from this dilatory and often unjustifiable treatment is beginning the show itself, and, as in many other progressive and beneficial movements, the pendulum may swing in the next few years too far in the other direction, but it still needs a vigorous propulsion, in this country at least, before it reaches an even medium position.

The main reasons for delay in the past have been due to doubt as to the following questions: Is the jaundice due to a stone or is it catarrhal cholelithiasis? Will not the stone be forced out of the bile-passages into the intestine by nature? Will it not drop back into the gall-bladder, where it may remain innocuous for years? In regard to the first of these reasons for doubt it may be granted that in some patients the severe characteristic pain which is caused by the passage and impaction of a biliary calculus may be absent. An anticipatory hypodermic of morphin may have cut short the pain before special attention was attracted to its severity, or the personal characteristics of the patient may have been such that the pain was not regarded as of so much importance as the severe vomiting followed by jaundice which may have been the most prominent symptoms. The following quotation is from the recent excellent address of Mayo Robson in "The Dangers of Delay:" "I think the blame rather lies in the traditions of the past that we have not yet completely shaken off, in the reminiscences of the old days when an operation was a truly dreadful business to be avoided if possible, and possibly it lies a little in that *laissez faire* policy of the old school, for there are as yet a good number of Micawbers in the world and we know that they are sometimes encouraged by the unexpected turning up.

It may be only after the expiration of two or three weeks, when the symptoms do not abate, that the probability of a catarrhal jaundice can be cast aside. When at the expiration of this time the local tenderness, the pain, the vomiting and the jaundice still persist, and especially if the fever assumes a septic course, the probability of a stone being the cause of the attack becomes very great. The presence or absence of a palpable tumor would be of the greatest importance, but unfortunately, this is frequently absent, and the longer the attack has persisted the more likely is such a tumor to be wanting, for, as has already been stated, if the impaction in the common duct has existed for a length of time, a shrunken gall-bladder is found more often than is one distended with bile. The absence of such distension is an argument which in my experience is often used against the need of operative interference. As an illustration of what I have said, let me narrate the following case which I saw on the eighteenth day of the attack and where I advised operation, which, however, was declined. The patient died on the twenty-fifth day.

CASE 10.—B. F., aged 37 years, the mother of several children, gave a history of occasional attacks of pain of a colicky nature in the upper part of the abdomen. She had, however, enjoyed moderately good health until the morning of Feb. 19, 1897, when she was attacked with cramp-like epigastric pain and vomiting, which lasted until the afternoon, when she was given a hypodermic injection of morphin. On February 20 slight jaundice appeared, which gradually deepened. From the 20th to the 28th the patient had an average temperature in the morning of 99.5, and in the evening of 101. There was great nausea and some vomiting. From March 1 to 8 the temperature varied between 99.5 in the morning and 102.5 in the afternoon. The other symptoms continued as before, except that she frequently felt chilly. On March 9 I saw the patient, with Dr. H. Her temperature was then 103.5, pulse 110; she was markedly jaundiced; her tongue was heavily coated and dry; she vomited occasionally; her abdomen was moderately distended, and just

to the right of the median line in the epigastric region there was marked tenderness on pressure and some muscular resistance. I made the diagnosis of stone impacted in the common duct, and advised immediate operation. It was, however, not performed. From March 9 to 15 I learned that the temperature was somewhat higher. The patient gradually became more and more drowsy and her urine became scant and was loaded with albumin. I was asked to see her again on March 16. It was then almost impossible to arouse her. The daily amount of urine was only 13 ounces, and it was full of casts. Her pulse was 130. The case seemed hopeless from any point of view, and I declined to operate. She died on the following day, and at the autopsy, on which the family insisted, there was found in the common duct a stone the size of a pigeon's egg. The kidneys were in a condition of advanced interstitial nephritis.

I may add that the physician in attendance would not even acknowledge the probability of the attack being due to a stone, the absence of preliminary colic and the absence of a dilated bladder being sufficient in his mind to exclude the impacted stone. It is easy to criticise, but did not the long existence of fever, jaundice, and tenderness at least suggest the probability of stone and indicate operation? The argument that is often advanced against operative interference in such cases by internal physicians is that they have often seen such patients recover without operation and that they will wait for further evidence of stone. Delay in such a case seems to me to be unjustifiable. Are its dangers not much greater than are those of a laparotomy? Even if there be a chance that the symptoms are due to catarrhal jaundice are we not justified in recommending an operation, which, in case it is fruitless, exposes the patient to a very small risk and, in case a stone is found, delivers him from the danger of grave complications which would have almost certainly brought about a fatal termination?

The main object of this paper has been not so much to place on record the cases here reported as to advocate timely operative interference in cases of cholelithiasis; in the acute cases, to act before the operative mortality has been raised from 1 to 50 per cent., on account of complications arising because of delay; in the chronic and relapsing cases to prevent the patient from drifting into a life of semi-invalidism or the establishment of grave and oftentimes incurable liver disease. Such timely interference must be based upon correct diagnosis. Unfortunately, in earlier and milder stages of the disease, this is often obscured by symptoms attributed to dyspepsia. These patients, generally in early adult life, will suffer from occasional attacks of cramp-like epigastric pain, with perhaps a tendency to vomit. Such attacks at first last but an hour or two, and occur but a few times in the year. They are supposed to be due to indiscretions in diet. As the patient grows older, they become more severe and more frequent. A hypodermic injection of morphin may be occasionally needed. Abdominal distension is common, and the vomiting may become pronounced. The pain will last a day or two, and often there is local tenderness in the right epigastric region. Such is the history often given by these patients, but it frequently can be elicited only after careful questioning. So far between attacks they feel well. Later come the more grave and typical symptoms, and it is often only when these occur that the diagnosis is made, and the propriety of operative interference is discussed.

I have refrained from discussing the technic to be employed in these operations, as this will be ably discussed in other papers to be read before you. I will only say that my preference is, as a rule, for a cholecystotomy rather than for a cholecystectomy or cholecys-

tendens—ideal cholecystotomy. In the 26 cases in which this operation has been done—exclusive of cancer—not a patient has ever been left with a permanent fistula. The average time of closure of these fistulae has been twenty-five days, the longest having been forty-two days and the shortest eleven days. Nine cases of eholedehotomy are now reported. Two of these have died, but in both those patients it may be fairly stated, I think, that the cause of death was due to the grave complications caused by delay, rather than to the operation itself. In the seven cases that survived, the duct was sutured in all, though not always completely. In three of these there was no leakage. In four the leakage ceased in an average of twenty-four and one-half days, the longest time having been thirty-two days and the shortest fifteen days.

DISCUSSION ON PAPERS OF DRs. RANSHOFF AND M'COSE.

DR. WALKER, Detroit, Mich.—There is one point to which I wish to call your attention, and that is the suturing of the gall-bladder in cholecystotomy. I find that there is considerable leakage that remains for two months; I have seen them more than that; with the exception of septic gall-bladders, persistent empyema, I see no necessity for leaving drainage. It bothered me considerably in my first operations—the incision and the leakage that occurred—and in late operations, I close the gall-bladder and let it fall back into the abdomen. I bring this point out, and that it can be easily sutured by means of the purse-string suture. I have had no trouble.

DR. A. D. BEVAN, Chicago—I would like to make just one statement in regard to Dr. Ranshoff's opening statement, to the effect that little is known of the etiology of gall-stones. I think a great deal is known. I believe that gall-stones are mycotic in origin. This has been demonstrated not only clinically, but experimentally. Clinically, I always look for a history of typhoid or an intestinal infection, and in a number of cases I have found typhoid bacilli in the gall-bladder in these operations. Experimentally, in French laboratories (Gilbert and Hourinier), gall-stones have been made in living animals by introducing into the gall-bladder pure cultures of typhoid and colon bacilli. I do not know of any concretion in the body about which so much is known in regard to its etiology as gall-stones.

There is another point to which I would like to call attention and that is surgery of the common duct. The incision which I reported at this Section of the last meeting. I have since employed in ten or twelve cases, and have found it to be of so much value that I would like again to emphasize its importance. Whenever we undertake a gall-stone case, it is impossible to say whether the case will be simple or whether a very extensive amount of adhesions will be met, whether we will have simply to deal with the gall-bladder or the duct. On that account, it is desirable to plan an incision which can be so enlarged as to meet any indication that might arise. The S-shaped incision I developed and reported at the last meeting. (Illustrating diagrammatically). We will allow this to represent the costal starch; here the umbilicus and the inguinal or pubic ligaments. It is planned in this way for ordinary work as an exploratory laparotomy. A straight incision is made through the outer border of the rectus muscle. If adhesions are met with, if a common-duct stone is found and a wider field is required, the incision is enlarged, or, if it is a simple cholecystotomy, the incision is represented as a straight one. If it is a complicated one, when the stone must be removed from the common duct, the incision is enlarged in this way; an addition is made above and below, so as to make an S-shaped incision. I did quite a good deal of work in this line, and it is surprising to find how extensive a field of operation is made by this incision without any tension, when this line of incision is opened by retractors, and there is a wide field in the gall-bladder, and the common ducts are all explored. I would like to emphasize the value of this, and that we are not apt to have hernia following an incision of this kind. The extended portions of the incisions run parallel to the nerve-supply of the abdominal wall, and I have found in cases where I have employed it that there is considerable contraction following the incision. It is carried up well against the costal arch, and I have had no hernia in this line

of work, whereas, when I used the outer border of the rectus—the long, straight, or rectangular—I had three hernias follow.

DR. ROBERT MORRIS, New York City—For some time I have been closing gall-bladders more than previously, and one method of disposing of the gall-bladder in a certain proportion of selected cases, which I have recently employed, will be of service. This represents the gall-bladder (illustrating); this the sutured incision in the fundus—a puckering-string suture is thus carried around the gall-bladder; the gall-bladder is inverted, so that the fundus impinges on the cystic duct thus (indicating diagrammatically). The puckering string has inverted the fundus so that it practically obliterates the gall-bladder. In a certain proportion of cases in which the gall-bladder is freed from adhesions, this method is applicable.

DR. J. B. MURPHY, Chicago—When will we operate? What cases are operative cases? I was pleased to notice in Dr. McCosh's paper that he urged the early operation, and was also pleased to note the tenor of his paper, that the danger was not from cholelithiasis, but from the pathologic conditions induced by the presence of calculi. Therefore if the danger is not from the disease itself, from the presence of calculi, but from the pathologic conditions produced by them, the sooner they are removed, after they have commenced to cause the symptoms, the more safely they may be removed, as the pathologic changes will be less.

The cases in which there is immediate danger, and which demand immediate operation, may be divided into two grand classes: 1, primary attacks with a virulent or malignant infection of the gall-bladder, and, 2, acute obstruction and infection of the common duct. These cases are, fortunately, not common, but they are sufficiently dangerous to demand immediate operation. Can the diagnosis of these conditions be made? Yes! Can it be made with exactness? Yes! With sufficient precision to justify, even demand, an operation that, in itself, involves but a small element of danger. In these cases the attack is sudden pain, accompanied by high temperature, associated with vomiting; if the cystic duct is obstructed there will be great sensitiveness, but less spasmodic pain; if the common duct be involved, no sensitiveness but great pain and jaundice are present. The patient usually has symptoms of severe septic intoxication. These symptoms mean certain pathologic changes? If these symptoms are referable to the gall-bladder, there is sepsis and obstruction of the cystic duct, and, as a result, increased secretion and retention under pressure, so that both biotic and toxic effects of the microphytes are at the greatest advantage to produce gangrene and perforation of the gall-bladder. How long a time does this require? A complete gangrene of the gall-bladder may occur as early as three days from date of onset. I have observed two cases in which there was gangrene of the gall-bladder within three days, and both in primary attacks.

The second class of cases, obstruction of the common duct, associated with high temperature, the onset of pain followed early by high temperature, means what? Obstruction with jaundice, obstruction of the common duct with infectious involvement of the lymphatics, of cholanges, chills and fever, dry tongue and delirium, the patient rapidly succumbing to the toxic effects of infection. This pathologic condition demands the immediate relief of the tension under which this infected material is retained—the drainage of the gall-bladder: unless it be the gangrenous type of infection or long involvement of the cholanges there will always be a rapid cessation of the toxic effect on relief of the tension. Therefore, the indication is not to perform choledehotomy, but to simply relieve the tension of the bile-ducts by the shortest and simplest operation, cholecystotomy, as any prolonged operation under these circumstances would prove fatal.

DR. E. D. EMERSON, Troy, N. Y.—Apropos of one of the points discussed, as to whether we are to close the incision in the gall-bladder at the time of the operation or leave it as a cholecystotomy, there is one principle that has not been referred to, i. e., as to whether the presence of the gall-stone itself is the special pathologic condition for which we operate. The fact is we usually operate for gall-stones, and it is desirable to be sure that we get rid of them. There is no way in which we can be absolutely sure that the gall-passages are clear. We may take out several—a great many and yet leave one or more behind. This is brought more forcibly to my mind by one case in which I expected to find a gall-stone. I was confident that there was one and yet I could not find it. I hunted the ducts thoroughly; I explored the gall-bladder internally and externally and while I think I have a fairly good sense of touch in my fingers, yet I could find no gall-stone. I did a cholecystotomy and two or three days after a large gall-stone appeared at the opening. I do not believe that the annoyances to the patient connected with cholecystotomy are such as to cause us to close the

wound at once, with a possibility that we may leave gall-stones within the gall-bladder.

DR. THOMAS, Pittsburg, Pa.—I do not wish to criticize the papers, particularly as they were written by men of vast experience, but there is only one point and that is as to the first speaker referring disparagingly to the ideal method. It appears to me that if the operator has the courage of his convictions and is satisfied that the gall-bladder is empty and that the ducts are free, I do not see any objections to closing the gall-bladder. I have a specimen from a case of the ideal operation on the gall-bladder. The patient died of intercurrent disease seven days after the operation. I succeeded in getting a post-mortem examination, and removed the gall-bladder. If you are satisfied that the gall-bladder is empty, that the ducts are empty, close the gall-bladder and drop it in. The method in this case was with one running-stitch, first taking up all the tissues excepting the mucous membrane, and then going back with a Lembert suture and dropping it in.

DR. M. F. POTTER, Fort Wayne, Ind.—There are two objections to closing the gall-bladder immediately, and these apply also to immediate closure of incisions made in the common duct. In the first place, permanent or long-continued drainage is oftentimes necessary to cure a case after a stone is removed. There is oftentimes left cholangitis, which is quite sufficient to completely obstruct the duct, and this obstruction can be cured only by permanent drainage, or drainage, if you please, that is kept up for a considerable length of time. Again, there are cases that occur in which the plugging of the common duct is due to this cholangitis, with or without the formation of putty-like mucus, which cases recur after the original operation of cholecystostomy, and which are relieved by a second cholecystostomy, and then again recur and die. Such cases require permanent drainage. Another objection to the ideal operation is that one can never be certain that the ducts are patent. If there is a man who can tell absolutely, positively, when the common duct is entirely free from disease, I want to know who he is, and I want to go to him and have him teach me how to do it.

DR. FRANK WARNER, Columbus, Ohio—If we undertake the operation of cutting into the gall-bladder early, we are going to have occasion to revise our statistics of the mortality of the operation. How many of you hesitate when anything is the trouble, or suspected of being the trouble, with the appendix, to go in at once? What is the case when there is any trouble about the gall-bladder? You hesitate and hesitate until there has been an opportunity to add a very great deal to the risks which we run, not from the process itself, but from the results which are called for by the operation. There is one thing that I want to specifically condemn here, and that is the administration of olive-oil, in the hope that you are going to get rid of any very considerable obstruction around the gall-ducts. So far as I am personally concerned, I feel that you might as well pour that oil on the outside and rub it over as to put it on the inside. It is only a relic of barbarism, only a relic of ignorance that has been handed down to us from year to year by men—and some are refusing or hesitating to condemn this. But while my experience has been very small, as compared with that of many, yet it has been sufficient for me to stamp an utter disapproval on any such procedure. With the limited experience I have, I believe that we will do better to enter the gall-duct earlier, not wait, not make so many tentative plans to get rid of the obstruction, but enter earlier, and we will meet with much better success, and will have an opportunity to revise our statistics of the death-rates and make the operation a more favorable one to undertake.

DR. W. L. RODMAN, Philadelphia—I rise to ask the several essayists, when they close the discussion, and others who may speak on the subject, if they will state whether they have seen gall-stones in the full-blooded negro. In an analysis of 106 cases operated on by a surgeon in Louisville, only one was found in a full-blooded negro. I think some of the Southern surgeons who are here have seen gall-stones, and I would thank any one who goes into the discussion to answer that.

DR. J. E. MOORE, Minneapolis, Minn.—My own experience teaches me that there are unmistakable cases of cholecystitis in which there are no gall-stones, and some of these cases require operations, particularly those complicating typhoid fever. Right along this line I would follow Dr. Warner and use the necessity of exploratory operations in these cases, just as we are always ready to make them in cases of appendicitis. Why should we hesitate to go into this region any more than into any other region? I have been in the habit of doing this operation, and have never had an occasion to regret it, and would recommend to you exploratory incision in these cases. I have been very agreeably surprised in the instances in which my colleagues and I have operated to find our diagnosis corroborated as soon as we got into the abdominal cavity.

DR. H. O. MARCY, Boston—Since I am on record as the first to have removed a gall-stone from the common duct, having sutured the same as well as the gall-bladder, and closed the abdominal wound without drainage, it is very natural that I should advise this method of procedure, but we can not emphasize too greatly the importance of absolute knowledge that the canal into the intestine is unobstructed before we close the opening made for the removal of the calculus. If we may be certain that the biliary passages are unobstructed, after the proper suturing of the same, I can not doubt that the primary closure of the wounds will make the operation safer than by leaving an external fistulous opening. Conditions will not seldom be met with where this ideal operation can not be safely performed, and then we must use drainage.

In gall-bladder operations I consider the modified S-incision, for the reasons advocated, an important aid. Until recently I have divided the abdominal wall in a line parallel to the lower rib, which certainly permits easier access to the gall-bladder than an incision parallel to the rectus muscle. The modified S-incision is a happy medium between the two, possessing the advantages of both. There can be no question that operative measures for the relief of biliary obstruction are not alone justifiable, but that to-day we are in a position to define the conditions demanding the operation and emphasizing the importance of surgical intervention at a very much earlier period than at first seemed warranted.

DR. W. E. B. DAVIS, Birmingham, Ala.—In answer to Dr. Rodman's question, I had one case of obstruction of the gall-bladder—the common duct—where the stone was not found, in a pure negro, 70 years of age.

DR. JOSEPH RANSOFF, Cincinnati, Ohio—I want, in the first place, to correct Dr. Moore in his idea that I insisted on the fact that gall-stones are the only things that we are to operate for. I have a number of cases in which gall-stones were not found, and I do not think I operated needlessly.

In reference to the etiology of gall-stones, as spoken of by Dr. Bevan, I am not ignorant of the fact that gall-stones have been produced by the use of bacteria injected into the gall bladder, nor occasionally to form around a foreign body, but for the most part, they have not been found about a foreign body. I contend that we know very little, except after an infective process like typhoid fever, but of the time in which they form—the period—I think nothing is known, and that is an important point.

In regard to the ingenious suggestion of Dr. Morris, to close the gall-bladder by inverting it, the speaker believes that it originated more in the study than at the operating-table. When the gall-bladder is small and contracted, inverting it is entirely unfeasible. Even when the gall-bladder is of normal size its upper wall is so attached to the under surface of the liver that without dissecting it therefrom, inversion of the fundus can not be done. It is a thoroughly feasible procedure in enlarged gall-bladders, but these gall-bladders are the ones that ought not to be closed, but drained, and therefore, this suggestion of Dr. Morris does not seem to me a good one.

My main reason for objecting to ideal cholecystostomy is that I have had one patient die from it. Furthermore, we do not know whether the common duct is open or not. In the vast majority of cases you can not pass a probe through into the intestinal canal. Nor do we know absolutely that all the stones have been removed. In the vast majority of cases of operations for the removal of the gall-stones, you see nothing of bile; there is no obstruction of the duct after the first dressing, then everything is flooded with bile. The backward pressure of the bile, when the swelling of the mucosa of the cystic duct subsides after operation, is often enormous; should the sutures then fail to hold, a catastrophe is imminent.

One other thing, in regard to Dr. Murphy's statement that all cases should be operated on at once when we have obstruction of the common duct. The man with the largest experience in gall-stone surgery, Kehr, with a record of 409 cases and 32 common-duct stones, says, in acute common-duct obstructions, do not operate, but wait.

Contagiousness of Acute Otitis of the Middle Ear.—Lermoyez reports that in seven out of twenty-one cases in his experience, a companion, a sister or maid, also became affected with an acute otitis of the same character. At the first case, within two to seven days, or two weeks in one case, without a cold or any appreciable cause except contagion from intimate contact. Another argument in favor of his assumption is the frequency of otitis in general hospitals and its rarity in private practice. He therefore urges isolation of all cases of acute otitis, and warns persons with the grippe or any other infection to keep away from them.—*Press Med.*, August 12.

OUR TUBERCULAR PATIENTS.

WHOM TO SEND AND WHERE TO SEND THEM.*

BY J. FRANK McCONNELL, M. D. (TOR.)

LAS CRUCES, N. M.

That we have such patients no one will deny, for the age of the millennium has not dawned, and the sad procession of blighted lives is still wending its way toward the beckoning hand, till science shall have called halt.

Who does not recall, in the student days of even the youngest of us, the sadness with which our preceptors were wont to recognize the presence of consumption in young and promising men and women, the particular bright shining lights of each one's social sphere? Let me quote Allbutt of Cambridge in this particular: "Well I remember," he writes, "the fatal—for such it then seemed—the fatal note of the 'consonating rãle'; how it impinged on the unwilling ear like a knell. For they nearly all died in those days." But surely this is a gloomy picture; is there not a brighter side? Can not some new light to be shed upon it, that the faded color may be restored? Can it not be placed amid new surroundings, that the darkness may be dispelled? I believe this is possible. I believe the dawn has passed and we are already standing bathed in the light of the noon-tide of science.

With Koch came the great victory—our certain early diagnosis; with diagnosis came treatment, worthy of the name, for it is indeed prophylactic as well as active. The profession quickly became alive to the necessity of pure air and sunshine for such patients; they were aware that certain localities excelled in these essentials; the Continent became studded with *Kuhranstalten* and *Liegenhallen*; thither the patients were sent, the early and the late, the vigorous and the hectic, and as a result of such empiricism the disappointments were many; then came discrimination; *whom to send*, was the question uppermost in the professional mind, and on this topic I should like to add my quota, giving my opinion and experience in the matter.

Let me commence with this query: Who are the patients in whom the tubercular process is arrested? In nearly every case they are those in whom an early diagnosis of the existence of tubercle has been made, and who as a consequence have immediately been placed amid suitable environment in order that the curative process might be established. There are those present, I am sure, who could place their hands on a dozen young adults, who have, as it were, been snatched from the imminent peril of certain death, as the result of the skill which their medical attendants displayed in detecting the focus of disease and providing for it.

It has been the cause of great satisfaction to me to see annually, young men and women already presenting clinical evidence of their tubercular infection, coming out to New Mexico and there regaining health and strength, converting a hypotrophic constitution into an orthotrophic one, and oftimes becoming stronger than ever before. But, again let me ask: What class of patients give these results? The early cases; those who as yet have no appearance of invalidism, in whom the slightest token of chronicism is unnoticed by the experienced observer, who within themselves are yet almost unconscious of any serious lesion, but by reason of some annoying symptom, or acting on the advice of friends,

have been led to consult their physician. The medical adviser, thus consulted, if he wish to prove himself worthy of the confidence entrusted to him, will make a careful examination, microscopic as well as macroscopic, and will, as a result, honestly advise his patient as to his true condition, not engendering the false hope of "nothing wrong," "bleeding from the throat" or a "bronchial irritation following la grippe," if inwardly he believes and knows otherwise, but, encouraged by the early discovery of trouble, will advise, if circumstances permit, climatic change, even if it be only the outskirts of the city or locality in which the patient resides. It is such cases that improve and live to thank the physician that has proved himself such a benefactor.

There is another class of patients that we who practice in health resorts meet very frequently: those unfortunates in whom the disease manifests itself with that severity which so puzzles the pathologists, and those still more unfortunate, who have been allowed to let the day of their deliverance speed by, till, beyond all help from climatic influence, they are sent away from home and friends, and all that that means, only to find death in strange places. Such scenes are of altogether too frequent occurrence.

Therefore the patient most amenable to climatic influence still possesses a fair portion of activity and bodily strength; the hand of disease has not as yet laid heavily upon him; the tubercular lesion is slight, if any; perhaps nothing more than a little cough, with hemoptysis has called attention to his lungs; or more favorable yet, some evidence is found of the pre-tubercular state—that condition of hypotrophy so frequently seen, yet so illy understood, since it lacks any well-defined form—and as a prophylactic measure, climatic change is earnestly advised.

When the examining physician has fully determined that his patient should seek other climes, then should he firmly impress the fact, not allowing himself to be influenced by the importunities, either of patient or friends for very frequently much valuable time is lost—irrevocably in many instances—by procrastination following on carelessly given or insufficiently emphatic advice as to the dire necessity of immediately seeking better suited climatic conditions. Well do I know this fact from personal experience. Give me the data as to the time lost between diagnosis and the surrounding of the patient with suitable conditions, and I will make the prognosis.

A word as to that peculiar condition so frequently met, viz., fibrosis or fibroid phthisis; it is a great—and I regret to say all too common—error to send such patients to high altitudes, there to be dosed with strychnia till, compensation failing, they are advised to seek a lower altitude, or return to sea-level. Such cases, if sent to very moderate altitudes, invariably do well, the heart accommodating itself to the slight addition, when it would not be able to do so under the great disadvantage imposed on it by a higher elevation.

Having found our patient, where shall we place him that he may receive the utmost benefit in the shortest possible time, that he may be able to earn a decent competency and obtain the luxuries as well as the necessities of life? In order to settle this rather difficult problem it is necessary to have a knowledge of the localities which are favorable to fulfillment of what I have outlined on another occasion¹, as the object of climatic change; and again, the accommodations a patient will have dur-

¹ Climatic Therapy of Pulmonary Phthisis. Canada Practitioner March, 1897.

*Presented to the Section on Practice of Medicine, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

ing his journey, and at his destination, and that his points of careful consideration.

It has been well said that tuberculosis is a disease of civilization, and that the nearer one approaches to the primitive states the less frequently does it appear, and again, that pure air, equability of temperature, and maximum amount of sunshine are the trinity which make up the ideal "breathing spot" for the tuberculous. With these premises, I think that further consideration will tend to develop that which may be found in every part of the country, and localize those particular regions, which are especially favored from a climatic standpoint.

A leading work of the day, discussing this subject, states that, given the three requisites just mentioned, it does not matter where the location is, provided the patient lives an outdoor life; seemingly it does not occur to the author that only particularly greatly favored localities possess these necessary adjuncts to successful climatic treatment, thus making practical the carrying out of his proviso.

In order to obtain pure air, maximum amount of sunshine, and equability of temperature, at one and the same time in a given locality, it is necessary to seek a climate which is noted for its dryness, and which has at least a moderate altitude, for it is in such regions that we see almost perpetual sunshine, which, with the altitude, insures purity of the atmosphere, provided we bear in mind our primary axiom—the keeping close to primitive conditions—which is nothing less than avoiding over-crowding both in the locality chosen and the residence selected.

In regard to dryness, I think it is very generally conceded that it plays the rôle of something more than a mere "useful adjunct," as a well-known authority puts it. Clinical testimony is overwhelming in the remarkable results obtained over the tubercular process in the arid regions. You will therefore see that we now have in this ideal climate a locality which can boast of pure air, abundant sunshine, the right altitude, freedom from undue moisture, and sudden and severe changes of temperature. We have built up an ideal, yet do we possess it, almost at our very doors—New Mexico.

It is to New Mexico, and especially to that portion of it known as Southern New Mexico, that I particularly wish to invite your attention, for here we have a moderate altitude—3800 feet—a valley fair to behold, surrounded and sheltered by mountains and foothills, a country of little rain—averaging yearly about eight inches, and frequently less—which, accommodating itself to the wishes of our winter visitors always falls in summer; a land of perpetual sunshine—348 sunny days in the year—with a winter that is unrivaled in possessing the necessary qualifications of climatic therapy.

New Mexico has been aptly called the land of sunshine and sand, which name warrants our assertion to supremacy in the matter of cloudless skies and absence of humidity; it is true that in consequence we have dust in certain localities, but away from the centers of population, on some of the many fruit and alfalfa ranches, which are the best places for invalids, there is little if any dust, the alfalfa fields doing good service in preventing this annoyance. As a winter climate for tubercular patients, Las Cruces, the center of the valley of Southern New Mexico, presents an ideal location. Good accommodations may now be secured on every side; especially is this true of the suburban parts.

It is but fair to state that the warm genial months of winter give place to warmer days, that are anything but genial, in July and August. Yet the nights are cool, so that refreshing sleep may be procured. A few

miles by wagon or train into the mountains, or to the northern part of Arizona and New Mexico, and we have a summer climate that is just as cool as one may desire, the patient being able to regulate the temperature at his fancy.

As a rule I advise patients who can tolerate high altitudes to travel northward, but many will find the nearer resorts, while warmer, better suited to their physical capabilities. It is unfortunately true that no one place will suit every phase of the tubercular diathesis, since no one place will suit every temperament. Yet, I believe that in a land of almost cloudless skies, with warm genial winter days, absence of rain and snow, and accommodations suitable to all requirements, the well-selected, early tubercular subject will improve and be quickly, and in the majority of cases, so permanently restored to health that in a few years he will have forgotten that he ever possessed such a thing as pulmonary tuberculosis. Therefore to sum up, we have seen:

1. The great aid toward permanent arrest, i. e., cure, of the tubercular process which properly selected climatic treatment gives.
2. The criminality of delay in affording our patients such an opportunity.
3. The wherefore of the recovery of early cases.
4. Why late cases should be kept at home.
5. The wonderful adaptability of the climate of Southern New Mexico, and the enviable position which it possesses as Nature's great sanitarium, where unfortunate possessors of the tubercular taint may defeat the ends of the grim destroyer and be saved to society, to act as landmarks to the diagnostician when he discovers the evidence of disease in some patient who less than a quarter of a century ago would have been doomed to death, but who now, thanks to the means of an early diagnosis, at the disposal of every scientific physician, remains to become vigorous and strong, blessing the name of the man whose knowledge has borne such fruit.

TREATMENT OF ENDOMETRITIS BY DRAINAGE AND IRRIGATION*.

BY AUGUSTIN H. GOELET, M.D.

Professor of Gynecology in the New York School of Clinical Medicine, etc.
NEW YORK CITY.

It is too often the custom to regard every discharge from the uterus as evidence of endometritis and to submit the endometrium to vigorous treatment either by caustic or astringent applications or curettage or both. This is unscientific and an error both in diagnosis and treatment. Even when the diagnosis of endometritis is correct, such measures, as they are usually applied, are not effectual, and they submit the patient to needless risk and the uterus to much unnecessary violence. If every case so maltreated was actually an endometritis, there would still be no justification for the vigorous and even harsh measures sometimes blindly employed against it. I believe I am not far wrong when I say that if a cure results after such treatment it is not because of it, but in spite of it.

If the case is one of simple hyperemia of the endometrium, with hypersecretion or one of so-called cervical catarrh, both of which may be mistaken for endometritis, the traumatism such violence inflicts opens the way for infection, conveyed to the cavity perhaps from the cervix, where infective germs frequently dwell in an innocuous

*Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

state when undisturbed. In this manner a comparatively harmless condition may be transformed into a very grave one. It is little wonder that some of our methods have been referred to as "gynecological trickering." It is trickering of the worst form, and can not be too strongly condemned.

As an actual fact endometritis is not so common as is generally supposed, and hyperemia of the endometrium is often mistaken for it. This is a condition very readily cured by removal of the general pelvic hyperemia on which it depends and obviating the cause or causes which give rise to it, and local treatment of the endometrium is unnecessary. I have found bipolar faradization applied to the vagina the most prompt and most effective method of treatment.

In the other condition often mistaken for endometritis, so-called cervical cartarrh, the diseased process is, as a rule, confined to the canal of the cervix and does not extend beyond the internal os unless the affection, usually a passive type, is conveyed to the cavity above by introduction of instruments for diagnosis or treatment or for operations, such as dilatation and curettage. The condition is usually an infection of the tubular glands of the mucosa lining the canal of the cervix, and manifests itself by a discharge, sometimes inoffensive in amount and insignificant in appearance, yet in it may be found the staphylococci, streptococci, or gonococci, either alone or together. They appear in small numbers in the ordinary discharge, but when the surface is irritated the discharge is increased and their number is greatly multiplied. This means that they inhabit the glandular structure of the mucous membrane and few escape to the surface with the ordinary secretion, the orifices of many of these glands being obstructed, but under unusual stimulation the pent-up secretion is thrown off in greater quantity and with its myriads of these germs which otherwise would not find their way to the surface.

In such a condition the cavity of the uterus above should not be invaded even for the purpose of diagnosis until all evidence of germ growth, as revealed by the microscope, has been effaced. The penalty of violation of this rule is risk of infection of the endometrium, which previously may have been exempt.

Obviously, the most rational manner of dealing with such infection, which is not confined to the surface of the mucous membrane, but has invaded the glandular structure beneath, is to stimulate the glands to throw off the pent-up secretion and to irrigate the surface frequently with a non-astringent, non-irritating solution to remove the secretion and prevent migration. This process of "drainage of the glands," if persistently maintained, will cause the germs to be thrown off too rapidly for effective propagation in the glands, hence their growth is checked and they become eventually exhausted.

The same holds true of inflammation involving the mucous membrane of the cavity above the internal os. The glandular structure is involved and no form of application to the surface can accomplish a cure unless its effect is to establish and promote drainage of these glands. If it defeats drainage it must aggravate the condition. Applications that coagulate the secretion on the surface block up the orifices of the glands, and if the action penetrates beneath the surface it is all the more objectionable. Hence astringents and caustics, though they may act as stimulants, defeat drainage rather than favor it, and are therefore contraindicated.

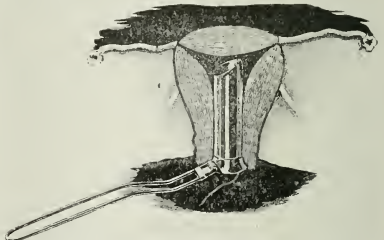
Curettage is sometimes of service both in the canal of the cervix and within the cavity of the uterus, but it should not be employed indiscriminately. To accom-

plish the most good it should be employed within proper limitations, and caustics should not be applied afterward, since they produce necrosis, which may result in atrophy of the mucous membrane or agglutination of the sides of the cavity. The curette should not be used in a manner to destroy or remove tissue unnecessarily, or to inflict needless traumatism. It is very unwise and unnecessary to attempt to remove the entire mucous membrane down to the muscular structure, therefore the sharp curette is seldom or never required within the uterus, but it may be used in the canal of the cervix and at the internal os, where the tissue is firmer. The dull curette with rigid shaft, will, if properly used, remove everything that should be removed from the surface of the endometrium in endometritis. The object of curettage in these cases is not to destroy the mucous membrane, but to remove projecting granulations or superficial tissue which may be blocking the orifices of the glands and preventing drainage. Probably much of the benefit that accrues from curettage comes from stimulation and compression of the glands from passing the curette over the surface of the mucosa. This forcible expulsion of the secretion would as much as anything remove the obstruction in the gland ducts.



Author's dull curette with rigid shaft, showing front and back of the curetting end.

Since it is not in itself curative in these conditions, curettage should be regarded only as a preliminary step in the treatment. Evacuation and drainage of the glands, made possible thereby, must be maintained and frequent irrigation with some non-astringent, non-irritating solution, through a return flow irrigator, must be employed until no vestige of disease remains. This is the only positive way of effecting a complete cure.



Author's uterine endoscope in position in the uterus, showing lamp near extremity of the tube.

An accurate diagnosis is an essential prerequisite for successful treatment, more especially in these inflammations of the uterus, and this can only be made by careful examination of the discharge under the microscope and inspection of the endometrium by means of the uterine endoscope.

It is particularly necessary to inspect the cavity both before and after submitting it to curettage: before, to decide the actual necessity therefor, and after, to determine the completeness or incompleteness of the work.

The successful application of the endoscope for the purpose of diagnosis has been made possible by employing an electric lamp within the tube near the extremity

for direct illumination of the cavity, and by attaching a megascope for bringing out the details of the surface after the plan of the Valentine urethroscope.

The instrument is adjusted to the interior of the uterus in the manner shown in the accompanying drawing. The lamp is operated by four dry cells, which last for a considerable time—thirty hours—and may be replaced at the small cost of \$1 when exhausted.

The extremity of the endoscope is oblique, so to more satisfactorily expose the orifices of the tubes and the sides of the cavity. The lamp is placed near the extremity of the longest side of the tube, so as to direct the light on the whole surface exposed to view by the opening of the tube. By turning the tube around in the cavity all parts of the cavity may be inspected, including the fundus, the sides, etc., as the tube is slowly withdrawn.

The lamp is detachable, and is placed in position after the tube has been inserted to its full length. The endoscope tube is introduced with obturator after proper dilatation of the canal. The obturator is then removed and the lamp inserted. If there is much secretion of blood in the cavity, this is first sponged out by means of an applicator with the end wrapped with absorbent cotton, then the lamp is inserted. If it becomes necessary to dry the surfaces after inserting the lamp this may be done without removing it.

There is not enough heat developed by the lamp to make it objectionable in the uterus for a period sufficient for thorough inspection of all parts of the cavity.

116 West Seventy-fourth Street.

THE IMPORTANCE OF A KNOWLEDGE OF THE DEVELOPMENT OR EVOLUTION OF THE CHILD IN THE PREVENTION OF CHILDREN'S DISEASES.*

BY E. STUVER, M. Sc., M.D., PH.D.

Member Colorado State Medical Society (Vice-pres., 1894); Rocky Mountain Interstate Medical Association, (ex-Secretary and Treasurer); American Medical Association; Fellow American Academy of Medicine.

FORT COLLINS, COLO.

In this age of world-encircling intellectual activity in which mind has penetrated so many of the secrets of Nature, and by directing its forces, has secured such a great dominion over matter, when the thought and discoveries of the whole world are at the command of each individual worker, we are prone to lose sight of the fact that while mind controls and directs matter, matter, on the other hand, exerts a powerful influence on the normal development and integrity of mind.

Surrounded as we are by free schools, almost universal educational facilities, and a public sentiment which, subordinating nearly everything else to the cultivation of intellect, rushes the child, scarcely out of the cradle, into the kindergarten, and thence through various grades of schools, colleges and universities, until he or she emerges at the age of 25 or 30 years, a finished product of our modern educational system, we are apt to forget that cultivation of the intellect or cramming the mind does not comprise the whole of development, and, that, unless very carefully guarded, by overlooking or ignoring the proper training and development of the body as well as the laws governing the development of the mind in the race, such training may do infinitely more harm than good.

The child, instead of being "a little man," with the

*Presented to the Section on Diseases of Children, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

same thoughts, feelings, inclinations, capacities and powers, only on a smaller scale as a man, is, in truth, an altogether different being, and may be aptly characterized in his various stages of development as an epitome of the development of the race. He passes through the successive stages of savagery, barbarism and semicivilization before attaining to the full civilization in which we live. During this progress the spectral forms of his dead ancestors surround him on all sides, and the mighty mental accumulations and beliefs of a long-forgotten past impress on him the various stages of credulity, inquiry, faith and full-blown reason through which these ancestors have passed.

With these facts fully impressed on the mind, and (thoroughly grasping the great truth that a symmetric development of all the powers—physical, intellectual, and moral—is necessary to the greatest happiness and welfare of the human being, let us see whether our habits of living, and educational methods, accord with these fundamental laws of development, and if not, in what way the physician can help to point out the remedy.

As before indicated, the child is not "a little man." In both organization and function there are great differences between the two, and hence their nature and training should be different, and made to conform to their organic and functional capacities. The glands, heart, lungs, muscular and osseous systems of the child possess a high degree of organic and functional perfection, and this would logically seem to indicate that the proper exercise and development of these various organs is the rational and proper occupation of the child during childhood and early youth.

In support of this inference it may be said that in the savage and barbarous stages of development of the race to which the young child corresponds, these organs and functions are developed to a high degree of perfection. Such things as weak flabby muscles, flat chests, failing hearts, and impaired digestive organs, were unknown, because their existence would have meant extinction to their possessors.

The muscular, osseous and respiratory systems were developed to a high degree of perfection, which was attained, not by disuse and confinement in illy-ventilated rooms for a considerable part of the day and the whole of the night, but by a careful and systematic exercise of the organs undergoing development but while the physical organization was systematically developed, and attained a high degree of perfection, and the special senses, especially the sight and hearing, were carefully trained from the earliest childhood until they became phenomenally acute among savage races, the intellectual development in many particulars remained in a rudimentary state. The powers of continuous mental application, abstract reasoning, and broad generalization were unknown to the savage, and were only acquired by the race through the slow, gradual process of evolution.

In support of the proposition that the young child represents and epitomizes the far-away savage stage of the race from which he sprang, we have the further fact that while the organic development and functional capacity of his heart, lungs, glandular organs and muscular and osseous systems have reached a high degree of perfection at birth, on the other hand his nervous system is in a very immature and undeveloped state. The brain of the young child, as compared with that of the adult, contains a larger percentage of water, is softer, more easily irritated, and is much sooner fatigued on mental exertion; but on the contrary the perceptive faculties, the development of which depends on the training of the

special senses, are keen and alert, and attain a high degree of perfection if given an opportunity in childhood to develop in accordance with the laws impressed on the race by Nature throughout the ages.

With these principles clearly in mind, let us see what application can be made of them by the physician in warding off physical and mental ills, and helping the individual and the race to attain the highest physical, intellectual, and moral perfection and happiness.

When we consider the phylogenetic history which the child represents at the time of its birth, the long eons of time, and the enormous evolutionary progress through which it has already passed, we can have some appreciation of the force and wisdom of a remark once made by Dr. Oliver Wendell Holmes, that, in order to treat the child successfully, you ought to begin two hundred years before it was born. So strong are hereditary tendencies that, no matter how favorable the environment may be, they influence, either for weal or woe, the individual and his offspring for generations. This brings us to the first fundamental proposition, viz.: That in order to reach the highest development and the most complete living, the individual should be well born; that is, both parents at the time of procreation should be in good health, and free from all taint of tuberculosis, syphilis, carcinoma, or other hereditary or communicable diseases or constitutional predisposition to them. Then, during pregnancy the mother should obey the laws underlying good hygiene and correct living in the matters of proper clothing, diet, exercise, and the avoidance of all stimulants and narcotics, as well as late hours and undue emotional excitations which have a peculiarly pernicious influence on the rapidly developing fetus. One night of dissipation may cast a shadow over a thousand years of the phylogenetic history of the rapidly developing embryo.

After birth the infant should be nourished at the maternal font designed by Nature for its sustenance, and if the mother has been properly raised and cared for during pregnancy, she will in almost every instance have an abundance of milk, and it will be a rare thing, indeed, to be obliged to feed the child on cow's milk, or the many nostrum foods with which the market is flooded. Then, too, it should be zealously guarded against poisoning by stimulants and narcotics in any form. Opium and alcohol in all their varied forms, with their siren and delusive promises, should be forever banished from the nursery, and the child be given an opportunity to select its own drug habits in later years without having them forced on it at this early age. I want to make one suggestion here. As you all very well know, water is the great solvent on which the system depends to convey nutritive material to every cell and tissue of the body, as well as to remove their accumulated waste and broken-down products. These cells and tissues are surrounded by dialyzing membranes through which a constant endosmosis of nutrient material and an exosmosis of retrograde products are going on. An abundance of water is necessary at all ages, to keep these membranes in good working order, but especially is this true in infancy and childhood, when the assimilative and eliminative functions are so active. Often young infants cry from so-called colic, and are dosed with brandy, paregoric, or some such abominations, when they are suffering from thirst, and a few teaspoonfuls of cold water will relieve the difficulty, and they will fall into a peaceful sleep. All young children should have plenty of pure water at regular intervals.

The clothing should be made so as to give free move-

ment to the limbs and permit a natural and unrestrained development of all the organs and functions of the body. The young child should have, at regular periods, an abundance of plain, unstimulating food, and plenty of exercise and spontaneous play in the fresh air, and should at an early age be trained to habits of regularity in attending to the functions of the body.

As childhood is the time of active development, and as sleep is Nature's great upbuilder and restorer, children should have an abundance of sleep during all these years, and especially while attending school. All stimulants and excitements, such as late hours, children's parties, and the many artificialities of our so-called advanced civilization, which tend to bring about a premature maturity, should be strictly avoided. During childhood, when their perceptive faculties, memory and imagination are active, they should be brought in close contact with mother Nature, from whom they will gain far more physical strength, mental power and wisdom than can be obtained from the formal-methods and conventionalities of most of our schools. I desire here to enter a protest against the long hours, continuous mental strain, cramming methods, and forcing processes of most of our modern schools. Scarcely is the child out of the cradle before it is sent to a kindergarten school; here, if it is so fortunate as to have a teacher who understands and is thoroughly imbued with the true spirit of Froebel's teaching, it passes a happy time, and receives much benefit. The child's books are plants, flowers, trees, fruits, birds, insects, and the various objects, animate and inanimate, of the external world by which it is surrounded. The everlasting hills rising in majesty and grandeur, the sighing of the wind among the trees, the murmur of the brooks, the glorious sunsets, the autumn forest with all its gorgeous hues and kaleidoscopic changes, in short, the almost infinite variety of objects and the innumerable beauties of Nature can be made most impressive sermons by the true kindergarten teacher—sermons which will sink deep down into the soul of the child and leave an impression on its body, its mind and its character which the storms and vicissitudes of life will never obliterate. But, alas! such teachers as we have in mind are like angel's visits—rare, indeed—and come to us like a ray of hope from the great beyond.

In the majority of instances even the life of the kindergarten is smothered by the blighting curse of formalism, and instead of being a blessing it is made a curse, and through ignorance or disregard of the most rudimentary physiologic laws lays the foundation of physical defect or disease. But if this is true of the kindergarten, what shall be said of the average primary school? In the words of Dante, there should be inscribed over the portal: "He who enters here leaves hope behind," because from my observation and information about our schools, from the time the pupil enters the first primary grade until he completes the grammar school course, he is continually subjected to such a grind and cramming for examinations that he must indeed be made of stern stuff if he does not emerge from this course weakened both in body and mind. The object of all true education should be a well-rounded symmetric development of all the powers, physical, intellectual and moral, of the individual; but in the face of this truth, which is acknowledged by all educators worthy of the name, we see children from 6 to 15 years of age, during the time of intense developmental activity, subjected to a course of study which, in many instances, is entirely beyond their comprehension, and a source of constant irritation to their immature and unstable brains.

Especially to be deprecated is the everlasting number work and arithmetic drill, which appears to have become a mania with the larger part of the teachers in our schools to-day. From the time the unfortunate child enters the first primary, through the eight long years until he emerges from the grammar course, he is subjected to a continual grind in number work, problems and examinations; morning, noon and night they are a veritable "old man of the sea" to them, hanging like a pall over their hours of leisure, and, even invading their dreams, they have become not only a menace to the health and happiness of the children, but also a nuisance to their parents, who can not enjoy a quiet half hour because a puzzled child can not solve a long list of problems far beyond its comprehension, and appeals for help. But, after all, what results are attained from all this work, worry and grind? I believe I am justified in saying that they are nearly always inadequate, and often a dismal failure, and that any 11 or 12-year-old pupil who had never looked into a written arithmetic, but who had been carefully drilled in mental arithmetic, can do better work and obtain a clearer comprehension and more thorough grasp of the subject in three or four years than the struggling child obtains by its eight years of arduous and detestable toil.

Then, too, the system of examinations in vogue in so many schools is a veritable *bete noir* to the pupils, who are kept in a constant state of worry and irritation, and subjected to a continuous nervous strain. The work, instead of being inspired and vitalized by a love for truth, and a desire to penetrate and understand the secrets and laws of Nature, becomes a mere mechanical cram and filling-up process to pass the examinations. This sort of work, as every one knows, has not only little real educative value, but by leading to makeshifts and subterfuges of various kinds, as well as downright cheating, degrades the pupil. Healthy mental and physical growth and activity are conditioned on an enjoyment or appreciation of the work being done. A distasteful task, or one done under compulsion, fatigues the mind much sooner, and leaves a much more evanescent impression than one which arouses the pupil's enthusiasm and engrosses his whole attention.

When the teacher so directs the pupil as to call his physical and mental powers into play, spontaneously, the dry rot of formalism and routine vanishes as if by magic, from the school, and instead of the tired, disgusted look on so many young faces, produced by the mechanical leveling process, which by confining within restricted bounds, reduces all to the same plane of mediocrity, we see the flashing eye, the eager intent purpose, and the whole soul of the pupil aroused by a noble enthusiasm. Who will say that in true educative value, one hour of such work is not worth weeks, nay months, of spiritless cramming.

Nor are spontaneity and interest less important in physical than in mental work. Free, unrestrained, spontaneous play in the open air is of infinitely greater value in developing the body than any indoor formal exercise, although, properly directed, gymnastic exercises, if subordinated to outdoor sports, can be made valuable adjuncts.

So many pitfalls and dangers lie hidden in the pathway of the rapidly evolving child that in order to guide him wisely and safely through the intricate labyrinth, to avoid the Scylla of physical ills, on the one side, and the Charybdis of mental evils and abnormalities on the other, it is necessary that the physician should at least have a clear outline knowledge of his evolution, and

know something of the physical and mental characteristics and potentialities impressed on him throughout the ages.

PROGNOSIS OF LARYNGEAL TUBERCULOSIS.*

BY ROBERT LEVY M.D.

DENVER, COLO.

In view of the many authentic cases of cures, both spontaneous and under treatment, which have of late years been reported, it is with some surprise that the vast majority of general practitioners as well as a fair number of laryngologists still look with but little hope on every case as soon as the verdict of laryngeal tuberculosis is given. The general statement "prognosis-grave" is sufficient to satisfy the conscience and condemn the patient. This view is certainly to be looked on as misleading to say the least, especially as it is generally given more prominence than the modifying and qualifying statements which usually follow. It is quite as much to be regretted, as so well put by Schech in Heymann's "Handbuch," that the present "beloved joy" over the results of modern treatment produces much harm both to our science and to the patient by promises which can not be fulfilled.

It is with the hope of presenting the subject in a conservative manner, with such deductions as shall be of practical value, that I offer the results of some years' observation of carefully recorded cases. One can not as yet say that all opportunity for differences as to the prognosis of this serious affection no longer exists, and for this reason radical changes are year by year noted in the views of all observers. The history of the curability of laryngeal tuberculosis is still being made, and one must not therefore expect to be too dogmatic; and still it must be conceded that certain well-defined conditions are positive indications for reliable prognostic inferences.

For these reasons the laryngologist becomes a valuable guide in early and accurate prognosis as he is in the diagnosis of this disease, and were he to examine every case of tuberculosis of the lungs or other organs his usefulness would doubtless be increased by the detection of tubercular infiltration or other lesion in the larynx which passes unnoticed until the patient is beyond hope.

The report and demonstration of spontaneous cures of tuberculous lesions in the larynx by men of undoubted veracity and authority can not be too strongly presented and reiterated—Kidd, Heryng, Rosenberg, Zenzliak and others—for it was from this that hope first sprang and that the curability of this hitherto greatly deplored condition was established by the pioneers. Encouraged by nature's lessons in repair she was assisted by our scientific efforts, until cures under treatment began pouring in from all sides by scores of men, such as Krause, Heryng, Bergengrün, Thost, Newmann, Massei, Wolfenden, Symonds, Gougenheim, Gleitzmann, Murray, Krieg, Whistler and many more equally authentic reporters.

In spite of the enormous amount of optimistic literature on this subject one can not ignore two important criticisms, namely, the question of diagnosis and that of the proof of cure. It would be desirable could we in all cases produce such incontrovertible evidences as in Krause's and Heryng's cures, in which post-mortem microscopic investigation demonstrated to the satisfaction of Virchow and E. Fraenkel the complete absence of tubercular lesion. Even this evidence may be questioned by the hypercritical, for Schrötter, in commenting on

*Presented to the Section on Laryngology and Otology, at the Fifteenth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

Heryng's case, says that greater time must yet elapse before we may accept such conclusion.

For all practical purposes it would seem that Delavan's statement is more than sufficient, when he proposes "to call that case cured in which all trace of active disease has disappeared from the larynx and all active symptoms referable to that organ have passed away, particularly where there is no recurrence of the local trouble during the remainder of the patient's life." I would go a step further and call a case cured in which all active indications of disease fail to recur after two, or in some instances after one year from their cessation. I do not deny the necessity of waiting, but why refuse a cure to those cases which become no recurrences, but new attacks? In other words, many a case may be considered cured which in later years, because of continued pulmonary disease either through local infection or the lymph or blood channels, develops another and new case of laryngeal involvement. The lesson we draw from this statement is that without other exciting causes such cases would remain free from laryngeal disease.

As to diagnosis, it is not necessary to await the appearance of typical ulcerations. Irregular spots of redness, characteristic anemia, typical infiltration and soft papillomatous excrescences are sufficient guide to the experienced. Catarrhal ulcers are rare, and where they occur in phthisic patients they should be looked on as suspicious, to say the least. Avellis has shown that tumors not typically tubercular may yet be so, and even though Schmitzler doubts the tubercular nature of an apparently typical ulcer, because of its readiness to heal, Beale shows how easily an evident catarrhal ulcer may become tubercular.

The presence of tubercle bacilli in the sputum will often clear up a doubtful case, but where they are absent or of doubtful origin, an examination of the scrapings from a suspicious lesion will almost invariably give positive results.

Having thus briefly considered such general topics as would seem essential to a clear judgment of the prognosis of laryngeal tuberculosis, what special questions may assist us in arriving at practical conclusions?

In studying my cases I am particularly impressed with the influence on the progress and termination of the cases by: 1, the nature of the lesion; 2, the position of the lesion; 3, the combination of lesions; 4, the pulmonary complication; 5, the coexistence of syphilis; and 6, the treatment.

The Nature of the Lesion.—Tubercular infiltration is frequently seen alone, but in the majority of cases only early in the disease. It is often associated with new formations of papillomatous appearance, and alone or in this combination continues indefinitely. It is not my purpose to prove, beyond question, a position by offering statistics; these can be perverted to suit any occasion; but one may obtain at least a glimpse of the truth by a study of numbers of cases.

My records cover several hundred cases, but many are incomplete as to result. I find, however, 144 complete accounts of cases, of which 84 were of the infiltrative and papillomatous variety, and of these 26 have gotten worse or died; only 8 of the 26, however, were materially influenced in their downward march by the laryngeal complication, making a percentage of 9 plus. The remainder were either cured or improved. Cases of the ulcerative variety numbered 60, and of these 37 got worse or died, of which 29 were hurried to an unfavorable ending by the laryngeal disease, making a percentage of 48 plus, the remainder being improved or cured at last re-

ports. It is thus shown that a favorable view may be accorded the infiltrative and papillomatous variety over the ulcerative by 39 per cent.

The Position of the Lesion.—No portion of the larynx is exempt from tubercular attack, and it would indeed be tiresome and but slightly profitable to classify in minute detail and separately each site on which a lesion has been found. In a general and practical classification one may be content to divide the lesions into: 1, those which have not yet attacked the epiglottis and aryepiglottic folds; and 2, those in which the epiglottis or aryepiglottic folds or both have been also involved. My records show 103 cases of the former, of which 11 got worse or died, and 41 of the latter, of which 29 died. The relative percentage shows that of Class 1, 10 per cent. plus, and of Class 2, 70 per cent. plus succumbed, thus making the class in which the epiglottis or aryepiglottic folds were involved 60 per cent. more fatal. I am frank to admit that these figures may be subject to criticism, for so many elements must enter into an analysis of cases; still they present the relative gravity of various lesions in laryngeal tuberculosis on a more definite basis than has been heretofore attempted. In a general way many authors have shown results which are in accord with those above given. I refer principally to Krieg, Heryng, Bosworth, Wolfenden, Symonds, Gougenheim, Szech.

While therefore admitting the great gravity of cases in which the epiglottis and adjacent structures are involved, one must recall not a few cases in which even here a cure resulted. Cohen, Symonds, Castex, Heryng, Curtis, Newmann, Whistler, Gleitzmann, the author and others, have placed such cases on record. I have records of 12 such cases cured or improved. Of these, 4 were possibly mixed with syphilis, the remaining 8 being purely tubercular, of which 4 are improving rapidly and 4 are known to be cured.

The Combination of Lesions.—By this I refer to cases which are mixtures of two or more of the forms already outlined or the association with edema, acute tuberculosis or pharyngeal tuberculosis. When complicated by the last named, the prognosis is most grave.

The Pulmonary Complication.—Krause has shown that it is possible for laryngeal cures to result even while the lungs continued to fail, while Browne has shown that improving the larynx may bring about pulmonary improvement. Still the rapidity, extent, length of time, stage and nature of the lung disease must have a very close bearing on the course of the laryngeal complication. Thus also, as Heryng points out, age, constitution, surroundings, the number of bacilli and, according to Thost, whether the disease be hereditary or acquired, play a part in determining the denouement.

The Coexistence of Syphilis.—That syphilis may modify the course of laryngeal tuberculosis is well established. The question of diagnosis, however, becomes here a most important one, for doubtless many an atypical syphilitic lesion has been mistaken for a tuberculous one. The presence of tubercle bacilli in scrapings from such a lesion throws much light on the case. The weight of opinion seems to favor the mollifying influence of syphilis, but as Rice has said, "the prognosis will depend on which one of these two diseases is the more active," or, as Szech puts it, the prognosis becomes more unfavorable as the tuberculosis gets the upper hand. In four otherwise unfavorable cases which I saw cured, syphilis was a decidedly possible complication and greatly influenced the favorable termination.

Well-Selected and Skilful Treatment.—That properly

chosen surgical or medical treatment may greatly influence the prognosis of this disease must be acknowledged. The many remedies which have been followed by individual success and the many rules which have been laid down for surgical and other interference are evidence of rather chaotic conditions in the matter of indications for treatment. Above all should great care and consummate skill be exercised in the application of heroic measures. Many a case has been injured by unskilful or improperly selected treatment.

DISCUSSION.

DR. GEO. L. RICHARDS, Fall River, Mass.—At the Denver meeting I had the pleasure of reading a paper on the same subject, and when the paper was afterward published in the *JOURNAL*, some time in May of this year, I appended a footnote giving the condition of those still living on the 15th of May. One, at least, had no return of the trouble up to the present time. Two are noteworthy as illustrating a point to which Dr. Levy has referred, namely, that the laryngeal trouble may remain cured while the pulmonary condition is getting worse. One of my cases had no return of the laryngeal trouble up to the time of death from pulmonary affection. In another case the laryngeal trouble has been in abeyance for two years, although the patient is slowly succumbing to the pulmonary condition. For the local medicament I used 10 per cent. monochloroparaphenol applied either directly with a swab or with a spray, usually preceded by lactic acid. The results have been as satisfactory as with any treatment in laryngeal tuberculosis; that is, the cases get better but the tuberculosis progresses. I would like to recommend this treatment for the local lesion.

DR. S. E. SOLLY, Colorado Springs, Colo.—I much appreciate Dr. Levy's paper. His conclusions, as usual, are right. I have been gratified in Colorado in procuring comparatively good results in the treatment of laryngeal tuberculosis. The point Dr. Richards made, that many cases are cured even when the pulmonary tuberculosis progresses is true. While I have had a few patients in whom the epiglottis or the folds were affected yield to treatment, yet I agree with the essayist that they very rarely recover. I have three cases of recovery from this condition in my mind at the present time. They were, however, cases in which the laryngeal tuberculosis developed after they came to Colorado, as I saw them in the very beginning, and treatment arrested the progress of the laryngeal disease. These patients are all doing well, both as regards their local and general condition. In one I removed a considerable portion of the epiglottis and in the other two I cuetted deeply and then rubbed in lactic acid. The affection of the epiglottis most often starts in the middle of the under surface, and active and early treatment at this point not infrequently prevents ulceration developing on the free edge. I have in a bad case removed almost the entire epiglottis, with relief of the local disease.

DR. H. W. LOEB, St. Louis, Mo.—I should like Dr. Levy to state to us whether or not he considers the climate of Colorado has anything to do with the rather better prognosis in his results than we get in this part of the world. I have had but one case apparently cured or at least doing well now, five years after the treatment. I do not think the treatment did any good at all. In that case the diagnosis was verified by three other laryngologists.

DR. WILLIAM DUFFIELD, Phoenix, Ari.—I do not want to make any comments or discuss this paper. It is one of the best discussions of this subject that has been either read or printed, to my mind, and my only regret is that every general practitioner could not have heard this paper, because of its great importance to the general practitioners throughout the country. My brief experience as a laryngologist in a western health resort only bears out what Dr. Levy has said. His classification is so excellent and his prognosis so nearly that of our experience that I can only commend his paper. I want to add the testimony of one who lives in that section and who has some experience, that tuberculosis of the larynx is no longer entirely hopeless, and that our prognosis should be very much better than it has been in the past. I hope the attention of practitioners in general will be called to this paper, because I believe it one of our greatest importance.

DR. HOWARD S. STRAIGHT, Cleveland, Ohio—My experience of something like ten years is in line with that of Dr. Loeb. The statistics Dr. Levy gives are very much more hopeful than the results I have had in my cases. I have had one case that I have watched about nine years. The patient is a girl who had tubercular laryngitis with ulceration of the vocal cords and partial loss of the epiglottis two years before com-

ing under my observation. When I saw her she had a lighting up of the process and I supposed she would live only a few months, but she is still living. It is the only case that I have had a chance to follow up all these years. I have seen a good many cases, and with us the disease is almost universally fatal. They almost all die and as a rule within a year.

DR. F. J. QUINLAN, New York City—This is a paper that should provoke much expressive thought from us, coming as it does from a man who is probably in position to see these cases more frequently than we do. As I tried to follow the Doctor, he didn't seem to me to dwell on those forms of laryngeal tuberculosis that are concealed, for instance, in the first stage, viz., that of hyperemia, followed by tumefaction, and then the stage of ulceration and breaking down. I do not know whether the Doctor considered ulcerative tuberculosis in his essay. It is almost impossible, except from the examination of the sputum, to tell any form of tuberculosis. The Doctor admitted, whether intentionally or otherwise, that medication affords a great deal of ease to this class; and I think relief given the patient in deglutition, improving the voice and, improving the general health, is of the greatest importance. For instance, when the epiglottis or part of the arytenoid is involved, much pain is given him in swallowing, and if relief of the pain of deglutition could be brought about, then nutrition and assimilation would certainly be improved. I have used, and very gratifyingly of late, europhen, which arrests and clears up many of those low grades of ulcerative tubercular laryngitis.

DR. ROBERT LEVY, Denver, Colo.—There remain very few words to say in closing. In the first place, it was not my intention to deal with the treatment of laryngeal tuberculosis. All I said under that topic was that proper treatment plays an important part in the prognosis of the disease. Methods inappropriate to the case often undoubtedly hasten its serious outcome, while many cases with properly selected treatment improve. But I had no intention of dwelling on treatment. As to the results, shown by the report of cases, being influenced by the climate of Colorado I simply say that you can draw your own conclusions. Reports have been made from various parts of the country. Dr. Solly, in an essay some time ago, gave a recovery of 25 per cent. Recently another reporter in a resort in the Catskills reported some 40 per cent. of cures. But the point I wish to make especially in regard to prognosis is that the character of the lesions, the situation of the lesions, and the combination of lesions, play the most important part in determining the prognosis. That is the point I wish to particularly bring out. We are now in a position to say that the prognosis of laryngeal tuberculosis must be considered from various standpoints. This paper was presented in order that we might, on seeing a case, be guided in giving something like a reasonable assured prognosis.

RELATION OF UTERINE DISEASE TO SOME OF THE INSANITIES.

BY C. C. HERSMAN, M.D.

Lecturer on Mental and Nervous Diseases, Western Pennsylvania University, Medical Department; Alienist South Side Hospital;

Physician to St. Francis Hospital for Insane, of

Pittsburg; Member of Pennsylvania, West Vir-

ginia (honorary), Allegheny County and

American Medical Associations.

PITTSBURG, PA.

There is no organ or portion of viscera which is not intimately connected with the brain through the sympathetic nervous system.

We know that cell metamorphosis is interfered with by excessive irritation; that cell nutrition is hindered thereby, and, as a result, the function of the cell lessened.

When we consider the function of brain cells, and especially of that portion where we expect mentality to be located, the importance of perfect physiologic conditions is manifest to insure perfect psychologic action. We know that in the brain certain associations of cells called centers have control or inhibitory influence over many of the lower reflex functions when in perfect healthy action. Hence, if these lower reflex functions are badly disturbed or interfered with by disease or accident, may we not expect defects in those functions of the brain above men-

*Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

tioned, sufficient to cause a loss of self-control, and, in so far as they exist, constitute mental alienation? By this continued reflex irritation the energy or reserve force of the cells is so exhausted that continued mental effort is greatly weakened, if not wholly incapacitated. My object is to here show that the great advantage gained by relieving these uterine disturbances, accidents or diseases which cause the reflex irritation in the brain, is to allow whatever inhibitory power remained in these brain cell centers to become active and gradually restore them to their normal condition.

I add this advisedly, for if these uterine disturbances are allowed to return from any cause which lowers the reserve nerve force below a certain standard, we have a return of the mental overthrow, and we should never fail to impress the patient and the family with the necessity of avoiding everything which in her case seems to determine the attack. Members of the profession have often noticed that even a normal menstruation has something to do with a woman's disposition, and that some women with naturally lovely dispositions are anything but angelic during pregnancy. Menstruation, pregnancy and some of the uterine diseases seem to have a psychic condition of their own, the main features of which in many persons, especially of the neurotic type, are a slight irritability or a tendency toward a lack of mental inhibition. In menstruation you will find these symptoms just before the commencement, and with some for a week or more after, which is also her period of highest conceptive power and keenest venal activity. Take a person suffering from chorea, neuralgia, epilepsy, in fact any of the nervous affections, and you often find the trouble very much exaggerated during this period. In some instances we find women suffering from chorea or insanity when pregnant, to be relieved only by abortion or delivery at term. Only a few years ago I had a case in which death seemed imminent, but after abortion, the immediate cause of which was unknown, the insanity disappeared and she made a rapid recovery. Not only that, but we meet patients who have a persistent desire to eat unnatural things at these periods.

We, as a profession, also know that the normal performance of the functions of the organs of gestation in many cases is essential to mental soundness. We know that a profound mental impression on most women will cause a cessation of the flow, and in the insane we do not expect a regular monthly menstruation during the stage of acute symptoms. One of our writers has said, in reference to the monthly flow: "The melancholics are more depressed, the maniacs more restless, the delusional more under the influence of the delusions; if the subject of hallucinations, they are more intense, the impulsive more uncontrollable, cases of stupor more stupid, and the demented may be more enfeebled or excited." This is a fact easily verified by spending some time in a lunatic asylum; although there are exceptions, it applies to many of the insane.

The climacteric is another time in life at which insanity is liable to develop, especially in maiden ladies. By some it is called "old maid's insanity," "ovarian insanity." We are told that the disease usually occurs in the unprepossessing, who have lived a severely virtuous life in thought, word and deed, and often a very religious life, on whom Nature, just before the change of life, takes revenge for too severe a repression of all manifestations of sex. This may take a turn similar to nymphomania, or it may be true nymphomania, and the patient usually thinks that some one is greatly enamored of her, mostly some one prominent in society or the community, very often a preacher.

The possible explanation of insanity occurring at this period is, that continence means atrophy, disuse means functional decay, and the influence of persistent continence on the individual, whether male, or female, is to dwarf, yea, in many respects to destroy the breadth and fullness of physical and intellectual individuality. It is a well-known fact that the "ovaries and testicles have at least three distinct actions; the first, generation; the second, their action through absorption on the central nervous system, which give to men and women their physical, moral and intellectual characteristics. The third is a special tonic action which reinforces in a special way the action of the spinal cord and brain, the last of which is of importance to my subject. These are well-known functions which can not be disputed.

Referring again to pregnancy, few women pass through the period of gestation without there being some change mentally from the normal. However, scientific writing on the psychology of pregnancy is scarce, but without going into the discussion of this subject, we find the reasoning power, moral sense, the imagination, memory and some other natures are often different, and very different from the natural person as we have known her. And still, as a further argument of the intimate sympathetic connection of the brain and uterus, how many of us have seen in the lying-in chamber or during the menses, by a sudden mental impression, either joy, grief or fright, the flow, menstrual or lochial, suddenly stopped; if menstrual, not to return, or to do so after due course of suffering; if lochial, to return after several days, to be followed by a tardy recovery. Were every practitioner an alienist and every alienist a practitioner, many cases of insanity might be averted; but, unfortunately, the alienist seldom has the opportunity offered him to treat insanity in its incipency, and the general practitioner is too apt to hesitate when he sees the mind coming unbalanced, and after some delay seeks the advice of the specialist, thinking the disease has entirely overreached his domain and that the alienist possesses some knowledge, all his own, which makes the cause plain to him. If we could get the general practitioner to understand more generally that insanity is often a symptom of trouble remote from the brain, and that he must look for the seat of the trouble, not always in the head, but in some organ, any organ, all organs, we should possibly have fewer chronic insane.

I can not refrain from mentioning in brief two cases from the St. Francis Hospital of Pittsburg, insane department. A Jewess, married, very excited, was in the Hospital for a few months. She also suffered from chronic endometritis, was curetted and went home in three weeks with no mental symptoms. Again, a Polish girl who had been in the Hospital for more than a year with no improvement mentally, on examination was found to be suffering from chronic endometritis. She went home cured in two weeks after curetting the uterus. They have both remained well, a period of about five years.

It is difficult to draw the line where general practice should cease and special practice should begin. The two should go more hand in hand. The psychologist has given us his theories and classifications, thereby complicating and preventing the advance in the study of diseases in which mental aberration is the symptom that otherwise would have been made had general practice and special practice not been so widely divorced. I do not wish to convey the idea that insanity as a symptom is always indicative of a diseased organ. It may be a faulty condition, a slight disturbance, a functional trouble

only, which, if corrected, might prevent any further anxiety. It would be well for every practitioner of medicine to read the very able article by Dr. Samuel Ayres of Pittsburg, on "Gastro-Intestinal and Hepatic Disorders, Especially, Chronic Gastro-Intestinal Catarrh in Relation to the Etiology of Some Cases of Insanity," and that by Dr. Alice Bennett of Norristown, Pa., on "Insanity a Symptom of Bright's Disease." In these articles we have ample argument to look for a cause in many cases outside the brain.

In lunatic asylums we find a wide field for the gynecologist, but many times very unsatisfactory subjects to treat. I am aware we usually look to the brain when searching for the cause of insanity, and many times, I fear, when we should look elsewhere. It is necessarily the immediate seat of disturbances, but the remote cause may be very foreign to that organ.

I am rejoiced to know that such men as my friend and teacher, Prof. George H. Rohé, M.D., Sykesville (Md.) Insane Asylum, now deceased; W. P. Manton, M.D., Detroit, Mich.; Joseph Price, Philadelphia, and others whose very striking articles I have had the pleasure of reading, bearing on the subject, have been giving their attention to this line of thought, but in more heroic measures than I have, as they have resorted to the knife, while I have nothing severer to report than the curette or local application. I feel that they have opened up a new field for the gynecologist, and established the beginning of a new era for the alienist.

In looking up statistics for Pennsylvania I find that for the year ending Sept. 30, 1891, there were admitted to hospitals, 788 insane women and girls; in 1892, 802; in 1894, 1146; in 1895, 931; in 1896, 806. Of that number there was 9.5 per cent. of the 1891 admissions with a history of uterine trouble given as the cause of insanity. Of these 788, we have the history of 480 only, 308 having no cause assigned for the insanity. In the percentages of the years from 1892 to 1896, inclusive, I have confined myself to the physical causes alone, which include that class of causes only which produce uterine disease or disturbance. These percentages are as follows: In 1892, 21.6 per cent.; in 1894, 29 per cent.; in 1895, 23.3 per cent.; in 1896, 18.3 per cent.; the percentages of all admissions running slightly higher than in 1891. The causes given are child-birth, climacteric, dysmenorrhea, menopause, onanism, menstrual derangement, pregnancy, abortion, puberty, puerperal causes, venery and uterine disease.

Had we the history of the remaining numbers of each year not given, and the same ratio prevailing, we would have our percentage increased to an alarming degree, to say the least.

With these percentages staring us in the face, should we not be more concerned about our patients who are suffering from uterine disease, and especially those of a neurotic type? Many times, if the uterine disturbances were relieved the insanity would be removed. I can not refrain from referring to another woman in the West Virginia Hospital for the Insane, who was suffering from intrauterine vegetations and dying a slow death from slight continuous hemorrhage therefrom. After dilatation and a thorough curetting, she made a complete recovery from the uterine disease and was discharged quite well mentally. Knowing, as many of us know, the association of uterine disease and mental disturbances, it is surprising that there has not been a closer study into the relations of the two, that we have not more literature on the subject, thereby giving an impetus to the investigation of mental symptoms and their causes

in some remote organ, and to establish a relationship if possible.

No fact has been more clearly established by psychologic investigation and neurologic anatomy than that the human anatomy is wholly dominated by the sympathetic nervous system. The whole physical structure is subservient to its influence. It is a despotic force with compulsory requirements. There is no stasis, either active or passive, no modification of the activities, no irritation, however slight, but will manifest itself through the sympathetic nervous system. I have seen, as already stated, in the treatment of insanities the result of uterine disease, the local or surgical treatment of the trouble not only cure the uterine disease, but effectually cure the concomitant disease occurring in the brain, thus showing the mysterious (?) and unaccountable (?) connection between them. A woman becomes the victim of nymphomania, amenorrhea, dysmenorrhea or some one or more of the many forms of uterine disturbances; it may take on one of the amatory phenomena, especially of nymphomania, a religious turn, devotional enthusiasm of so violent a character as to necessitate removal to a lunatic asylum—and these are not fictitious cases—and all this because of local irritation.

Finally, we may have a uterine trouble, an irritation, transmitted through the hypogastric, spermatic and other ganglia and plexuses, from cell to ganglion, passing onward to the sacral, to the cord, the medulla oblongata and the cerebellar and cerebral ganglia, finally by coronata radiata fibers to the cortex of the brain, that most valuable distribution of nervous matter, the seat of mentality and intellectuality, ending in a complete overthrow of the noblest propensity of woman, driving her to a madhouse, there to drag out her existence within the walls of her life prison. Thus we have the beginning and end of a very sad picture.

TREATMENT OF CHRONIC CROUP.*

BY EDWIN ROSENTHAL, M.D.

PHILADELPHIA.

Many of us who practice intubation in the treatment of laryngeal diphtheria occasionally meet with a case that causes us much care and annoyance, by reason of the duration of the symptoms of stenosis. Since the advent of the diphtheria antitoxin our methods of treating intubation have changed. Where, before the use of this remedy, we permitted the tube to remain in the larynx at least a week before we thought of disturbing or removing it, we have found that, in the majority of cases, the tube can be removed, or removes itself by expectoration, before the period of five days, or 120 hours. If we are called early enough, that is, before intubation becomes a necessity, our cases—in the majority of instances—recover promptly on the third day, and at the most the symptom of stenosis disappears before the fifth day. Still, we meet cases that are not bad enough to require the presence of a tube, yet require treatment, by reason of that symptom—stenosis remaining or appearing at certain intervals. I have noted this quite frequently, and more remarkable, since the antitoxic action of the serum had removed all visual traces of the disease and the tube removed—if the case required it—and the case pronounced cured, the symptom—stenosis would return in a week or ten days, and would require a reintubation and a further treatment.

The question in our minds is the cause. I wish to ex-

*Presented to the Section on Laryngology and Otology, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

clude any injury to the larynx by reason of the intubation, or by the continued presence of the tube in the larynx, as these cases are in the majority of instances a mechanical injury. And the cases I speak of are found frequently where intubation was not performed, and another cause than this must be looked for. As an instance, I will briefly describe a case:

William O., aged 3 years, of Swedish parentage, was taken ill with clinical evidence of diphtheria on Jan. 6, 1899. Bacteriologic test conclusively proved the presence of the K-L bacilli, also the streptococcus. An injection of 2000 units of the diphtheria antitoxin was administered, with the result of a disappearance of all visual traces of the disease in the pharynx. On January 14, the patient had a croupy cough, which was treated with an expectorant mixture, and three days thereafter symptoms of stenosis became marked, but not to such an extent as to necessitate intubation; at this time 2000 units of diphtheria antitoxin were again injected, with the result of somewhat relieving the stenosis. The lymphatic glands at the angle of the jaw were somewhat enlarged. Medical treatment was continued and the symptoms of stenosis relieved, but they reappeared, and February 10 were as bad as if no treatment had ever been given. Bacteriologic examination—five weeks since the first—showed an absence of the K-L bacilli, but still the presence of the streptococci. At this date, 10 c.c. of the antistreptococcal serum were injected, with the result of a disappearance of all symptoms of stenosis on the third day thereafter, and a perfect cure.

The presence of the streptococcus pyogenes as a complication in diphtheria is very well known. Its absence would prove the exception; but that the symptoms of chronicity in this affection should be ascribed to it, I think is something new. The strepto-infection may alone prove sufficient to produce the disease known as croup, as may be verified by bacteriologic test, and the knowledge thereof will be a sufficient guide to the treatment.

The cause of "chronic croup" may be otherwise than this. I have seen the too energetic use of hydrogen peroxid produce croup secondarily to other varieties of diphtheria, and in cases intubated, I believe, the constant use of the peroxid may be nothing but injurious. Therefore, in treatment, and since the advent of the antitoxin, I have used the peroxid simply as a lubricant, for by its use I have been enabled to more readily practice intubation. Its further use I have limited, and only diluted and with an atomizer, to those instances where the tube became clogged with inspissated mucus or other secretions from the throat. Using this remedy so carefully, I can not charge to it the cause of the constant intubation, an intubation that may last from five to eight weeks, or in cases where the tube was removed and the case pronounced cured, the necessity of intubation after the lapse of seven or ten days. I have elsewhere reported (*Phila. Med. Jour.*) a case of chronic croup wherein intubation was practiced, the tube removed, and reintubation on the eighth day thereafter, antitoxin meanwhile being used; and another case intubated, the tube removed by expectoration on the third day, where the symptoms of stenosis recurred every week for three weeks, and in which over 20,000 units of diphtheria antitoxin were used until a final recovery. The treatment of these cases was strictly antitoxic, but when I saw there was no response, and that some other factor was at work, producing the stenosis, I investigated, both clinically and bacteriologically, with the result that I found the main and certain cause of chronic croup was, in the complicat-

ing streptococcal bacteria, and by its presence so guided my treatment that my results have been most gratifying.

The treatment is as follows: When I am called to a case of croup, whether it requires intubation or not, I immediately use the antitoxin. I then make the bacteriologic test. If I find the presence of the streptococci I immediately make a further injection of the antistreptococcal serum, and continue with the antitoxin, as the case may require. If, however, as I have seen sometimes, there is a negative result as regards diphtheria, and a positive result as regards the streptococci, I drop the antitoxin and continue the treatment only with the antistreptococcal serum.

The method of its use is precisely similar to the antitoxin, with this exception. Where in the antitoxin treatment a smaller dose is begun, and a gradual increasing dose the rule, with the serum a large initial dose is the beginning and the same or a smaller dose follows. The time to give the injection is also different. In the antitoxin, any time is of value; with the serum, the early morning or when the temperature begins to rise. The parts chosen are the loins or side of the chest. The parts are cleaned with alcohol soaked on corrosive cotton or gauze, and after injection the aperture is closed with iodoform collodion. The commencing dose is 10 c.c., or even a larger quantity, and this is repeated on the same day or the day following, and is continued until its influence is shown by a decline in the temperature and pulse-rate, and an amelioration of all symptoms. The duration of the treatment is the same as with the antitoxin, and on the third day we may note evidence of a cure. The serum can be used to any quantity, and is as free from danger as is the antitoxin, the same sequelæ as noted with the antitoxin, as eruption, albuminuria and the like, are found here, and in all the manifestations the results are equal. In all cases where the bacteriologic examination shows the specific germ, the serum should be used, and in those cases of chronic croup, or where the diphtheria bacilli are absent, it is always in order to use this serum.

517 Pine Street.

DISCUSSION.

THE CHAIR—The Chair would like to ask the Doctor the length of time required to find the streptococcus infection.

DR. EDWIN ROSENTHAL, Philadelphia—Twenty-four hours.

THE CHAIR—And in the meantime you use the antitoxin?

DR. ROSENTHAL—To be sure; it is diphtheria. But if I find only streptococci, then I use the antistreptococcal serum.

THE CHAIR—I notice the diphtheria antitoxin has been used over and over again, but ordinarily it is the Doctor's experience, I presume, that the antitoxin to be of value primarily should be used within a very short time.

DR. ROSENTHAL—In a very short time, yes.

THE CHAIR—I mention that because in going over the literature I found one case of death after the use of antitoxin reported and it was rather interesting to say the least. The patient had had diphtheria for some time without the parents allowing antitoxin to be used. On the fifth day the physician gave an injection of nitroglycerin and antitoxin at the same time, and it was claimed that death was due to antitoxin. Of course we know that is not true.

DR. GEO. L. RICHARDS, Fall River, Mass.—I would like to know what the essayist means by the word "croup."

DR. ROSENTHAL—Any stenosis of the larynx due to diphtheria. When I find, as I do sometimes, that it is not due to the Klebs-Loeffler bacillus but to streptococci, it is still croup, but of course not true diphtheria.

THE CHAIR—In other words, you use "croup" to mean an inflammatory process causing dyspnea?

DR. ROSENTHAL—Yes; there are cases of croup not due to the diphtheria bacillus.

QUESTION—I would like to ask Dr. Rosenthal if he has in any case of diphtheria been unable to get the bacilli?

DR. ROSENTHAL—Yes.

WHAT ARE ANTITOXINS?*

BY R. G. ECCLES, M.D. P.H.G.

Fellow of the American Association for Advancement of Science;
Member of Committee of Revision of the U. S. Pharmacopœia,
of the American Medical Association; of the American
Anatomical Association; of the Medical Society of
the County of Kings, New York, etc.

BROOKLYN, N.Y.

In a lecture delivered by Dr. T. Clifford Allbutt, regius professor of physics in Cambridge University, England, before the Johns Hopkins University in October, 1898, occur these words: "The study of origins, then, is not only the new method of modern criticism, of modern history, of modern anthropology, of our reading of the evolution of the universe itself from elements which even themselves are falling under the same analytic inquiry, but the study of origins is leading to a revolution in our conceptions of therapeutics, as all of these other studies; a revolution which as yet we have not fully understood."

Never were truer or more profound words uttered than these. The revolution to which Prof. Allbutt refers is one so momentous that but few have scanned the horizon of modern therapeutics closely enough to duly appreciate its far-reaching consequences and importance. That this fact be made clear to those present at this Section meeting, and to as many members of the AMERICAN MEDICAL ASSOCIATION as do me the honor of reading this essay when it appears in the JOURNAL, permit me to ask how much and what does the name "Antitoxin" stand for when seen in print by the average medical man? To some, perhaps to most, progressive physicians, it means a new kind of remedy that may or may not be better than the old and well-tried ones of the past. How many, do you suppose, can see more than this it is as related to the destiny of our race? To the skeptic it is but the shibboleth of a new therapeutic fad. He doubts its value, and quietly to himself mutters, "what fools these mortals be." To the hosts of the sectarian pathies and their antivivisection allies it is nothing more than a filthy and diabolic lying invention of the vivisector, concocted as a piece of spurious evidence to prop up his wicked designs against dumb brutes.

How large a proportion of mankind see any more than one or the other of these claims in it? Have you watched the steps by which we have come to believe that such things as antitoxins really exist? Have you followed the logic of the men who have claimed to discover them? Have you seen how, step by step, the belief in their existence came to these men? If you have not, then you are not prepared to fully appreciate but the smallest fraction of what their discovery means. The antitoxins themselves are of far less importance to the race than are the solutions of the problems that cluster around them. They are but stepping-stones leading back into the mystic origins to which Prof. Allbutt refers. To fully and correctly understand what they are and how they are produced is to be able to solve some of the deepest riddles of life, health and happiness. They are leading us toward a true science of therapeutics and a true conception of how we have accidentally in the past cured diseases, and how we shall in the future prevent death "by the subtle strategy which consists in knowing all the moves of the game," as Prof. Allbutt put it. What little we have discovered concerning the antitoxins has come to us from a pursuit of the same methods of thought, the same style of research, the same processes

of verification, and through the same class of minds as gave us the whole fabric of modern civilization. They have come to us as a part of the grand mental movement that built up the doctrines of the conservation of energy, the unity of natural phenomena and the universality of evolution. Have you noticed the methods of the men who are at work on the subject? Have you seen how they turn the light of counter-experiment and counter-criticism on each other in scorching concentration? Have you noticed that every question is put to Nature for final reply, and every answer verified or condemned by a competent peer? Have you observed how every mistake in logic is pounced on by a whole army of coworkers, and every mistake in experiment is mercilessly gibbeted in the same manner? Every idea and every fact must run the gauntlet and survive or perish in the struggle. The system only needs to be understood to be respected. When serums, toxins and antitoxins reached the general profession they had already been tried and found worthy of consideration by experts. They were given to us for further trial with human beings, where we have a right to experiment, but they may not. Whatever our verdict may be concerning them, it can not alter theirs, and will only prove that we had new and altered conditions to deal with, if it is adverse. To decry them without trial, or with unfair or imperfect trial, is dishonest, sinful, and unjust to the whole of animated nature, now and through all future time. We, as medical men, owe it as a sacred duty to give them a fair trial. Whether we do or not, however, workers in this field of pathology and physiology will go on making their discoveries along the same line of investigation. The laws of their action will be found, their chemical composition discovered, and their bearings on the greater questions of life as a totality worked out.

What are some of the questions now before them in which we as physicians are interested? It is only necessary to name them for all to see their importance. Here are a few. How come we to gain tolerance of poisons? What is the nature of immunity? How do neurotic poisons poison? How are toxins produced? How are they related to antitoxins? How do they act on each other? Is the action chemical or vital? To what class, or classes, of organic bodies do they belong? Is either, or are both, enzymes, albumins, globulins, or are they even proteids?

As a sample of the way the work is being prosecuted in the endeavor to get replies from Nature to these and kindred questions, let us take the late experiments of Besredka with orpiment or yellow sulphid of arsenic⁶. He found that injections of this almost insoluble substance, if very finely powdered, killed quicker than when injected in a suspension composed of coarser particles. When a membranous sac containing a quantity of the orpiment is placed in the abdominal cavity of a guinea-pig it will die almost as quickly as when the same quantity is injected directly into the same place. In the one instance the arsenic sulphid had to dialyze through the membrane, a thing it could only do by being dissolved; in the other it was brought into direct contact with the tissues. As this pigment is among the most insoluble of known poisons, it is here made manifest that it does not poison by mere contact. It evidently kills by chemical means. It can be stopped from killing by a proper chemical antidote. Besredka further found that if the quantity of orpiment injected is not too large the leucocytes take up the yellow particles into their structure, and for as long as ten days can be seen carrying them

*Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Fifteenth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

around. Constant examination shows that the poisonous material is being slowly dissolved and a less poisonous substance produced that can be eliminated by the kidneys. That the leucocytes take up and dispose of many other poisons than orpiment in this way has been shown by Metchnikoff and Kober². The salts of silver, mercury and iron have been found to be carried throughout the system in this same manner. This work is done by the same leucocytes as are known to englobe and destroy microbes. It is evident that they have the power of secreting something that can unite with the poisons which they take up. What this something is happens to be one of the issues of the hour. That the leucocytes are not the only producers of this something that antagonizes poisons was shown by Widal and Nobecourt with strychnin and morphin⁴. They injected these hypodermically into animals with a small amount of fresh, sterile, brain substance, and found that the animals would live after double or treble the dose that would kill them without the brain substance. It appears as if the brain substance contained something that neutralized the poisons. Thoniot and G. Brouardel also found that when nerve-substance was used the results were the same. They kept their animals alive by injecting nerve substance in an emulsion before injecting the fatal dose of strychnin⁵.

In 1896 Van Ermengen discovered an anaerobic bacillus in ham which had caused some serious cases of illness at Elzelles, Belgium. He produced the same train of symptoms with sterilized cultures of his bacillus⁶. Kempner and Pollock have isolated the poisonous toxin of cultures of Van Ermengen's bacillus and studied its effects on the cells of the bodies of animals. Injections of this toxin were found to cause degeneration of the cells of the spinal cord. A finely granular disintegration or "partial pulverization" of the corpuscular elements occurs. The physical changes revealed by the microscope correspond with the symptoms observed both in time and volume. They immunized animals to this toxin, and securing a serum from the immune animals, studied the same degenerative changes under its administration. If the antitoxic serum was injected soon after the toxin, the degeneration was but slight. When the antitoxin was mixed with the toxin before injection no degeneration occurred⁷. What Thoniot and Brouardel found true regarding the action of nerve tissue injections with poisonous doses of strychnin, Wasserman found held good for nerve tissue and the virus of tetanus⁸. A. Marie found that what was shown by Widal and Nobecourt to be true regarding the action of brain substance on strychnin and morphin was equally true with brain substance and tetanus toxin. He declares that he found it necessary to have a previous direct contact of the toxin and the brain tissue to have it act⁹.

Metchnikoff has probably studied the subject of antitoxic action more than any other single individual. It was forced on him because it was at first supposed to be antagonistic to his belief regarding phagocytosis. He finds that while the brain tissue of the guinea-pig protects mice as well as guinea-pigs from the toxin of tetanus, neither the brain nor the spinal cord of tortoises or fowls has any protective effect on tetanus injected into guinea-pigs or mice. He believes that his many experiments have established it as a general principle that the more susceptible an animal is to tetanus the more efficacious its nerve substance or its brain substance is to tetanus. To this rule there are exceptions, and among them is the frog. Its brain seems to have no antitoxic power, although it is quite susceptible to the poison. In

a former communication he showed that low cryptogams, like bacteria and fungi, destroy toxins but do not produce from them antitoxins, that invertebrates can not produce the antitoxin of tetanus in amounts that are appreciable, that only in animals as high as and higher than the crocodile are antitoxins produced; that in fowls the antitoxic power resides in the blood, and not in the nerve tissue, and that phagocytic power is older than antitoxic in the life history of our planet¹⁰. He thinks that mixtures of brain substance and nerve substance with poisons do not destroy them by any kind of chemical union, but that such mixtures produce an inflamed condition of the tissues, when and where injected, that attracts leucocytes and encourages phagocytosis. Their activity is the agent of destruction, and not the nerve substance. W. W. Stephens and W. Meyers have found in their experimenting with serums that the same quantity of serum always neutralizes the same amount of toxin, whether in the test-tube or in the body of the animal. They hold that this strongly indicates an adhesion to the chemical law of definite proportions, and, therefore, to chemical and not vital action¹¹. Cantuzene comes to the support of Metchnikoff, and shows that anything that suspends phagocytic activity in the presence of a powerful toxin causes the animal to die. This he holds indicates vital activity and not chemical¹².

Ehrlich finds that toxins and antitoxins affect each other more promptly in concentrated than in weak solution, in hot than cold solutions, and, with Stephens and Meyers, that they bear quantitative relations to each other. He claims that in the case of ricin he has proof of union in definite proportions¹³. He advances the theory that antitoxins are the tissue elements with which the toxins combine in the body to poison it. The irritation of partial poisoning causes the system to produce an increased amount of such tissue substance, this enters the circulation and acts as a means of neutralization before the toxin can get at the tissues for which it has an affinity. He thinks that there could be no poisoning of the cells if they did not contain elements having an affinity for the poison, and when the poison is fixed on such elements its power for further harm is gone. Just as a poisonous alkali unites with a poisonous acid to form a non-poisonous salt, so do the poisonous toxins unite with the tissue elements to form non-poisonous products. But as the tissue has thus been robbed of its necessary elements by the poison, a demand is made on the system to produce a surplus of such material, and this surplus constitutes the antitoxins. This ingenious theory has a number of able supporters in Europe. A number of the experiments which are here referred to seem to give support to it.

R. Pfeiffer and Marx accept this theory as a partial explanation of the phenomena of acquired immunity, but they do not believe it can explain the presence in the body of substances having bactericidal power. They find that the spleen shows this bactericidal power. They find the blood, and that the spleen, bone-marrow, lymph-glands, and possibly lungs, contain larger amounts of it than the blood. Here they hold that they have evidence that the leucocytes are neither the only nor the most important agents in the destruction of disease germs and disease poisons¹⁴. A. Wasserman thinks that the toxins and some of the organs react with each other to produce by a chemical union new bodies having bactericidal power¹⁵. The fatal objection to this theory is that it violates the law of parsimony by introducing new substances that we know nothing about, with properties that are unusual. Such lawless theories are the kind that

bring all theorizing into disrepute among men not accustomed to scientific methods of thought.

Three legitimate theories now hold the field, and as they are each guiding distinct sets of exceedingly able men in their work as experimenters, it is pretty certain that the question will soon be settled by the consensus of the competent. It is not at all unlikely that all three have elements of truth within them, and that no one of them is entirely able to explain all the facts. The chief weakness of Ehrlich's theory is its inability to explain the fact pointed out by Metschnikoff, that frogs are very susceptible to tetanus, and yet their brain substance does not act as an antitoxin. It likewise fails to embrace a large number of facts that one might naturally expect it to. This last objection is equally powerful against the phagocyte theory, when pressed forward as a complete explanation of the phenomena of immunity. The experiments of Pfeiffer and Marx, already referred to, are as damaging to the phagocyte theory as to that of Ehrlich, in that they positively limit the sphere of action of each. If the spleen, bone-marrow, lymph-glands and lungs have greater bactericidal power than the blood, this throws the phagocytes into an inferior position as microbe killers. There may be a number of ways in which such destruction occurs and by which immunity can be maintained. E. de Cyon, of the Physiologic Institute of Berne, Switzerland, has shown that iodothyronin from the thyroid gland, instantly destroys the toxic effects of atropin and nicotine¹⁶. If it also destroys the toxins it would be a very useful ally to the phagocytes, as well as the bacteria-destroying organs in their work. Salkowski¹⁷, Brieger¹⁸, and Ehrlich¹⁹, have shown that sulphuretted hydrogen and some antiseptics can destroy tetanus toxin²⁰.

The theory which seems at present to permit of the generalization of the largest number of facts is the one that assumes that the antitoxic and bactericidal power of serum is lodged in substances that are of the nature of enzymes. The fact that they have been precipitated by Brieger and Boer by numerous agents in a way that pepsin, trypsin and other enzymes are thrown out of solution, indicates a possibility of their being enzymes²¹. For over a year Emmerich and Loew have been at work in Munich studying how enzymes are related to immunity²². Nencki and Pfeiffer made the suggestion of some sort of relationship between them in a way that led Emmerich and Loew to take up such work. Prof. T. Lauder Brunton, in his address at the International Medical Congress at Moscow, said: "Perhaps the hypothesis I mentioned eight years ago to my pupil and friend, Mr. Hankin, that the germicidal power of organisms is proportioned to their power to produce enzymes, may not be altogether unfounded, and possibly we may discover also that immunity, natural or acquired, is nothing more than an extension to the cells of the tissues generally of a power which is constantly exercised during digestion by those of the intestine and liver²³. It appears then that the credit of first enunciating the theory belongs to Brunton. He, however, acknowledges his indebtedness to Dr. Johan Baptista van Helmont, a celebrated iatrochemist and disciple of Paracelsus, of the early part of the seventeenth century. Emmerich and Loew claim to have found that a number of different kinds of bacteria produce enzymes fatal to themselves and other germs. When combined with animal protein the enzyme is transformed into an immunizing product. Both substances have been isolated in tangible form so that it is a fully substantiated fact. DeSchwinitz has also isolated an enzyme from hog cholera germs, that

immunizes guinea-pigs. Kondratieff declares that such evidence as he has been able to collect experimentally and otherwise compels him to believe that the antitoxins are related to the enzymes²⁴.

Enzymes are substances that have the power of causing other organic substances to alter their chemical composition by their presence while they themselves remain unchanged. Like parsons who marry two people, while the act of marrying them does not alter their own state in the slightest, these enzymes cause chemical unions to occur while they retain their condition of singleness. Those we know best, such as pepsin, ptyalin, trypsin and invertin, all force water into the chemical composition of various food stuffs, and enable them to dialyze through the walls of the stomach or intestines. They probably split all the substances they act on into smaller molecules²⁵. There are other ferments that instead of aiding solution and dialysis hinder the same by coagulating or fixing substances. It is evident that all living forms, depending as they do on foods for existence, must have the power of dissolving, coagulating, and fixing such foods as an essential condition of life. As all such changes, so far as we have ever been able to discover, are brought about by enzymes, we have no logical right to assume that any other form of agency is at this kind of work until one is found. Step by step the so-called vital force has been driven by the enzymes out of this department of life. They have been found in every form of life from the bacteria and molds up to monkeys and men. As the processes of life are unthinkable without the accomplishment of their kind of work, and as they only are known to do such work, we can not avoid the conclusion that they must have existed as long as life has existed on the planet. They have ever co-existed with protoplasm, and must have been subject to its experience. As the ameba has gone upward in development toward the brain cell, every change must have brought a corresponding change in the enzymes that made its food soluble within its structure, and that fixed that food as solid tissue again. The enzyme is the door-keeper of the cell. It is also, in its opposite form as a coagulant, the host within the cell. The first kind aids the substance in getting in, or if in and converted into waste makes it soluble so that it can get out. The second kind has a function that is just the reverse. It can keep out what is not wanted in or keep in what is not wanted out by rendering it insoluble.

Ehrlich has lately discussed this subject in connection with the administration of drugs²⁶. He uses Witt's hypothesis of "stiff solutions" to explain the processes of staining tissues and of the passage of drugs through the cell. Every chemist who has worked in commercial organic chemistry knows how by the aid of acid and alkaline radicals he can make alkaloids and the like miscible or immiscible as he chooses in different solvents. In a similar way the enzymes may render various substances soluble or insoluble in the substance of the cell. By adding the sulphonic acid radical to aniline it is at once rendered unable to stain tissues and to poison them. Its inability to enter the tissue cells in the new form renders it unable to poison such cells. If it could get in to stain them it could get in to poison them. Being excluded it can do neither. By acting on toxins and other organic poisons with the special enzymes of the different kinds of tissues so as to alter their structures and make them unable to penetrate such tissues, they would at once be rendered harmless. Not a single new enzyme needs to be formed. No violence has to be done to Nature to make such a

hypothesis true. The whole material is now and always has been ready formed in the body to meet every emergency. All that is needed is an alteration in the proportions of the fixing and of the solving enzymes that constantly are at work in behalf of the special tissue to which the poison has an affinity. Natural selection must during all past time have been picking out to live, such animals as were able under the irritation of selective poisons to increase their stock of the fixing enzyme for that tissue and killing off every animal that could not make such an adjustment. Organic poisons and foods merge into each other in their chemical structures. The processes of digesting the one are not greatly different from those of digesting the other. To split up a poison and make it immiscible in the cell matter can not be much harder than to do the same thing for a food. It may only require an increase in force. Increased volume of output of one kind of enzyme and diminished output of the other and opposite kind could easily come from a change of demand, if this function follows the laws of all other known bodily functions. According to this hypothesis, then, immunity is due to an increase in the production of the fixing enzyme of that tissue which happens to be the special point of attack of the poison, this increase being due to the irritation of the tissue elements that the poison seeks to damage. As food turned into the stomach brings hydrochloric acid and pepsin, so poison turned into a cell brings its digesting enzymes in continuously increasing proportions as the irritation persists. After the cell has been irritated for a considerable time, it gets into a habit of producing an excess, thus establishing continuous immunity. As an overproduction of gastric juice will cause intense hunger, so an overproduction of other enzymes would be expected to produce their form of hunger, i. e., a desire for the poison that caused them to be produced in excess. We find that this is actually the case. The morphin fiend has morphin hunger, and the tobacco user has nicotin hunger. The enzymes that keep these poisons from reaching the tissues for which they have a special affinity, in doses that are dangerous, when not having the poisons to act upon may produce this special form of poison hunger.

BIBLIOGRAPHY.

- 1 Phila. Med. Jour., Dec. 17, 1898, p. 1296.
- 2 Ann. de l'Inst. Pasteur, 1899, xliii, p. 49; JOURNAL, Feb. 25, 1899, p. 436.
- 3 Med. News, lxxiv, p. 147; Merck's Archives, March, 1899, p. 129.
- 4 Sem. Med., p. 95, 1898.
- 5 Soc. des Hôp., March 25, 1898; Am. Year-Book of Med. and Surg., 1899, p. 985.
- 6 Centr. f. Bakt., Bd. xix, p. 442; Brooklyn Med. Jour., May, 1899, p. 298.
- 7 Deutsch. Med. Woch., 32, 1898.
- 8 Sem. Med., p. 11, 1898; Am. Year-Book of Med. and Surg., p. 985, 1899.
- 9 Ann. de l'Inst. Pasteur, February, 1898; Am. Year-Book of Med. and Surg., p. 700, 1899.
- 10 Ann. l'Inst. Pasteur, February, 1898; Am. Year-Book of Med. and Surg., p. 700, 1899.
- 11 Ibid., p. 950, 1899; Proc. Phys. Soc., May 7, 1899.
- 12 Ann. de l'Inst. Pasteur, April, 1898; Am. Year-Book of Med. and Surg., p. 701, 1899.
- 13 Abdruck a d. klin. Jahrb., Band vi, Jena 1897; Centralblatt f. Bakt., Parasit. u. Infectiönskr., p. 357, 1897; Am. Year-Book of Med. and Surg., p. 686, 1898.
- 14 Zeit. f. Hyg. u. Infectiönskr., Band xviii, Heft 2, April, 1898, Am. Year-Book of Med. and Surg., p. 701, 1899.
- 15 Berlin. Klin. Woch., March 7, 1898; Am. Year-Book of Med. and Surg., p. 686, 1898.
- 16 Nouv. Rem., March 8, 1899.
- 17 Berl. Klin. Woch., S. 545, 1898.
- 18 Zeit. f. Hyg., Bd. xix, S. 111, 1899.
- 19 Klin. Jahrb., Bd. vi, S. 18.
- 20 Am. Year-Book of Med. and Surg., p. 1012, 1899.
- 21 Zeit. f. Hyg., Bd. xxi, S. 259, 1896; Am. Year-Book of Med. and Surg., p. 1012, 1899.
- 22 JOURNAL, Vol. xxii, p. 722; Science, March 10, 1899.
- 23 Am. Medico-Surg. Bul., Vol. xi, p. 81.
- 24 Centralbl. f. Bakt., Bd. xxi, S. 407, 1896; Am. Year-Book of Med. and Surg., p. 1012, 1899.
- 25 Gamgee's Chemistry of Digestion, 79 to 230.
- 26 JOURNAL, xxxii, p. 390; Merck's Archives, March, 1899, p. 128.

CONDENSATION AND PRESERVATION OF MILK BY REFRIGERATION.*

BY HENRY O. MARCY, M.D.

BOSTON.

In an article contributed to the AMERICAN MEDICAL ASSOCIATION last year¹, entitled "The Milk-Supply of Cities; Can It Be Improved?" I described somewhat at length a process devised by Mr. B. F. McIntyre of New York by which 80 per cent. of the water is abstracted from milk by freezing it, when in moderate agitation. The water, as ice, is taken from the milk in comparatively stainless crystals, almost without loss of solid product. It has been shown that the expense of condensation is very much less than by evaporation in vacuo, and that the resultant product is of much greater value. A considerable series of experiments was undertaken during the summer, under the supervision of Prof. W. T. Sedgewick of the Institute of Technology, in order to ascertain the effect of refrigeration on the bacteria ever present in milk.

It was found, although the resultant was not perfectly sterile, that the bacteria were in large measure destroyed, and that the concentrate put up in glass jars, such as are commonly used in the distribution of milk, has a keeping quality of weeks rather than days. Encouraged by these results, Mr. Edward Burnett of Boston, well known for his practical studies in furnishing a better milk-supply, has established a plant² of sufficient capacity to demonstrate the commercial advantages of the process. It is believed that the process offers a practical solution of the difficult and expensive problem of milk distribution in cities; that the family supply will be furnished in a concentrate one-fifth the bulk of ordinary milk, and that distribution of it from house to house made once a week will be ample for practical purposes. By this process the fat globules are uninjured, and, as a result the cream is unimpaired for table use. Pathologic bacteria are destroyed by the process, and the milk-supply will be rendered safe for use.

The economic advantages are obvious. In the first place the milk will be furnished the consumer at a material reduction in cost, and the waste in its daily use will be very greatly lessened. A far more satisfactory product in every respect will be furnished, and with a little care the pantry will be in constant supply. Mr. McIntyre is by no means satisfied with furnishing a product which contains even so little as 7 per cent. of water, and he looks forward to the practical demonstration of furnishing milk in a solid form, with keeping qualities equal to that of butter or cheese. I have in my possession a sample of solid milk prepared by him, by this process, now some months old. I make this brief report of progress, since the milk-supply of the country is of the first importance to every individual, and we indulge the hope that the work thus begun will prove so satisfactory that it will revolutionize the distribution of the milk-supply of the world.

ACCORDING to the statements made by members of the crew of the *Sequoia*, which recently arrived at San Francisco, a large number of persons on the Clipperton Islands are afflicted with scurvy and already five deaths have been reported. It is said that this was the first vessel which had visited the port for a period of four months.

*Presented to the Section on Physiology and Dietetics, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

¹Journal, Dec. 10, 1898, p. 1386.

²Cold Process Co. of Contocook, N. H.

NON-MALIGNANT STRICTURES OF RECTUM.

THEIR SURGICAL TREATMENT.

BY JOSEPH B. BACON.

CHICAGO.

It is not the purpose of this paper to enter into the etiology or pathology of strictures, but simply to compare the different operative procedures of the past and show why the methods failed to give permanent results, and to again describe two methods of operating for rectal strictures, devised by me and published some years ago. The time is now sufficiently long since the cases were operated on to determine whether the results are permanent or not.

Some years ago, when I began teaching diseases of the rectum in the Post-Graduate Medical School, I had a large number of stricture cases sent to me. Among these cases were strictures located at all parts of the rectum, from the upper part of the anal canal to the upper rectum; some were circular bands of scar tissue, others tubular masses of cicatricial tissue. None of them were called rectal strictures unless the scar tissue involved all the layers of the rectal walls, and in the case of many of them, located at the point where the levator ani muscles encircle and embrace the rectum, the scar tissue extended far beyond the rectal walls. I was at a loss to know what to do with some of these cases where they gave a history of having undergone one or more surgical operations by prominent surgeons, with but temporary relief. Most of them gave a history of having used rectal bougies persistently for months, or years. At first the bougies had been used by the surgeon; finally the patient was instructed how to use the instrument. Some of them had worn a rectal bougie every night while in bed for months, but only got temporary relief of their constipation, but not even temporary relief from tenesmus and mucopurulent bloody discharges resulting from the ulceration at and above the seat of stricture. Gradual dilatation by bougies is a very old method, dating back as far as we have a history of surgery; but there is no authenticated record of its ever having been a means of cure in a true cicatricial stricture, while it has a record of producing an enormous death-rate from perforating the bowel or increasing the ulcerations and prolonging the septic absorption until the patient succumbs to amyloid visceral changes. We have every reason to believe that if the unpublished cases of accidents from rectal bougies were published, the results would be so appalling that the bougie treatment would be justly banished for all time, and its use classed as malpractice. The reason gradual dilatation fails to permanently relieve is that while there is for a time absorption of the scar tissue at the surface contact of the bougie or the inner surface of the ring, at the same time the peripheral surface of the scar tissue is excessively irritated and if the peripheral irritation and divulsion is long continued the contiguous fibrous tissue becomes hypertrophied, later to contract, and thus new scar tissue is added from time to time from the periphery.

Divulsion or forced dilatation of rectal strictures, with or without anesthesia, although a common practice of years gone by, produced such an alarming death-rate with no permanent authenticated results that it seems unnecessary to speak of the method at this age of common-sense and advanced surgical pathology. Yet several of my cases gave a history of having been treated by this method and suffered for weeks with pelvic cellulitis and sepsis; others suffered for months with pelvic or general peritonitis, and their history gave evi-

dence that they had very narrow escapes from death, while none of them was permanently relieved from the constriction. Any cylinder or ring that is overdilated always ruptures first at the periphery; thus forced divulsion tears the periphery first, then the intervening tissue admits pathogenic germs, which are always present in the diseased rectum, direct into the perirectal connective tissue, or into the peritoneal cavity, if stricture is in upper or middle part of rectum. This method of treatment is never justifiable under any circumstances, except when the stricture is confined to a circular scar of the mucous membrane. In these cases, if the ring of cicatricial tissue is broken, a bridge of mucous tissue will sometimes form between the severed ends and thus prevent the re-formation of a stricture.

Proctotomy for the relief of stricture has been practiced by surgeons since very remote times, probably dating almost as far back as the use of the bougie. It has been described and classified under the terms of internal and complete proctotomy. Internal proctotomy consisted in making one or more incisions from within the rectum through the stricture. These incisions give but temporary relief, and the absurdity of making a wound in a septic field, with no chance for providing free drainage, has been abundantly illustrated by the enormous death-rate even in the reported cases. Except as a rare procedure for extreme emergency, where otherwise death from obstruction is imminent, this operation should be relegated to the archives of ancient history to amuse the relic hunter of prehistoric jokes. In complete proctotomy the incision made through the stricture and all the tissues including the anal canal, the sphincter muscles, and everything back to the sacrum and coccyx, giving a free drainage, and the relief from obstruction is temporarily complete. The free, open drainage makes the operation comparatively free from danger. But the wound gradually heals by granulation, and eventually this extra scar tissue is added to the previous stricture tissue, and the constriction is worse than before any operation was performed. The exceptions to this are very rare indeed. But worst of all is the almost universal fecal incontinence following this operation. Within the last few months a man brought his wife to me to see if anything could be done for her incontinence, following a complete proctotomy for the relief of a rectal stricture. The case was one of the saddest possible, the husband stating that he should get a divorce if she could not be cured. The tubular stricture and the newly-formed scar tissue, with atrophy of the sphincters, precluded any possible operative procedure that would give fecal continence.

After aseptic surgery became a fact, the surgeons were very greatly encouraged over the possibility of resecting the stricture tissue and reuniting the gut by end-to-end anastomosis, but this fond hope was blasted after the statistics of a few years' work were published. The deaths from peritonitis, from one or more or even all the sutures giving way from the tension, from peristalsis of the gut or more often by the tension caused from the gut sufficiently to draw it well down in the lower pelvis, gave a discouraging mortality. The few cases that escaped death, with rare exceptions, found after one or two years that a stricture had re-formed at the seat of anastomosis. Then we realized that the brilliant results from intestinal anastomosis of the tract above the pelvic brim could not be attained within the pelvis. Anatomical reasons make it impossible. The rectal walls contain an enormous amount of fibrous tissue, far more indeed than any other part of the intestinal tract. Be-

sides this, the rectum is buried in a bed of fibrous connective tissue, and its fibrous tissue is intimately connected with the dense fibrous fasciæ of the pelvis. What happens after end-to-end anastomosis here? First, a circular scar is left at point of union. This scar is constantly irritated by peristalsis forcing formed fecal matter through it. The old pathologic law holds good: that fibrous tissue if continuously irritated becomes hypertrophied, and then contracts. Thus the circular fibrous tissue begins the process, and the contiguous fibrous tissue takes on the same process at the point of irritation. The pathogenic process begins and continues to add more contracting tissue to the periphery. This latter contracts and every month more tissue is added, eventually to re-form a true stricture. I doubt if there are exceptions to this rule. If there are cases, they have been kept studiously away from any of the clinical exhibitions of the societies in Chicago.

More recently, Howard Kelly and others have amputated the rectum just above the stricture, inverted the cut end of the rectum by suturing, and anastomosed the proximal end of the sigmoid into the rectum below the stricture. The same reason that caused the failure of end-to-end anastomosis of the rectum will operate to make the lateral anastomosis fail. Time after time I have made a lateral anastomosis of the sigmoid into the rectum in experimental work upon dogs and in every case, after a few weeks, the anastomosis opening would be so contracted that I could not insert my finger through it. I doubt very much if any of these cases would be relieved for more than one year after lateral anastomosis.

Naturally, after the surgical operations for the relief from rectal strictures had failed to give any encouragement to the surgeons, they began falling back upon the last resort for saving life and professional reputation, and inguinal colotomy was recommended as being sure of relief from obstruction and from the danger of perforation at the seat of ulceration above the stricture.

With these discouraging reports from the literature, I determined to devise some method of curing rectal strictures that would not increase the dangers of the old operations and at the same time would leave the sphincter muscles in their normal conditions, so that I could assure my patients that they could be left with perfect continence. The former methods failed: 1, because of new fibrous tissue forming and reuniting the severed stricture bands; 2, because of incontinence; 3, because of the high death-rate; 4, because of contraction of the lateral anastomosis opening.

I devised and advocated two operations: one for strictures located at or above the junction of the levator ani muscles of the rectum, and one for that class of strictures located below the levator ani muscles. For a stricture of the first class a laparotomy is made in the median line from pubis to umbilicus with the patient in the Trendelenburg posture. The sigmoid flexure is now seized and enough of it selected to bend down over the stricture and anastomose the sigmoid with the rectum below the stricture, either by sutures or a small Murphy button. In doing this two peritoneal surfaces are brought in apposition from the point of anastomosis. The abdomen is now closed as in an ordinary laparotomy and the drainage-tube remains from forty-eight to seventy-two hours, according to conditions. The button will come away in about a week, leaving a small fistulous opening between the sigmoid and rectum below the stricture. We have now only to clamp the whole or part of the septum from time to time until the stricture is

severed. The severed ends can never unite, because a plastic operation is completed, with the sigmoid uniting the severed ends of the stricture. To do this I use a clamp forceps with a lock similar to an obstetric forceps, inserting one blade through the anus and into the sigmoid through the buttonhole and the other blade through the stricture along the rectal wall. The forceps are now locked and a rubber ring drawn over the handle so as to clamp the septum gradually for two days; then the handles are firmly compressed as an ordinary catch forceps and left to produce pressure atrophy of the septum until they completely sever it.

For that class of strictures located below the levator ani muscles, I produce a mucous fistula posterior to the stricture, so that when finally at a second operation the stricture is severed, this mucous tract lies between the severed ends of the stricture tissue, and prevents scar tissue forming to reunite them and re-form the stricture. This is done by taking a blunt-pointed aneurysmal needle threaded with heavy braided silk. The needle is pressed within the anal canal just above the internal sphincter muscle: the point of the needle is forced through the rectal wall back to the coccyx and then carried up posterior to all stricture tissue above the stricture, when the needle is again forced into the rectum. With a blunt hook passed through the stricture, the thread is now caught at the eye of the needle and drawn down. The needle is withdrawn and the suture loosely tied so as to form a seton surrounding the stricture tissue. The heavy thread gives free drainage, and none of the cases have had any symptoms of infection. This thread is left in place for three months, during which time the bowel is washed twice daily with boracic acid solution.

If the stricture is very tight I make a superficial incision on its anterior surface, just cutting the inner circle of scar and avoiding cutting the rectal wall, as a temporary relief from constipation. After three months the patient is put under anesthesia, the sutures removed and a grooved director passed along the fistulous tract. I now take a Paquelin cautery and sever the stricture down on the probe. I have performed this operation with perfect success in a number of cases. One case never returned for the second or complete operation; fortunately after three years she came to my gynecologic clinic at the Northwestern University a few weeks ago. I examined the rectum and had several of my students confirm the fact that there was no stricture. The patient said she left the suture in place until it cut its way out after many months. Some of these cases have been lost track of and may not have been cured. One case failed of a complete cure I know, as she comes to my clinic when I desire it. I am now satisfied why she was not permanently relieved. The suture was passed too near the stricture both below and above, and all the hypertrophied tissue was not included. Both these operations have been severely criticised, but I shall keep improving them until some one gives us some method that is better.

WE ARE informed that Professor Arons has been offered the chair of physics, left vacant by Roentgen's departure. The *Gazette Medicale de Paris* remarks that in this the Bavarian University is faithful to its traditions in welcoming scientists persecuted for their political opinions. In 1848 the chair of pathology was offered to the young Virchow, persecuted by the Prussian Government.

Therapeutics.

Phenocoll in Malaria.

In the *American Gynecological and Obstetrical Journal*, Dr. Cesare Mondini of Brooklyn publishes a note relative to the value of phenocoll in malaria. The physiologic and therapeutic powers of the drug have been studied by Professors Mosso, Albertini, Cervello and Golgi. Upon the basis founded by these investigators Dr. Mondini has tried phenocoll in all the febrile conditions which he had diagnosed as of malarial origin. The salt which he employed in all cases was the hydrochlorate. The doses prescribed varied from 1½ grams (nearly 24 grains) to 2 grams (about 30 grains) daily for children. The results were brilliant. Sometimes the amelioration was temporary and in some cases the effects were negative. He had, however, made use of phenocoll in over a hundred cases and met with but few failures. These were due less to the action of the drug, he thinks, than to the manner in which it was used. Dr. Mondini appended brief memoranda of several typical cases treated by phenocoll, one in particular being that of a child, 5 years of age, who had suffered from malarial intoxication for a year and who had an enormous splenic tumor. He was rebellious to quinin, but was cured by phenocoll.—*Med. Bull.*

Diuretics.

Martz, of the Faculty of Medicine in Lyons, gives a number of prescriptions for diuretic purposes. Pills composed as follows:

- Extract of convallaria.
 - Powdered convallaria, aa gr. i
 - Make in one pill, and give a pill night and morning.
 - Or a syrup made of:
 - Extract of convallaria ʒiv
 - Syrup of bitter orange ʒvi
 - A teaspoonful night and morning.
 - In other cases we may use:
 - R. Tinct. of squill m. lxxv
 - Syrup of bitter orange ʒi
 - Distilled water ʒiii
 - One teaspoonful every few hours.
 - Or
 - R. Extract of squill.
 - Powdered squill, aa gr. i
 - Make into one pill and give one night and morning.
 - Or
 - R. Theobromin gr. vii
 - Place in one cachet and give four a day.
 - Or
 - R. Caffein gr. xv
 - Benzoate of sodium gr. xxx
 - Syrup of bitter orange ʒi
 - Water ʒiv
- This may all be taken in twenty-four hours in divided doses.
- Or again:
 - Powdered digitalis
 - Powdered squill
 - Powdered scammony, aa gr. i
 - Make into one pill, and give one such night and morning.
 - Or,
 - Carbonate of lithium gr. vii
 - Leucnade with carbonated water Oi
- This to be drunk each day.
- Or, by the bowl:
 - Nitrate of potassium gr. xxx
 - Oxytel of squill ʒvi
 - Milk ʒiii
 - This to be given by the bowl.—*La France Medicale.*

Treatment of Anal Fissure.

M. Jules, in the *Gaz. de Gynecol.*, recommends the following treatment: The anus being partly everted and the fissure discovered, a small tampon of absorbent cotton saturated with a 1 per cent. solution of cocain hydrochlorate is applied. At the end of five minutes local anesthesia is obtained, and the fissure can be touched with pure ichthyol. This procedure is renewed on the following days. After the fourth or fifth application,

the tampon of cocain is introduced as far as the internal sphincter, and at the end of five minutes it is possible to make a slight dilatation of the anus with Nélaton's dilator. In this way the fissure is distinctly exposed to view and can be thoroughly touched with ichthyol.

Serofulosis.

In serofulous affections of the glands, skin and mucous membranes Saint Philippe finds the iodid of arsenic of great value. He prescribes it in the following form:

- R. Iodid of arsenic gr. vii
 - Distilled water ʒiiss
- Dissolve and give 5, 10, 20, or 30 drops of this solution a day, according to the age of the child.

As the remedy is an active one, it is wise, in his opinion, to commence with a small dose—for example, only a drop may be given morning and night, and this dose gradually increased.—*Therapeutic Gazette.*

Lactic Acid in Vaginitis.

According to the *Jour. of Medicine and Science*, Ilkewitch favors the use of lactic acid in the treatment of vaginitis and endometritis, basing its value upon the fact that the normal acidity and consequent germicidal power of normal vaginal secretion is due to lactic acid. He applies it to cervical erosions and to the diseased uterine mucosa in strength varying from 50 to 100 per cent., and in other cases in irrigating solutions of 3 per cent.

Local Application in Acute Rheumatism.

- R. Acidi salicylici
- Olei terbinthinae
- Lanolin, aa ʒiv
- Adipis ʒii

M. Sig. Apply to joints and cover with non-absorbent cotton, gutta-percha tissue, and over all a bandage. After the superficial epidermis has been destroyed, the oil of turpentine should be left out of the formula.

Treatment of Ozena With Citric Acid.

Hann (*Munch. Med. Woch.; Med. News*) recommends the application of citric acid in ozena, as the best means of taking away the terrible odor, which not only disgusts all with whom the patient comes in contact, but also often destroys the appetite of the afflicted individual. Hence, the mere removal of the odor is often followed by a marked improvement in the patient's general condition. The citric acid, however, has also a slight beneficial effect on the nasal lesions. It can be used pure, or better, mixed in equal parts with sugar of milk. The nose is thoroughly cleansed in the morning and the powder is then blown into it, and the insufflation is repeated at noon and at night. The deodorizing effects continue some days after the discontinuance of the powder, and as the citric acid has no harmful action, it may be used as often as necessary.

Treatment of Eczema by Ointments Containing Sugar.

Hodara of Constantinople uses for cases of moist eczema, impetigo ethyina, subnasal sycosis, and other skin diseases of vesicular or pustular nature, an ointment of zinc oxid and sulphur containing sugar, the desiccative and keratoplastic properties of which he highly values.

- R. Sacchari pulv
- Zinci oxid
- Lanolin
- Vasolin
- Sulphuris sublim, aa ʒxxx
- Glycerini, aa ʒx

M. Ft. unguentum. Sig. External use. For subnasal sycosis he advises continuous application of the ointment to affected parts of the upper lip, and in addition repeated swabbing of the nasal mucous membrane with a solution of silver nitrate, at first 1 per cent. gradually increased to 4 per cent. As improvement advances, the ointment may be used but once a day, but swabbing should be continued for a time after the

ure is complete, to avoid a relapse. Hodara has thus effected cures without epilation.

SEBORRHEAL ECZEMA.

For seborrheal eczema of a psoriasis type he prescribes as follows:

B. Sacchari pulv.	5xx
Chrysolobini	5i-ii
Glycerini	
Sulphuris sublim, aa.	5x
Lanolini	
Vasolini, aa.	5xxx
M. Ft. unguentum. Sig. External use.	

Dyspepsia.

B. Sodii bicarbonatis.	5i
Tinct. nucis vomice.	5i
Infusi gentiane, q. s. ad.	5viii
M. Sig. Tablespoonful before meals, in dyspepsia with deficient secretion of gastric juice.	
B. Acidi hydrochlorici diluti.	5iv
Tinct. gentiana comp.	5iiss
M. Sig. Teaspoonful in water after meals, in atonic dyspepsia with deficient secretion of gastric juice:	
B. Acidi hydrochlorici diluti.	5vi
Tinct. capsici.	5iv
Tinct. nucis vomice.	5iii
Tinct. quassie, q. s. ad.	5iv
M. Sig. Teaspoonful in water after meals for atonic dyspepsia of alcohol drinkers.	
B. Acidi hydrocyanici diluti.	gtt. xl
Tinct. belladonnae.	5iii
Bismuthi subnitrat.	5vi
Aque, q. s. ad.	5iii
M. Sig. Shake well. Teaspoonful an hour before meals or painful dyspepsia with excessive gastric secretion.	

Treatment of Gastralgia, Gastritis and Gastrodynia.

Dr. Thos. Stretch Dowse, in the "Pocket Therapist" says that these conditions are sometimes associated with dyspepsia. They may be peptic (rarely), they may be congestive, associated with gastric catarrh, or they may be neurotic (neuralgia). It is sometimes at first somewhat difficult to diagnose these states from derangements of the gall-duct, but the diagnosis is easily cleared up by the absence of bile in the feces. Gastritis of an acute character rarely exists, unless it is the result of some direct irritant. Congestive gastritis, leading to catarrh, vomiting and ulceration, is much more common, and must be treated more or less as a dyspepsia. It is here that we have a gastrodynia. Gastralgia, in the writer's experience, is a pure neurose and requires neurotic treatment. The pain comes on in paroxysms, and may be relieved by opium, quinin, atropin, chloroform, ether, peppermint, cocain, menthol, cannabis indica, and the bromids. During the paroxysms of pain this draught is very effective:

B. Chloralis	gr. xv
Liq. atropia.	m. ii
Ammon bromid.	5ss
Extracti cannabis indicae.	gr. ʒi
Aque, ad.	5ii
M. Ft. Haust. Sig. To be repeated in one hour if necessary.	

Faradization and massage are very useful, especially if dilatation exists. Lavage of the stomach is often of very great value in these cases.

Convulsions in Children.

When a period of intensely hot weather occurs late in the season and severe intestinal diseases develop in children as a consequence, it has been noted that their ailments are more frequently complicated by convulsions than under similar circumstances earlier in the summer. The wear and tear of life during the difficult heated months has apparently augmented the almost normal instability of the infantile nervous system, and as a consequence convulsive explosions of nerve

force are to be expected. An interesting discussion of convulsions in children at the recent meeting of the British Medical Association brings out the present English views as to the etiology and treatment of the affection, and it seems a timely topic for the attention of all general practitioners.

Drs. Gossage and Coutts, to whom the subject was referred for special consideration and introduction to the Section, suggested in their conclusions the following points for discussion: First, the frequency of convulsions in children has been vastly overrated; second, the immediate danger from future neurotic manifestations has been underestimated; third, the predisposing causes are of much more importance than the exciting causes; the slighter exciting causes will not produce convulsions except in predisposed children. There was very little disagreement with these propositions. The overestimation of the danger of convulsions, it was pointed out, came from the fact that in the terminal stages of many diseases of infancy convulsive movements occur, and that the death was then, unwar- rantly, of course, set down to convulsions. As to predisposition, nervous heredity, etc., statistics were quoted to show that in over one-half of the cases in which patients reached adult life after having had convulsions in childhood they suffered from some variety of neuroses. These were not due so much to the malnutrition of the nervous system during infancy or to damage during the convulsive stage as to congenital faulty development. It is particularly the children of nervous, gouty, rheumatic, or diabetic parents that are liable to fits, and it is in patients in whom such a family diathesis is known to exist that any extreme of reflex irritation must be repressed or it will result in a nervous explosion. As to treatment the discussion did not bring out anything striking, except, perhaps, by negation of the necessity for active measures. The referents said:

All that is necessary during an actual attack of convulsions in most cases is to loosen the clothing about the neck, chest, and abdomen, and lay the child on its back with the head slightly raised until it recovers from the fit and the subsequent drowsiness. The placing of the child in a hot bath, as is such a common practice, probably does no harm, and if the child be in feeble health it may be advantageous to use a mustard bath, which has decided stimulating properties.

Very few American physicians would be content to be as inactive as our English friends suggest with anxious parents and relatives about. For the very severe convulsions or prolonged unconsciousness after a fit inhalations of chloroform even to deep narcosis were suggested. Small doses of the bromids were recommended for some days after the attack. The recurrence of an attack suggested the continuance of the bromids for weeks at least, any harm that may be supposed to attend their use being more than counterbalanced by their benefit if they prevented the return of the convulsions.—*Medical News.*

Chlorosis.

Regarding the treatment of this disease, we quote from "Progressive Medicine," Vol. ii, June, 1899: "Brosin reports upon the treatment of cases of chlorosis with hot baths. The author treated some fifty cases, using baths of 32° R., with cool applications about the head during the fifteen to thirty minutes which were spent in the bath. After the bath a rapid cool douche was administered, and thorough friction was then employed, the patient finally resting one hour in the recumbent posture. Three baths a week during four to six weeks constituted the treatment. The results were excellent, the patients feeling extraordinary well after the baths. Many of the symptoms of the disease were quickly controlled by this treatment, and the general effect upon the disease was satisfactory. De Dominicis decries the venesections that have been recommended in recent years, which he believes act only in occasional instances by suggestion. He himself recommends transfusion of blood."

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Journal of the Medical Sciences (Philadelphia), September.

- 1.—*Operations in Gastric Ulcer. Leonard A. Bidwell.
- 2.—*Epithelioma as a Sequel of Psoriasis and the Probability of its Arsenical Origin. M. B. Hartzell.
- 3.—*Case of Cystic Degeneration of Kidneys, with General Dermatitis Exfoliative. G. Parker.
- 4.—*Purulent Encephalitis and Cerebral Abscess in New-Born Due to Infection Through the Umbilicus. Guy Hinsdale.
- 5.—*Congenital Idiopathic Dilatation of the Colon. J. P. Crozer Griffith.
- 6.—*Toxicity of the Urine. F. Forchheimer and R. W. Stewart.
- 7.—*The Disease of Convulsive Tic (Gilles De La Tourette's Disease). Bernard Gettinger.
- 8.—*Aneurysm of Coronary Artery; Report of Two Cases. Joseph A. Capps.
- 9.—*Critical Summary of Recent Literature Concerning the Mosquito as an Agent in Transmission of Malaria. Thomas B. Fletcher.
- 10.—*President's Address, American Neurological Association. James Hendrie Lloyd.
- 11.—*Edema of Paralyzed Limbs in Hemiplegia, with Report of an Unusual Case. Charles Lewis Allen.
- 12.—*Tumor of Oblongata Presenting Ataxia and Astereognosis as most Prominent Early Symptoms. F. X. Dercum.
- 13.—*Interesting Optical Phenomena—Transfer of Tactile to Visual Sensation. Frank F. Fry.
- 14.—*Notes on Arrangement and Function of Cell Groups in Sacral Region of the Spinal Cord. B. Onuf.

Medical Dial (Minneapolis), August.

- 13.—*Surgical Treatment of the Urethra in Old Men. D. R. Greenlee.
- 16.—*Certain Landmarks in Prognosis of Modern Medicine. Franklin Staples.

Canadian Journal of Medicine and Surgery (Toronto), September.

- 17.—*Present Attitude of Medical Profession toward Illegal Practitioners. Thomas J. Hillis.
- 18.—*Plea of Insanity in Medical Jurisprudence. James Russell.
- 19.—*Some Opinions on "No Evidence in America of Pre-Columbian Leprosy." Albert S. Ashmead.

Buffalo Medical Journal, September.

- 20.—*Importance of Early Diagnosis and Surgical Intervention in Fractures of Skull. Marshall Clinch.
- 21.—*Neurasthenia from Standpoint of General Practitioner. C. W. Cutler.
- 22.—*Experience, Judgment and Luck. Nelson W. Wilson.
- 23.—*What Shall be the Minimum Standard for Admission to Study and Practice of Medicine. William Warren Potter.
- 24.—*Oculist vs. Optician. A. Protot. John J. Finerty.
- 25.—*Note on Arcoid. J. C. Clemesha.

Medical Herald (St. Joseph, Mo.), August.

- 26.—*Report of Operative Cases. B. L. Eastman.
- 27.—*Leucorrhœa and its Treatment. Robert C. Kenner.
- 28.—*Modern Treatment of Fractures. Edward A. Tracy.
- 29.—*Etiology of Phthisis—Summary of Scientific Points Involved in Churchill Turety. R. W. Gardner.
- 30.—*Treatment of Appendicitis. T. K. Holmes.
- 31.—*Anencephalus. George Elliott.
- 32.—*Strange Case of Exfoliation. L. H. Marks.

Hot Springs Medical Journal (Ark.), August.

- 33.—*Report of Unique Case of Intestinal Obstruction. James T. Jelks.

American Journal of Surgery and Gynecology (St. Louis, Mo.), August.

- 34.—*Surgery and Insanity. Henry Waldo Coe.
- 35.—*Gynecologist in Relation to the Insane. Ernest Hall.
- 36.—*Vaginal Section with Report of Cases. A. Miles Taylor.
- 37.—*Vaginal Hysterectomy—Accidents and Complications. Walter Lindley.
- 38.—*The Sigmoid—Some of its Diseases. Wellington Burke.
- 39.—*Abdominal Pain. C. P. Thomas.
- 40.—*An Operation for Cancer of Rectum Which did not Cure. C. E. Case.
- 41.—*Some Cases Seen at Clinic of Professor A. Martin, Greifswald, Germany. O. Beverly Campbell.
- 42.—*Cases of Carcinoma Uteri in Advanced Pregnancy. Henry J. Kreutzmann.
- 43.—*Surgical Complications of Pneumonia. Leonard Freeman.

Post Graduate (N. Y.), August.

- 44.—*Sterility in Women; Some of the Causes, etc. J. R. Nilsen.
- 45.—*Hydranmios. John O. Polak.

Annals of Gynecology and Pediatrics (Boston), August.

- 46.—*Colloid Carcinoma of Ovary. Charles Greene Cumston.
- 47.—*Indications for Cesarean Section as Compared with those for Symphysiotomy, Craniotomy and Premature Induction of Labor. Fancourt Barnes.

Medical and Surgical Bulletin (Nashville, Tenn.), August.

- 48.—*Sphylitic Stricture of Rectum; Two Cases with Operations. A. B. Cooke.
- 49.—*Treatment of Chronic Tubercular Pulmonary Consumption. Q. C. Smith.

Medical Age (Detroit, Mich.), August 25.

- 50.—*Is Leprosy Curable? Roger S. Chew.
- 51.—*Simulated Disease of Mind and Nervous System. Samuel Ball.

Columbus Medical Journal (Ohio), August 21.

- 52.—*How the General Practitioner Can Aid in Advancement of Psychiatry. E. G. Carpenter.

Northwestern Lancet (St. Paul, Minn.), August 15.

- 53.—*Determination of Sex. F. A. Dunsmoor.
- 54.—*Advance of Medical Education in United States. Franklin Staples.
- 55.—*Dist in Typhoid Fever. E. J. Abbott.
- 56.—*Bronchial Pneumonia of Catarrhal Pneumonia. Emory H. Bagley.
- 57.—*Pediatrics (N. Y.), August 15.
- 57.—*Malaria in Children. Dr. Moncorvo.
- 58.—*Ankylosis of Hip-Joint. Henry Ling Taylor.
- 59.—*Aneurysm of Aorta in Child. Bertram Rogers.
- 60.—*Infant Feeding. Hugh N. Leavell.

Interstate Medical Journal (St. Louis, Mo.), August.

- 61.—*Cholesterin—Concentration of Poisonous Products of Albuminous Decomposition as Factor in Etiology of Summer Diarrhea in Infants. W. L. Brown.
- 62.—*Diagnosis and Treatment of Gall-Stones. Bernard S. Simpson.
- 63.—*Diagnosis of Fevers. D. W. Prentiss.
- 64.—*Case of Esophagismus of Gouty Origin. Heinrich Stern.
- 65.—*Interesting Case of Hereditary Syphilitic Dactylitis. Lewis C. Boshier.
- 66.—*Relations of Coroner to Undertaker. William H. Taylor.
- 67.—*Summer Diarrhea in Infancy. Jesse Ewell.
- 68.—*Facial Paralysis. W. S. Beazley.

Physician and Surgeon (Detroit and Ann Arbor, Mich.), August.

- 69.—*Diagnosis of Septic Diseases of the Brain and its Membrane from Standpoint of Oculist and Aurist. Eugene Smith.
- 70.—*Report of Case of Marked Disturbance of Digestive Tract Caused by Underdeveloped Uterus. James M. Martin.
- 71.—*Study of Some Conditions that Lead to Fibroid Changes. Willis S. Anderson.
- 72.—*Case of Appendicitis with Unusual Course. H. M. Joy.
- 73.—*Primary Syphilis. Ralph H. Spencer.
- 74.—*Treatment of Diseases of Ear. W. F. Strangways.
- 75.—*Cause and Prevention of Overworking in the Profession. Geo. H. Sherman.
- 76.—*Epidemic at Siboney. C. T. Newkirk.
- 77.—*Ureteral Fistula. Ernest Tappes.
- 78.—*Purpura Hemorrhagica. T. M. Williamson.
- 79.—*Anatomy and Physiology of Erector Spine Muscle, and its Bearings on Spinal Curvatures and their Treatment. E. K. Bacon.
- 80.—*Matrimony. N. E. Aronstam.

Medical Monograph (Tupelo, Kan.), August.

- 81.—*Treatment of Insanity in General Practice. L. L. Uhlis.
- 82.—*Treatment of Injuries and Drug Addictions. M. F. Sexton.
- 83.—*Neurasthenia, its Diagnosis and Treatment. John Puntton.
- 84.—*Some Observations in Recent Epidemic of Cerebrospinal Meningitis. J. W. Porter.
- 85.—*Injuries to the Head, Including Fractures of Skull, with Report of Several Cases. C. F. Leslie.
- 86.—*Insanity as Defense in Criminal Cases. B. D. Eastman.

Medical News (N. Y.), September 2 and 9.

- 87.—*Radical Cure of Hemipia. Wm. B. Coley.
- 88.—*Cerebrospinal Meningitis. Joseph W. Irwin.
- 89.—*Treatment of Tuberculosis. Lawrence F. Flick.
- 90.—*Empyema From Surgical Standpoint. John C. Munro.
- 91.—*Case of Sarcoma of Tonsil. Three Removals, Recurrence after Each.
- 92.—*Death from Metastases in Mesentery and Bowel. J. Morrison Ray.
- 93.—*The Specific Cause of Yellow Fever: A Reply to Dr. G. Sauerelli. Walter Reed and James Carroll.
- 94.—*Cardiophageal Gush and Click. R. G. Cartin.
- 95.—*The Hydratic Treatment of Pneumonia. Richard K. Macalester.
- 96.—*A New Method of Treating Complete Tear of the Rectovaginal Septum by Turning Down an Apron into the Rectum and by Buried Suture Through the Sphincter Muscle. Howard A. Kelly.

New York Medical Journal, September 9.

- 97.—*Fracture of the Lower End of the Radius. Carl Beck.
- 98.—*A Test Case for Taste. Nathan T. Beers.
- 99.—*Adenocarcinoma of the Nose. Report of a Case. James E. Newcomb.
- 100.—*Traumatic Neuropsychosis. Report of a Case. C. E. Ide.
- 101.—*Synechiotomy of the Stapes for Improving the Hearing in Chronic Suppurative Otitis Media Residua. Edward Bradford Dunch.
- 102.—*Bovine Tuberculosis in its Relation to Man. Edward Moore.
- 103.—*Dust in the Etiology of Tuberculosis. Max Girdensky.
- 104.—*A Case of Tetanus Treated with Carbolic Acid. D. Elsie Woods.

Medical Record, September 9.

- 105.—*Reflex Irritation, with Special Reference to Eye-Strain, a Factor in Nervous and Mental Diseases. C. A. Drew.
- 106.—*Scarlet Fever Reproduced by Inoculation; Some Important Points Deduced Therefrom. Joseph Williams Stickler.
- 107.—*On Ozone and its Generation by the Static Current for Therapeutic Use. J. Mount Bleyer.
- 108.—*Interstitial Pregnancy and Report of a Case. Chas. F. Smith.
- 109.—*Self-Inflicted Wounds in Both Eyes, Both Ears, Tongue and Larynx, Leading to Thrombosis of the Sinus Transversus. George Reuling.
- 110.—*Tetanus of Nineteen Days' Duration Successfully Treated with Antitoxin. William M. James.
- 111.—*A Case of Primary Renal Tuberculosis of Twenty Years' Standing. Jacob Frank.

Philadelphia Medical Journal, September 9.

- 112.—*Ninety-three Consecutive Abdominal Sections without a Death, with Clinical and Pathologic reports. Hunter Robb.

- 113.—"Dysphonia-Relief with the Use of the Galvanic Current. T. C. Christy.
- 114.—"The Colorado Climate as a Remedy for Phthisis. Alfred Mann.
- 115.—"A Novel Treatment of Certain Forms of Headache, Deafness, and of Tinnitus Aurium. E. Larue Vansant.
- 116.—"The Power of Suggestion. Arthur MacDonald.
- 117.—"Report of a Case of Malta Fever. Walter Cox.

Boston Medical and Surgical Journal, September 7.

- 118.—"The Effects of Training: A Study of the Harvard University Crew. Eugene A. Darling.
- 119.—"Two Cases of Injury of the Cord Resulting from Fracture of the Spine. John Jenks Thomas.
- 120.—"The Role of the Staphylococcus in Skin Diseases. Chas. J. White.
- 121.—"Multiple Ulcers of the Vulva and Vagina in Typhoid Fever. August J. Lartigau.

Maryland Medical Journal, September 9.

- 122.—"Shall we Operate in Every Case of Appendicitis? Virginia Harrison.

Cincinnati Lancet-Clinic, September 9.

- 123.—"Does the Practice of Medicine Pay? George J. Monroe.
- 124.—"Ophthalmic Memoranda. David DeBeck.

Medical Review, September 2 and 9.

- 125.—"Study of a Case of Feigned Eruption. Martin F. Engman and Sidney I. Schwab.
- 126.—"Ligation of the Dorsal Vein of the Penis for Functional Impotence. G. Wiley Broome.
- 127.—"A Case of Senile Hypertrophied Prostate with Marked Urinary Obstruction; Bottini Operation: Relief. Later, Herniotomy, Sepsis and Erysipelas. Death. Bransford Lewis.

AMERICAN.

1. **Operations in Gastric Ulcer.**—Noticing first the comparative newness of this line of surgery and its importance, Bidwell discusses the symptoms and physical signs of the condition of perforation of round ulcer of the stomach and insists on the importance of prompt operation. In view of the amount of shock, everything should be done to keep the patient's temperature up. A brandy enema may be required and occasionally the intravenous injection of saline solution. On account of the tenderness of the abdomen, vigorous antiseptic measures are contraindicated before anesthesia but after anesthesia has occurred, thorough scrubbing and cleansing can be done. The incision should be about 3 inches long, in the left semilunar line or in the middle above the umbilicus. There is usually much gas in the peritoneum and considerable purulent fluid if the ulcer has perforated anteriorly. When found the adhesions should be separated, the extravasated contents sponged away and the perforation be brought forward as far as possible. The ulcer should be invaginated and the adjacent part of the stomach wall coated over it by one or two rows of Halsted or Lembert sutures, inserted at a considerable distance from the ulcer so as to be in healthy tissue. The peritoneal cavity should then be thoroughly flushed with normal salt solution, and if the gastric contents have reached the lower part of the abdomen it will be necessary to make a counteropening over the pubes and in addition irrigate Douglas' sac. Special care must be taken to thoroughly irrigate the upper surface of the liver and the region of the spleen, to prevent subphrenic abscesses. Drainage-tubes are inserted and the wound closed in the ordinary way. If no extravasation is found but there is some injection of the peritoneum, with other marked signs of perforation, we should suspect the rupture of the ulcer in the posterior gastric wall. To reach this, after shutting off the general cavity with sponges, the gastrocolic omentum must be torn through, opening up the lesser cavity of the peritoneum. If here there are no signs of extravasation, we may assume that there is no perforation, or that adhesions have shut it off. If extravasation be present, the ulcer must be found and sutured as before described, and the lesser cavity be carefully irrigated, special care being taken to thoroughly cleanse the portions above and behind the liver. The operation must be as rapid as possible to minimize the shock. The patient should be fed by nutrient enemata and suppositories for the first three days, then cautiously by the mouth with predigested foods. The gauze drain and the suprapubic tube should be removed at the end of three days. The rubber tube at the end of the upper opening should remain a few days longer. When adhesions have formed prior to perforation, there may be communication with the colon, the pericardium or the small intestines or a localized abscess between the stomach and the under surface of the liver, or between the stomach and the anterior surface of the pancreas and duodenum. In either of these cases, it should be opened as high up as possible in the middle line and drained.

with very cautious irrigation to avoid breaking down adhesions. In some cases when there is no abdominal swelling, but evidence of abscess by dullness over the left lower costal region, it can best be opened by resection of the eight and ninth ribs in the axillary line, the pleura, of course, being opened, but the diaphragmatic portion sutured to the costal pleura before the diaphragm is divided. The author discusses the statistics of the operation for perforation and subphrenic abscess, its uses and prognosis. He concludes his paper with the following list of cases in which the operation should be done: 1. In all cases of perforation at the very earliest possible moment; also in subphrenic abscess. 2. In cases of hemorrhage *a*, when there is continual oozing of blood, especially if the stomach be dilated, and *b*, in cases of repeated severe hemorrhage. 3. In cases where there is severe pain and vomiting unaffected by treatment, and which is producing progressive emaciation. 4. In cases of dilatation of the stomach from contraction within or from adhesions outside the stomach. The operations to be performed are: In Class 1, laparotomy and suture of the ulcer; in Class 2, gastrotomy and suture of the ulcer, with a purse-string suture, combined with gastro-enterostomy; in Class 3, gastro-enterostomy, in order to give physiologic rest to the ulcer; and in Class 4, either gastro-enterostomy, or, if the pylorus be affected, pyloroplasty or pylorotomy.

2. **Epithelioma After Psoriasis.**—Hartzell reports a case of epithelioma occurring on the heel of a woman 35 years old after psoriasis of many years' standing, and discusses the literature of similar cases. He thinks the evidence presented thus far permits us to conclude that the arsenical treatment of psoriasis has a causal relation to epithelioma and calls attention to the importance of this subject in connection with recent theories of the pathogenesis of carcinoma in general.

3. **Cystic Degeneration of the Kidneys with Exfoliative Dermatitis.**—Parker describes a case of cystic kidney degeneration followed by general dermatitis exfoliativa. The combination of these two affections, he thinks, is rather unique. He discusses the theory of cystic kidney degeneration and thinks it impossible to apply any of the retention theories to their formation.

4. **Congenital Dilatation of the Colon.**—Griffith uses this term to designate an actual dilatation present at birth and a congenital tendency to early dilatation, the latter being probably much more common. He reports in detail a case with autopsy and gives a synopsis of others in the literature which may fall under this head. The prognosis of these cases is unfavorable. Eighteen of the twenty-four enumerated terminated fatally, only three of the patients reached adult life. In all cases, there is great dilatation of the large intestines with thickening, the small intestines being normal. The treatment consists in attention to the general health, carefully performed massage, electricity, and emptying of the bowels by purgatives or enemata, which, while weakening, are useful here; and in case it is not relieved, early operation.

5. **Toxicity of Urine.**—Forchheimer and Stewart report experiments as to the toxicity of urine obtained from a number of patients, many of them suffering from various morbid conditions. They used it fresh, or fresh and filtered, boiled, and with boracic acid added. Examining their table, they point to the fact that those two methods which excluded bacterial activity absolutely after the urine had passed are followed by comparatively no mortality. In fresh urine immediately used there was only one death out of 14; in filtered urine, no deaths even after the urine had been kept as long as four days; in urine with boracic acid used before the lapse of 24 hours, a mortality of 39 per cent.; after 24 hours, a mortality of 43 per cent.; in boiled urine, kept for longer than 24 hours, a mortality of 59 per cent., and in fresh urine kept for longer than twenty-four hours a mortality of 66 per cent. They conclude that most of the toxicity of urine is due to formation of substances the result of the action of bacteria on some body or bodies in the urine and that they are not justified in stating that there is no other toxicity than that due to bacteria, but they are justified in claiming that in all those investigations that have been made where this activity has been overlooked, the results must be regarded as inconclusive.

6. **Edema in Hemiplegia.**—Allen reports a case of severe edema of the arm and, to some extent, the leg of the paralyzed

side, coming on some weeks after the attack. The swelling was excessive, especially in the arm. The patient died of exhaustion and diarrhea some months after the beginning of the attack and the autopsy showed no pathologic condition to account for the edema. In searching the literature, the author finds but three cases entirely comparable to his own.

12. Tumor of the Oblongata.—Dercum reports a case which was diagnosed in life as tumor of the medulla. The most striking feature of the case was the symptom of astereognosis which had never been previously observed from tumors in this situation. The patient could not tell the position of the right arm. There was distinct loss of muscular sense, diminution of pain sense and disorders of the localization of tactile impressions. Only just before death were there any symptoms referred to the left arm and then they were very slight. The autopsy showed a large irregular mass spreading from the occipital bone to the right side of the junction of the pons and medulla, forming a slight depression in the right lobe of the cerebellum, and markedly distorting the medulla, the fibers of which for a short distance above and below showed by Marchi's staining method, degeneration of the pyramidal tracts, posterior and lateral columns and right direct cerebellar tract.

15. Surgical Treatment of the Urethra in Old Age.—Greenlee reports briefly the results of treatment of difficult micturition in old men, associated with prostatic hypertrophy and stricture. His practice is to use dilatation by graded sounds, assuming that in the majority of cases at least there was an original contraction of the urethral cavity. The results were very generally good. He reports also a case in which there were similar symptoms with extensive hypertrophy of right side of the prostate gland and the corresponding testicle was normal, while that of the left side had been removed in early life. Removal of the remaining organ caused complete cure.

16. Certain Landmarks in the Prognosis of Modern Medicine.—This article considers the subjects of anesthesia—after fifty years, the development of State Medicine, and the advent of bacteriology.

20. Fractures of the Skull.—Some years ago Bluhm collected a series of over 900 cases with the intent of demonstrating a lessened mortality in delayed operation following fracture of the skull. These statistics show that in the immediate operation the mortality reaches 23 per cent., while in the delayed or later operation, the mortality is only 33 per cent. Clinton points out that in these statistics no statement was made to the ultimate condition of the patients with reference to epilepsy, insanity, etc., or what portion of the 53 per cent. would come under the head of hopeless cases. The object of his paper is to show that to avoid these late results, early operation is most advisable.

28. Modern Treatment of Fractures.—Tracy calls attention to the principal indications in fractures, that is, to get fixation of the bone in the natural position, there being only one fracture best treated without fixative apparatus, that is, fracture of the neck of the femur in the aged. In this case the best surgical treatment is purely medical. In all other fractures mechanical fixation, where it can be obtained, is necessary. He alludes to the use of plaster of paris for fractures as uncertain, inefficient, and concealing the real state of affairs, and thinks that it will be soon relegated to disuse. Splints made of felt or wood fiber, especially the latter, are preferable.

29.—This article was published in this JOURNAL, March 4, Vol. xxxii, p. 479.

33. Intestinal Obstructions.—Jelks reports a case in which there was pain, constipation and vomiting, which later became stercoraceous. The diagnosis was obstruction, probably due to adhesive bands, as the patient had undergone a laparotomy some years before. On operation, instead of obstruction, they found a gangrenous appendicitis with septic peritonitis. In discussing the case he takes up the subject of the time and necessity for operation in appendicitis and thinks that in a great majority of cases where skilled surgeons and the necessary appliances can not be had the majority of patients will do better without operation.

34. Surgery and Insanity.—The point in Coc's paper is the necessity of watchfulness and care after surgical operations in order to avoid post-operative mental disturbances.

36. Vaginal Section.—After describing preparation and technic, Taylor reports a large number of cases operated on by the vaginal route and believes that its advantages are unquestionable. It gives less shock to the patient; the operator can work with more ease; recovery is more rapid; unabsorbable ligatures may be tied and left exposed until ready to be taken out; it permits a second operation, if necessary, with little danger, and the nervous phenomena are much less pronounced and serious.

37. Vaginal Hysterectomy.—Lindley reports four cases of vaginal hysterectomy, in two of which there was serious bleeding, occurring late after the operation. In another there was an instrument broken in the vagina and in still another death occurred apparently from septic peritonitis without any known cause.

39. Abdominal Pain.—Thomas calls attention to the importance of the symptom of abdominal pain. While about 50 per cent. of the cases will recover with simple analgesics, others indicate serious conditions, such as hepatic lithiasis, appendicitis, nephrolithiasis, intestinal obstruction, tubal pregnancy, etc. He believes that severe abdominal pain should be thoroughly investigated in every case and that whoever does so as a routine practice will not regret it.

43. Surgical Complications of Pneumonia.—The complications noticed by Freeman are pneumococcus arthritis, local abscess, peritonitis, and septicemia, empyemata, and abscesses of the lungs.

44. Sterility in Women.—Nilsen discusses the cause of sterility in women and calls attention to the fact that very minute lesions may have their influence.

45. Hydramnios.—In this paper Polak discusses the condition of excessive secretion of amniotic fluid and its consequences. He reports a case and discusses the principal causes and complications and the importance and significance of the condition. The excessive amount of fluid is a cause of malpresentation. It also is one of the most common causes of the excessive vomiting of pregnancy. It favors prolapse of the cord, post-partum hemorrhage, inversion, and may be placed well to the front in the etiology of repeated abortion. It is, however, admitted that syphilis is coincident with hydramnios in the majority of cases and the part that it plays in these abortions must be considered. Treatment depends largely on the degree of the condition and the essential indications in each particular case. The maternal condition may often demand early rupture of the membranes but especial care should be taken to prevent too rapid escape of the fluid. He has found that rupturing of the sac from the cervix with the patient in an exaggerated Trendelenburg position has its advantages in this regard. Instrumental and manual delivery should be avoided when possible on account of the increased tendency to sepsis. The third stage of labor should be managed with the greatest caution and in no way hurried unless hemorrhage occurs.

47. Cesarean Section.—Fancourt Barnes concludes, as regards this operation as compared with symphysiotomy, that the latter has not justified its existence and he can not help thinking that in a few years the eminent obstetricians who have been advocating it will abandon the operation. Induction of premature labor within certain limits will always hold a recognized and useful position among obstetric operations, and we are forced to the conclusion after a careful study of the latest figures that have been published on Cesarean section, that it is a scientific and justifiable operation and that it will be more widely resorted to in the future, as the science of obstetrics advances, than it has in the past.

50. Is Leprosy Curable?—In opposition to the general opinion, Dr. Roger S. Chew maintains the affirmative. He gives his experience with a large number of remedies and a table showing results of the treatment, by different remedies, asclepias, anaeridium, arsenic, chaulmoogra oil, chrysarobin, etc., which are very variable, though the total of the cases gives 156 cures to 612 failures. He finally obtained a crystalline substance from a maceration of the roots, leaves and seed of a three year growth of *Gynocardia lanceifolia*, and gives its chemical formula at length in combination with gold. He calls this remedy "Gynocyanuridarizarin" and when given internally to dogs and cats in doses from 0.01 to 0.0025 grains, these crystals produce cramps, diarrhea and vomiting, with paralysis of the

musculo-cutaneous nerves and great physical prostration, while doses of from 1/10 to 1/2 grain caused violent convulsions resulting in death in less than 24 hours, while the autopsy revealed some of the post-mortem appearances of potassio-cyanide poisoning. Doses of 0.00001 to 0.0001 grains, on the other hand, appear to act as a powerful musculo-cutaneous neural stimulant, causing in the healthy subject, anesthetic areas, ulcers and crops of papillae, but in the ailing subject inducing rapid granulation of indolent ulcers, converting pus and sanious exudates into serous discharges which rapidly lessened and disappeared, retarding the development and movement of tubercle bacilli, increasing the number of red blood-corpuscles and apparently stimulating the leucocytes to increased energy. He went into details concerning this to various journals, but had difficulty in obtaining recognition, and finally experimented with it on a man with the result of producing a perfect cure in his first case. He then sent packets of the drug to various relatives and medical friends and claims that of 256 cases treated with every one made a recovery. He then treated twelve cases before a test committee of physicians and others, with a cure in each case. He says, having made no secret of his plans, he does not see why it has not received attention from the medical profession, nor had its merits appreciated.

51. **Simulated Mental and Nervous Diseases.**—Bell discusses the subject of simulation and its frequency, which he thinks is common in prisons but not so common in general practice, especially under the observation of neurologists. The person who attempts to feign insanity has a difficult task. There is practically only one form not easily detected, that is, the dumb or speechless type. The feigning of health is common however, in asylums, with the idea of being released. There are some symptoms that are almost impossible to feign, such as loss of sensation or consciousness, and the simulator must, it is to be remembered, be fully as familiar with the symptoms he imitates as is the physician he attempts to deceive.

53. **Determination of Sex.**—Dunsmoor's paper discusses the various theories of production of sex, the author himself announcing his belief in the Thury theory, that the degree of ripeness of the ovum is the natural factor in the determination of the sex of the animal produced. His article contains a number of communications from physicians, stock-breeders and others as to their experience and observations.

55. **Diet in Typhoid Fever.**—According to Abbott, the present accepted ideas as to diet in typhoid need some change. A milk diet is open to certain objections and does not agree with every individual even when sick. It has been his practice or years to give his typhoid patients what might be called a soft diet, consisting of milk when it is agreeable, buttermilk, all kinds of soups and broths, raw and soft eggs, and the yolks of hard boiled eggs. As regards the use of fruits, in his section constipation is rather more common than diarrhea and he does not prohibit stewed or baked apples, the pulp of grapes, the juice of oranges, and even bananas if properly ripened and sound. In regard to the intervals of feeding, he believes in longer intervals of 2, 3 or 4 hours or even more. Alcohol he never he thinks is not only unnecessary but often injurious and he does not encourage its use.

57. **Malaria in Children.**—Moncovo continues his description of malaria in children as observed by him in Brazil. He discusses the mosquito theory and believes that his experience confirms it. He has never been able to observe any of the alleged antagonism between tuberculosis and malaria but finds that the two conditions react upon each other to a serious extent. In fact phthisis, like other dystrophic diseases, increases the predisposition. He reviews the symptoms in these cases and finds that they do not indicate that diet is at all at fault. Hypertrophy of the spleen is absent in many cases of infantile malaria, but its situation and the difficulty of its examination make this symptom more difficult and less valuable than in adults. The article is to be continued.

60. **Infant-Feeding.**—Leavell's paper reviews the subject of infant-feeding at length, showing the modification that cow's milk requires to make it a proper food for infants, and he favors the establishment of milk laboratories in cities which will provide to the consumer milk prepared by any prescribed formula. Regularity in feeding is of the utmost importance and he gives the periods and intervals at the different ages. The tem-

perature of the milk should be about 99; it should be kept free from germs by Pasteurizing or boiling. The only accurate way to determine whether or not the child is thriving is by weight. An infant should gain at least four ounces a week for several months. If it shows no evidence of indigestion and does not gain in weight, the quantity of food should be increased. It is by watching this symptom of weight that we are often able to prevent serious nutritive disorders before they reveal themselves in other ways.

61. **Cholera Infantum.**—Brown discusses the subject of animal toxins and suggests the question whether these products may not be the original factors in the causation of cholera infantum.

62. **Gall Stones.**—After noticing the symptoms of gall-stones and the course of the disease if untreated, Simpson states the following indications for immediate operative interference: 1. Any case of hepatic colic in which a tumor of the gall-bladder can be made out. 2. Persistent jaundice with pain, even at the risk of finding a cancer. 3. Recurrent biliary colic. 4. Biliary colic followed by persistent jaundice. 5. Colic with prolonged rise of temperature and high pulse. 6. Obstruction of the common duct evidenced by jaundice and acholic stools. 7. Obstruction of the bowel and peritoneum. 8. Empyema of the gall-bladder and liver abscess. A state of choleraemia does not contraindicate the operation. He describes the method of Bernays of performing cholecystotomy, which he considers preferable and adopts in his practice. He says also the combined longitudinal and oblique incision is the best in case a cholecystotomy or cholecyst-duodenostomy has to be performed, when stricture of the common duct has been found. In the latter operation the incision into the duodenum must be twice the size of that in the fundus of the gall-bladder, or the contents of the former will enter the latter and lead to trouble.

66. **The Relations of the Coroner to the Undertaker.**—This paper, delivered before an undertakers' association, is one that is certainly of interest to the average physician. The author brings out various points in regard to the cause of death, medicolegal expert testimony, and appeals to the undertakers to give more attention to the phenomena they observe between death and burial, as they have it in their power to add materially to our knowledge of cadaveric changes.

71. **Conditions Leading to Fibroid Changes.**—The subject of Anderson's article is the fibrosis that occurs usually with old age, which while efficient in producing pathologic symptoms may almost be called physiologic, and its premature appearance. He notices especially the conditions in the circulatory apparatus, the kidneys, liver, etc. The etiology is obscure. Heredity seems to have its influence. Syphilis, gout, rheumatism and infectious diseases are also causative. Among the theories that have been advanced, the uric acid and toxin theories are most popular but none fully explain the condition. As regards treatment, the most important are regulation of diet, mode of life and hygienic surroundings. Those who have lived high should be restricted, and alcoholic beverages, excessive work, irregular hours and worry must be avoided. Exercise must be governed by the condition of the heart muscles. A moderately warm equable climate and out-of-door life are favorable conditions for patients of this class. Among drugs, potassium iodid, arsenic and phosphorus are mentioned. The condition of the heart will be met best by the special remedies indicated.

72. **Appendicitis.**—Joy reports a case of a young man in whom the persistent pain was in the region of the right kidney except at the beginning of the attack, and the diagnosis could not be made until septic symptoms appeared. Then, on the presumption that they had to do with kidney abscess, an incision was made for lumbar nephrectomy, but the finding was a retroperitoneal appendix abscess. A second operation was required three weeks later, after which the patient did well.

74. **Ear Disease.**—Strangways objects to the frequent use of syringes and believes that the value of peroxid of hydrogen in aural troubles is greatly overestimated. To cleanse the ear he uses the head mirror and aural speculum, applicators, aural forceps, and occasionally, Anel's lachrymal syringe with a long end piece. He speaks favorably of the use of tincture of iodine in inflammatory diseases of the aural canal, also of compound tincture of benzoin. Cleanliness stands first as a remedy and, in his estimation, compound tincture of benzoin next.

75. **Overcrowding in the Profession.**—Sherman's paper is a radical argument for single tax and government ownership of land as a cure of evils of overcrowding in the medical profession.

80. **Matrimony.**—Aronstam advocates government regulation of marriage and examination of all candidates as to physiological condition and family history.

82.—See abstract in JOURNAL, May 20, p. 1113.

83.—Ibid., p. 1112.

84.—Ibid.

85.—Ibid.

87.—Ibid., September 9, p. 670.

88. **Cerebrospinal Meningitis.**—Irwin discusses the literature of three epidemics of cerebrospinal meningitis that have occurred in Louisville since 1874, and gives an account of the symptoms and treatment. The later epidemics have presented no new features.

89. **Treatment of Tuberculosis.**—Flick believes that tuberculosis can now be considered a curable disease. The fundamental principle in the treatment is immunity and the chief means at our command for attaining this are: 1, nutrition; 2, drugs; and 3, antitoxin. Nutrition must be assigned first place and combines forced feeding and artificial digestion, rest, exercise and climate. By forced feeding is meant the taking in of a large quantity of easily digested and readily assimilated food, and in connection with this the liver, kidneys and intestines must not be unattended to. Oxidation is also important and a liberal air-supply is as essential as food. Life in the open air should be pursued as far as possible. Rebreathed air should be avoided. No matter where the air comes from let the patient have plenty of it. Outdoor life, however, must not be interpreted as constant exercise, overexertion being dangerous. Exercise should be graduated according to the patients' powers and improvement. Climate is reckoned as less valuable now than was formerly the case, and better results can be obtained at home as a rule than in any other place except a well-ordered sanatorium. As regards drugs, he believes that much can be done with them. He has found iodine the most valuable remedy, in the form of europen. The formula that he employs is europen 1 dram, oil of rose 1 minim, oil of anise 1 dram, and olive-oil 2½ ounces. Of this he has the patient rub from a teaspoonful to a tablespoonful into the arm-pits and inside of the thighs once or twice a day. As tolerance increases, he sometimes gives europen by the mouth in addition. This treatment should be kept up for a long time. The next most valuable drug is creosote, and in case the disease has passed to the stage of breaking down, he gives creosote in addition to europen treatment. Large doses should be given. He begins with one drop and increases it regularly until the patient takes from 40 to 50 drops a day in hot water. The third place is assigned to strychnin, changing the dose from time to time. Other drugs are mentioned, such as arsenic, calomel, ammonia, nitroglycerin, etc. Antitoxin is yet on trial, and he employs as a modification of it, which has given good results, the use of a fly blister, causing a large vesicle and allows it to reabsorb. The symptoms from this treatment are much those as described after the injection of tuberculin, and he thinks he has seen benefit in this method.

90. **Empyema from a Surgical Standpoint.**—In this article Munro discusses the subject of anesthesia in empyema, believing that ether is generally a safe agent. As regards expansion of the lungs, he thinks an early operation is necessary to prevent consolidation. The deaths in his cases have come either from dislodgement of an embolus: from the relapse or extension of pneumonia; and in the streptococcal cases from a rapid general infection. He describes his technic, making, as a rule, resection of a rib, generally the seventh or eighth, at which level the cavity is usually as well drained as anywhere and the danger of injuring the diaphragm is avoided. He thinks that the anterior or midaxillary line is as advantageous for the incision as one farther back. The drainage-tube should be short and should not project beyond the inner surface of the chest. When a suitable operating-table is at hand, the operation may be done with the patient partially sitting up, the arm on the affected side being held over the head. This allows free respiration and free access to all but the most remote posterior parts of the chest. After operation, patients improve more

rapidly if they are allowed to sit up as soon as they can safely do so. Systematic exercises, etc., are valuable in expanding the lungs.

93. **The Specific Cause of Yellow Fever.**—Reed and Carroll, in this article, reply to Sanarelli's recent communication. They resent his charge that they have made mistakes and mixed their cultures and state that the culture used was obtained from Pasteur's laboratory where it was opened by Dr. Roux, and bore the label of the Laboratory of Hygiene, University of Montevideo. It was from this that their subsequent colonies were made and their experiments performed. They traverse many of Sanarelli's criticisms of their work, showing that the difference claimed of the growth on potato of the hog-cholera and Sanarelli's bacillus is not as he states, that the bacillus *icteroides* does not always grow on potatoes as a colorless, scarcely visible growth, as Sanarelli says, but may show various methods of growth, and they propose to show that his statement as to the supposed effect of certain temperatures on the hog-cholera bacillus is entitled to no credence, and refer him to the literature. They believe that Dr. Selander has never plated on gelatin the genuine hog-cholera bacillus as known in this country. They also point out that Sanarelli, in emphasizing the specific character of the necroses in the liver of guinea-pigs and rabbits, shows a surprisingly limited knowledge of the work that has been done in this line. As regards his criticisms that Reed and Carroll failed to produce acute stentosis of the liver in dogs with his bacillus, they publish a table of the observations by Sanarelli, by themselves, and by De Lacerdo and Ramos, showing that while the former has more such results than they, the latter observers have even less and the statement that they themselves failed to do so is incorrect. Concerning Sanarelli's criticism as to the resistance of the yellow-fever germ to cold, Reed and Carroll say that they never questioned the vitality of the bacillus, but its effect as the specific germ of yellow fever, and they will leave to Dr. Novy the easy task of answering this part of Sanarelli's article. The paper concludes with the account of their experiments in feeding bacillus *icteroides* to young hogs, and they believe that they justify them in expressing the opinion that it is a variety of the hog-cholera bacillus.

94. **Cardioesophageal Gush and Click.**—Curtin here describes two symptoms, the description of which he has not heretofore found in the literature. The first patient complained of being troubled with a queer noise which the doctor could hear without applying the ear to the chest. The sound occurred before or early in the systole and was loudest when the patient's mouth was open. It appeared like a short gush of air from the throat, modified by the upper air-passages, giving it a low pitched grunting sound. It continued while she was talking and breathing, and apparently had no connection with the stomach. It was relieved by potassium bromid and nuxvomica. A second case was also observed. The sound was diagnosed as of endocardial origin. The patients all had organic heart disease with enlarged organ. He explains the sound by the heart in diastole pressing out of the esophagus a small amount of air, which was readmitted during the contraction or systole of the organ. He also describes what he calls "esophageal clicking," which has similar peculiarities and which is faucial in its origin and was explained by him as caused by the separation of two moist surfaces. As it keeps time with the heart, it is evidently of cardiac origin. He recapitulates as follows: 1. The sounds were heard at the beginning of the systole of the heart and, in two cases, diagnosed as an endocardial murmur. 2. The sounds of both were modified by respiration, being heard most markedly at the end of expiration. 3. They were all more or less evanescent, except in the case of the old soldier. 4. They were increased or developed by a full stomach, stimulants or excitement. 5. The sounds were increased by opening the mouth, and dulled by closing it. 6. They were heard by auscultation at the middle of the sternum, but very much subdued as compared with the sound heard at the open mouth. 7. The sound was not transmitted in any direction from mid-sternum. 8. They were not heard by auscultation over the stomach.

95. **Hydriatic Treatment of Pneumonia.**—Macalester, after noticing the general effects of hydriatic applications, their pathologic action on the nerve-centers and their prophyl-

lactic power against heart failure, describes his method in applying water treatment in pneumonia. He finds the chest compress the best application and describes it as follows: "The chest compress is composed of three folds of linen or old muslin cut in a manner to fit the entire chest, from above the clavicles down to the umbilicus, with slits in the axillary regions to form flaps and cover the shoulders. It is then wrung out of water, so that it does not drip, at a temperature of 60 F., snugly applied around the thorax, covered with a piece of closely woven, thin flannel of the same shape but at least an inch wider in all directions, and secured by safety-pins. At first the compress is changed every half hour, then every hour or two, until the patient's temperature is below 100, when it may be discontinued. The compress should not be covered with oiled silk, a very popular proceeding on the part of attendants for the sake of convenience and protection of the patient's bed and clothing, as this would convert it into a poultice and deprive it of its stimulating and gradually cooling action."

97. Fracture of the Lower End of the Radius.—Noticing first the erroneous views in regard to Colles' fracture, Beck remarks that the anatomic aspects of this lesion differ more than those of any other fracture and that the Röntgen rays reveal to us of late years more in regard to it than ever could have been known before. In classifying the different varieties he distinguishes epiphyseal separation, fissures (infracture), complete fractures, incomplete fractures, fractures of the lower end of the radius combined with infracture or fracture of the head of the ulna, and fracture of the lower end of the radius combined with fracture of the styloid process of the ulna. All these different varieties may be extra-articular and intra-articular. Epiphyseal separation shows the same symptoms and is to be treated on the same principles as complete fracture. In very young children there are real chondroepiphyseal separations, while later at the age of between 14 and 17 osteoepiphyseal separation is observed, the fracture line extending to the diaphysis. Fissures are extra-articular as well as intra-articular and are far more frequent than was supposed before the use of the X-rays. There being no displacement, no reduction is required, and this shows why the results in these cases are nearly always good. Adhesions, however, may be formed in the joint too long immobilized. Beck treats these with a wire splint slightly bent downward, applied at the flexor side of the arm, where it reaches from the tips of the fingers to the elbow, the downward bent portion being attached to the palm of the hand. After three or four days, when the swelling has subsided, this long splint is removed and a bracelet consisting of a piece of mossboard about four inches wide is substituted. It fixes the wrist sufficiently and permits motion enough to prevent adhesions. The patient carries his hand in a sling in such a manner that the ulnar margin rests on it. Movement of the fingers is advised. Complete fracture is divided into intra-articular and extra-articular, the first being the most important. It can only be certainly determined by the X-ray. The extra-articular complete type is the best known, the typical Colles' fracture. The deformity is characteristic. Abnormal mobility and crepitus is always present except in case of impaction of the epiphyseal end into the upper end of the radius. Local pain is generally severe. The paper is to be continued, and will be further noticed with its next issue.

98. A Test Case for Taste.—Beers gives an account of a newly devised case for testing the sense of taste by colorless solutions in the contained bottles and gives directions for use.

99. Adenocarcinoma of the Nose.—Newcomb reports a case of adenocarcinoma of the nose, and has collected four others in the literature to be added to a table prepared by Dr. Hopkins two years ago. He adds simply a paragraph as to the surgical treatment. "Up to the present time two general operative plans have been followed: First, removal of the superior maxilla with more or less of the surrounding structures, and, second, attempted starvation of the growth by shutting off its blood-supply. In pursuance of the latter end the external carotid has been ligated. I have been interested to learn of a modification of this procedure, first made, I believe, by Dr. R. H. M. Dawbarn, a well known surgeon and anatomist of New York. He found, upon studying the anastomotic circulation, that after simple ligation of the external carotid there were fully twenty channels through which collateral circulation

could be established. With a view, therefore, of still further cutting off the blood-supply, he conceived the idea of ligating, one after another, the eight branches of the external carotid, and then, as the trunk of the vessel was thus rendered useless, of resecting it entire. He has done this operation sixteen times on eight patients, a two-weeks interval elapsing between the two operations in each case. It has been done once or twice by others. While the period covered by this work is too short and the number of cases thus operated on too few to allow of decisive conclusions, he believes that time will demonstrate the logic and effectiveness of this operative modification."

101. Synchiotomy of the Stapes.—By the term "synchiotomy" Dench means the division of adhesions about the stapes, which usually lie between the posterior crus of the ossicle and the corresponding wall of the oval niche, but occasionally occur superiorly and anteriorly. He says:

"The operative technique is comparatively simple. The procedure can easily be conducted under cocaine anesthesia, or, if this is found to produce unpleasant constitutional effects, a solution of eucaïn B may be used. As this latter drug causes a hyperemia of the tissues, its application should be followed by that of a sterilized solution of suprarenal extract. This latter application will sufficiently control the engorgement caused by the eucaïn to assure the operator a clear view of the field of operation. Prior to any operative procedure of this character the parts should be sterilized by thoroughly mopping out the canal and tympanum with an alcoholic solution of bi-hlorid of mercury, of a strength of 1 to 3000. After the field of operation has been properly prepared, the first step is to divide any adhesions which may lie between the posterior crus of the stapes and the adjacent wall of the oval niche. If a fragment of the drum membrane remains and prevents a clear view of the stapes, it is better to excise this as a primary procedure. In certain cases, owing to the position of the stapes, the ossicle can not be seen. This is particularly true where posterior adhesions are present, the ossicle being drawn backward behind the tympanic ring. Knowing the normal position of the stapes, it is a comparatively simple matter, after local anesthesia has been thoroughly established, to divide these adhesions, although the ossicle itself may be completely hidden from view. In order to do this a sharp-pointed knife is introduced into the middle ear in the upper and posterior quadrant, close to the tympanic ring. The knife is carried inward until the bony wall of the tympanum is encountered. It is then swept downward, the point being still kept in contact with the internal tympanic wall. In this way all adhesions lying between the posterior crus of the stapes and the adjacent wall of the oval niche are divided, including the tendon of the stapedius muscle. Not infrequently, where the stapes is invisible before the procedure, it is easily seen after the incision has been made, owing to the division of the adhesions which have drawn the ossicle upward and backward. The operation itself, if carefully conducted, is absolutely painless.

Prior to the operation a careful functional examination should be made, and this should be repeated after each successive step, so as to note the effect on the lower tone limit and on the power of audition. It is not uncommon to find a marked improvement in hearing after a simple division of posterior adhesions. If this does not follow, the operator should next pass the knife beneath the crura of the stapes and the adjacent wall of the niche. Careful mobilization of the ossicle by means of the cotton-tipped probe is also advisable, both the hearing and the lower tone limit being tested from time to time to see what improvement follows the procedure."

He has records of 26 cases thus operated on, with improvement of hearing in 25. In many instances the effect on the opposite ear has been exceedingly marked, the hearing not only being improved, but the subjective noises often relieved and incipient inflammation of either the labyrinth or the middle ear effectually prevented.

The after-treatment is exceedingly simple. If the field of operation has been properly sterilized, it is only necessary to occlude the meatus with a pledget of sterilized cotton. This should be changed daily, and at the same time the meatus wiped out with a pledget of sterilized cotton. Frequently there may be a serosanguinolent discharge from the ear for from three to four days after the operation; at the end of this time the tym-

panum becomes dry. He usually directs the patient to keep the meatus occluded while in the open air for at least ten days after the procedure. At the end of four or five days, if there is no discharge, the ear may be left open while the patient is in the house, a cotton pledget being inserted when the patient is in the open air or in a dusty place.

102. Bovine and Human Tuberculosis.—In this article, which was commenced in a previous number, Moore questions the prevalent view as to the transmission of bovine tuberculosis to the human species. After having gone over the subject of the prevalence of tuberculosis in herds and the methods adopted to stamp it out, he discusses the question of the relation of the disease germ in the two species, the bovine and the human. He questions the possibility of bovine tuberculosis being transmitted to man and points out certain differences in the organisms. Man is omnivorous, cattle are herbivorous. The normal human pulse is 72, that of the ox, 40 or 45. The normal temperature is 98.6, that of cattle from 100 to 100.5. He believes that there is something in the human body antagonistic to the germs of the ox, and vice versa. He calls attention to a similar state of affairs in other species. Glanders kills field mice but not house mice, while the reverse is the case with mouse septicemia. The bacillus of tuberculosis in man he believes practically specific to him and the same is true of cattle, and the environment being changed, the pathogenic power is lost. In all his experience with cattle tuberculosis he has never met with a case of transmission to man, and he believes that reported cases have been incorrectly interpreted. As regards the transmission of human tuberculosis to cattle, the case is equally strong. There is no instance that he can find where the infection of the disease in man has passed to the animal. The herd at the Saranac Lake Sanatorium, which was exposed if any could be, was found free from tuberculosis. He quotes Theobald Smith as reporting similar views in regard to this subject, and maintains that a few statements like that of Sternberg in his "Manual," and others, have scared us into believing that bovine tuberculosis is a human danger. He finishes his article with a number of letters from various parties supporting his views.

103. Etiology of Tuberculosis.—The chief point made in Girdsansk's paper is the danger of tuberculosis infection from sweeping. The broom is, in his opinion, the chief and most serious danger to man. While infection may occur by other routes, that by inhalation is by far the most frequent. He says:

"If 60 per cent. of all men die of pulmonary tuberculosis (Biggs)—if the main, almost the only, cause of pulmonary tuberculosis is bacilli-laden dust, and the broom by far the main cause for such dust, the broom is evidently responsible for more deaths than the sword ever was.

"The inevitable consequences of the above are: 1. That the broom, far from serving any hygienic purpose, is the cause of the maintenance of organic dust in the atmosphere of the large cities of the world, and as such is the most important cause of the existence and spread of tuberculosis, probably also of various other infectious diseases, and should therefore be abolished. 2. That the carpet is an unhygienic article serving as a fine breeding-ground for vegetable parasites, necessitating the use of the broom and the duster, and thereby becoming a reason for existence and spread of tuberculosis, probably also of various other infectious diseases, and should therefore be abolished. 2. That the carpet is an unhygienic article serving as a fine breeding-ground for vegetable parasites, necessitating the use of the broom and the duster, and thereby becoming a reason for the existence of organic dust. 3. That the only proper and safe way of procuring cleanliness of the floors and streets of our large cities is by the free use of water as a cleansing agent in the shape of showers, sprinkling wagons, hose, mops etc. 4. That all floors and floor coverings of the home and the street ought to be so constructed as to facilitate the free use of water in the shape of shower or mop to produce cleanliness.

104. Tetanus Treated with Carbolic Acid.—Woods reports the only case of tetanus he has seen recover, the patient treated by hypodermic injections of 10 per cent. solution of carbolic acid every half hour until he was able to swallow, except when he was quiet in the night. When he became able to swallow a dram of the solution in glycerin was administered every three hours until the spasms ceased, and after that a dram three times a day, gradually diminished to one-half dram until all

rigidity had disappeared. He appends the report of a case of tetanus in a horse similarly treated, with like results.

105. Reflex Irritation and Eye Strain.—Drew's paper calls attention to the importance of reflex irritation from eye-strain in the production of mental disorders. He advocates the views promulgated by Stevens, Ranney and others in this regard.

106. Inoculation of Scarlet Fever.—This paper contains the report of 10 cases of children inoculated with scarlet fever with mucus obtained from the throat and buccal cavity of a mild case of scarlet fever, after the eruption had appeared. The inoculations were originally made, it is stated in a foot-note, to prove that a protective virus had been discovered, but it was found that genuine scarlet fever was produced. The following are the author's conclusions: 1. The mucus of the throat and mouth has been shown with absolute certainty to contain the contagion of the disease. 2. The early eruptive stage of scarlatina is exceedingly infectious because of the presence in the discharges from the mouth and throat of the special poison of the disease. 3. The contagion of the disease being in the mouth and throat secretions, care should be taken, not only to disinfect these parts as thoroughly as possible, but to keep the tongue, mouth and lips moist constantly, if possible, in order to prevent the contagious principle being forced into the air of the room by the exhalations of the patient. 4. Mouth and nose wipes should be used instead of spit-cups and costly handkerchiefs and they should be destroyed by fire before the discharges on them dry, i. e., at once. If fire be not available, disinfecting solutions should be used strong enough to render the poison inert. 5. The soiling of the bed-clothing and personal apparel with mouth discharges should be prevented if possible. In the event of such contamination, they should be disinfected as soon as possible. 6. No toys or implements of any sort that can not be boiled or subjected to the strongest germicidal solutions should be given the patient, as they are apt to become soiled by the mouth secretions. 7. Those who minister at the bedside should be especially careful as to personal contamination and disinfection from the moment they enter the room. 8. The nostrils should be taken thorough care of, as the morbid matter which finds its way into these parts will, in the dry state, easily find its way into the atmosphere of the room, thus making the spread of the disease more probable.

112. This is an abstract of a paper read before the American Gynecological Society, May 22, 1899.

113. Dysphonia.—Christy describes dysphonia as the result of any interference with normal respiration and phonation, and it may be accompanied by either pain or cough or both. It is: 1. Due to any interference with physiologic functions of the glottis and true cords, generally from inflammatory causes. 2. Not always in direct relationship with the intensity of the inflammation. 3. Not always present in inflammatory affections. 4. Not always associated with the constitutional diseases, presence of growths, etc. 5. Found occasionally with that rare constitutional condition (mentioned by Morell Mackenzie), a chronic inflammation of the mucous canals. 6. Found in cases of trachoma of the true cords known as singer's nodes. 7. Found in cases of lithemic throat, also in gouty and rheumatic conditions. 8. Found in cases of enervation of the larynx from general debility or localized paresis. 9. Frequently present during the period of pregnancy. 10. Causal relations not always determined by local inspection of the parts. 11. One vocal cord only may be normal, its companion useless. 12. Pain may or may not be a symptomatic feature. 13. Mild forms of dysphonia are occasionally due to gastric conditions. 14. Stenosis of larynx; pathologic changes found in subglottic space; chronic use of tobacco and alcohols. 15. Caused by an elongated uvula. After noticing the anatomy of the vocal organs, he gives the results of his treatment of this condition with the constant electric current, reporting four cases. His conclusions are that the galvanic current, as a curative agent in laryngeal and tracheal affection, a, is easy of application; b, is soothing and agreeable to the patient; c, relieves the congestion, pain and irritation; d, does not excite pain or spasm of the glottis or trachea; e, relieves the swollen lymphatic glands; f, cures more promptly than any other agent; g, patients recognize its value and return regularly for its application.

115. See JOURNAL June 24, 1899, p. 1443, for abstract of this article with discussion.

118. **Effects of Training.**—Darling's paper is concluded from a previous number, and he finds that the physiologic effects of training, on the heart and kidneys in particular, may approach unpleasantly near to pathologic conditions, and there should be some competent supervisor to see that the safe limits, when they are ascertained, are not passed. He thinks that it is well to suggest that too much work is not thrown on the muscles, especially on the heart, until they are strengthened by preliminary work, and to watch the nutrition carefully and to avoid nervous fatigue by providing a variety of exercise and not confining the attention too closely to the approaching contest.

120. **Staphylococcus Infection.**—The first part of this paper reviews the opinions in regard to certain skin diseases and concludes with investigations by the author, by inoculation and examinations, and with some remarks on impetigo contagiosa from a clinical standpoint. The author's results support strikingly the theory of staphylococcus pustular skin affections.

121. **Multiple Vulvar Ulcers in Typhoid.**—After remarking that vulvar ulceration of the kind described in the two cases reported are new to literature, Lartigau reports two cases of typhoid fever in which multiple ulcers occurred in the vulva and vagina, in one of which a bacteriologic study of this lesion produced a pure culture of typhoid, the bacillus reacting to all the tests. The second case was similar, but there were no bacteriologic studies made.

122. **Appendicitis.**—Harrison concludes that in all mild cases without severe complications the use of an ounce of prevention rather than a pound of cure is advisable, and operation is recommended as soon as the diagnosis is complete. In the fulminating variety of appendicitis, all will agree as to the advantage of the early operation. In those cases seen late, where there is suppurative peritonitis without collapse, the patient is entitled to the very small chance offered by the operation after he has been advised as to the gravity of the situation.

123. **Does the Practice of Medicine Pay?**—After reviewing the facts as they appear to him, the overcrowding of the profession, the multiplicity of medical colleges, etc., Monroe concludes that it does not pay, financially, to be a physician.

126. **Ligation of the Dorsal Vein of the Penis.**—Broome reports six cases of ligation of the vena dorsalis penis for functional impotence, with good results. He thinks that in properly selected cases this operation has its advantages, while it would be unavailing in neurasthenic cases with relaxed organs and very little sexual impulse.

FOREIGN.

Lancet, August 26.

Some Details in the Treatment of Acute Intussusception in Infants. H. STANSFIELD COLLIER, F.R.C.S.—The author recommends the method of treating intussusception in infants by injections with water or air, and on location of the tumor, the reduction of the bowel through a very small incision. He thinks that while injection alone is inefficient and large incision is perilous in infants, by this method there is less shock and danger. He reports three cases, briefly.

Cases of Amenorrhœa Associated with Raynaud's Disease and Pulmonary Tuberculosis. JOHN V. BYERS.—Byers has met with a series of cases within the past ten years characterized by: 1, arrested or diminished menstruation; 2, local symmetrical asphyxia of the extremities—especially of the arms and hands (Raynaud's disease); and 3, pulmonary tuberculosis. He gives details of four cases, and discusses the relation of these symptoms. The association of tuberculosis with Raynaud's disease is apparently a new fact.

Acquired Oblique Inguinal Hernia; 150 Consecutive Cases of Radical Cure; One Death and Two Recurrences; A New Operation. JOHN O'CONNOR.—The author, finding that orchitis followed Halsted's operation in 80 per cent. of his cases, and was frequently also met with after Bassini's operation, has devised the following method, which, in the fifteen cases in which he has used it, has been followed by no relapses or serious complications.

"A three-inch incision is made, commencing at a point half an inch internal to the anterior superior pubic spine, and is carried inward and downward to a point one inch above Poupart's ligament. The external oblique, internal oblique, and

transversalis muscles are opened by separation of their fibers, as in McBurney's appendicectomy. The funnel-shaped process of the peritoneum is then sought for and a finger is passed behind it in order to differentiate the cord, and with a little dissection the latter is freely separated from the former. The funnel is incised and the intestine and the omentum are pushed upward into the abdomen by a sponge inserted through the wound. If any bowel or omentum be found adherent in situ the complication is easily dealt with, but if such adhesions should have formed low down in the sac upward traction is made on the latter until the testis reaches the external ring, and the portion of sac thus exposed is divided from above downward on its anterior aspect. By this maneuver the majority of low adhesions can be easily brought into view. In cases of old adherent sacs upward traction might be useless, and then nothing would remain but to open the canal from above downward. In none of my 15 cases have I had occasion to do this. In two cases where there were low omental adhesions I doubly ligated the omentum, divided between, and allowed the distal segment to drop back and remain in the sac, and no ill effect followed. The sac is next ligated below the funnel and divided on the proximal side of the ligature, and the distal portion is dropped back into the inguinal canal and there it remains. It may act as filling material for the canal—not that I think any such is required, but that I do not consider it expedient to divide muscular fibers for the sake of removing it. In cases of bubonocoele the small sac may be removed with facility. The funnel-shaped process of the peritoneum is then completely snipped away at its base—i. e., at the level of the normal parietal peritoneum. A large gap is left; pressure forceps are applied, and the cut edges of the peritoneum are drawn down and are united by a continuous catgut suture. Having removed the funnel, the opening in the transversalis fascia appears as little like a ring as anything that can be well imagined. I have frequently been struck with the large size of this hole and have wondered how it was that yards instead of inches of bowel had not escaped through it, particularly if the great amount of intra-abdominal pressure which must be constantly concentrated on this point be thought of. Doubtless the oblique muscles save the situation and this in itself is a strong reason for objecting to operations in which these protective muscular fibers are ruthlessly divided. No muscle is strengthened by having a transverse cicatrix formed in it and, moreover, I am very dubious as to the durability of any cicatricial tissue barrier. The edges of the transversalis fascia are next caught by forceps and are drawn well into the field of operation; from four to six silk-worm gut sutures are then passed through the external oblique and transversalis muscles and the fascial pillars and are brought out in the reverse order on the opposite side. Care is taken to leave room for the cord to pass into the canal without compression. The edges of the deep wound are now firmly approximated, the sutures are tied, and the ends are cut off. The wounds in the external oblique and the skin are united by separate continuous catgut sutures.

"In none of the cases treated by this method has orchitis supervened and no recurrence has so far taken place. I may here mention that I never order a truss to be worn after an operation for radical cure. The advantages which may be claimed for this operation are: 1, the vitality or function of the testicle is not endangered; 2, there being no division of muscular fibers the natural anatomical support is not weakened; 3, the cause of the trouble only is dealt with, and all superfluous surgery is avoided; and 4, the wound is comparatively small, is further removed from the septic area, and it contains no pockets for blood or serum."

Suggestion As to Treatment of Graves' Disease by Administration of Bile by the Mouth, Hypodermically, and Intrathyroidal, with Cases. C. M. ALLAN.—In a case of Graves' disease Allan's attention was called to the absence of bile in the feces, and this suggested to him a probable paresis of the liver-cells in the disorder. Salicylate of soda and phosphate of potash, both powerful chologogues, did not influence the secretion. This led him to give pig's bile internally, supplementing it part of the time with intrathyroidal injections of the same. The dose was eight grains of extract every four hours, equivalent to 1500 grains of bile daily, and this was

later increased to 2250 grains, with great benefit. In all the patient received 48,000 grains, 3640 of which were given hypodermically. Recovery was perfect, and there was great general improvement and gain in weight. He concludes that bic has a digestive effect on other ferments or toxins, and reports a case of a boy treated by thyroid extract, which alone seriously disagreed with him but exercised its good effects without its untoward ones, if mixed two hours before use with bile. A second case of Graves' disease thus treated with success is also briefly reported.

Diphtheritic Paralysis in Cases Treated with Antitoxin. F. J. WOOLLACOTT.—This paper contains some interesting statistics in regard to the antitoxin treatment of diphtheria and the occurrence of diphtheritic paralysis. The author says: "In conclusion, the influence of antitoxin on diphtheritic paralysis may be summarized as follows: Up to the present the percentage of paralysis has increased on the whole. There is some evidence that large doses—i. e., not less than 4000 units—of antitoxin are more effective than small ones, both in preventing paralysis and diminishing the mortality due to it. The earlier antitoxin is given in diphtheria the less likely is paralysis to follow. Should it occur after early injection it will probably be mild and of comparatively short duration. The type of paralysis has on the whole, become less severe or, at all events, less dangerous to life. Finally, diphtheritic paralysis has become more prone to attack the young. This change in age incidence has probably made some minor difference in the relative frequency with which the various forms of paralysis are observed. The practical conclusion is that the full value of antitoxin is obtained only by using it early and in efficient doses. If this be done, not only is life saved, but tedious complications are prevented, or at least deprived of their dangerous characters."

Medical Press and Circular (London), August 23.

Notes on a Case of Hematuria from Healthy Kidneys. T. MYLES.—A case is here reported of hematuria, with pain, vomiting, etc., and movable kidneys, in a nurse, aged 26. Operation on the left kidney, which appeared to be the seat of irritation, revealed no adequate cause for the hematuria, and the kidney was fixed after an X-ray examination, which was also futile. The operation was in every respect a success, but the hematuria continued, and the patient's anemia and other symptoms became serious. A nephrectomy was then made twenty-three days later, and examination of the removed organ revealed a diffuse myxangiomatic condition of the pelvic submucous tissue. Recovery was complete. The points of interest in the case were the obscurity of the pathologic condition before removal, the examination by the X-ray of the kidney outside the body before fixation in the first operation, the mode of fixation, which was by removal of perineal fat and stripping of the capsule, and the pathologic findings, which Myles thinks are unique.

A Case Bearing on the Etiology of Rickets. CHARLES ELGWOOD.—After remarking on the popular notion that rickets is due to improper feeding, Elgwood reports a case that seems to point to other causes. A woman, aged 23, gave birth to an illegitimate child; the father a healthy young game-keeper. The boy has grown up healthy. In 1886 she married a farm laborer of degenerate type and of limited intelligence, who was defective in infancy, did not walk till eighteen months old, and at 8 years was considered to be in a decline. To him she bore five children, one of whom died rickety at 4, and the surviving ones all developed into marked rickets in different degrees. During most of this time the family lived in an old farmhouse in a healthy situation. In 1893 the man committed suicide, and the woman and her children moved to a cottage in a similar situation. Here, in 1896, she gave birth to another illegitimate child, so far healthy. Shortly after this she married again, and has one child, puny, but with no signs of rickets. According to her testimony, the feeding of her children has varied little, and during her first marriage her surroundings were much better than later in the cottage. Rickets is not common in the neighborhood. Elgwood has seen none other of such severity as some of these. He suggests that heredity may be an important cause, but that in cities where the disorder most prevails, this is obscured by other causes: overcrowding, lack of sunlight and ventilation, etc.

Uric Acid and the Circulation: Some New Methods of Estimating Its Effects. A. HAIG.—Quoting Raynaud, that in his disease as much as thirty seconds may elapse before the skin rendered white by pressure regains its normal color, while healthy skin does so in one or two seconds, Haig, assuming Raynaud's disease to be of uric acid origin, concluded that similar time-phenomena would be observed with other uric acid states. He, therefore, has utilized the metronome in testing this capillary reflex with an instrument devised to give exact areas and degrees of pressure, and finds, he says, that it goes parallel with high blood-pressure and with the disappearance of the after, or fatigue, image in the retina, indicating the capillary circulation there. He claims that testing this capillary reflex is an index of the amount of uric acid in the blood and urine, and that the capillary circulation is controlled by uric acid.

South African Medical Journal, August.

Notes on Some Recent Cases of Plague in South Africa.—Dr. A. J. Gregory, assistant medical officer of health, Cape Colony, publishes, in the *South African Medical Journal* for August, an account of a case of plague examined by him at Middleburg, Natal. While the bacteriologic examination and inoculation experiments were not absolutely conclusive they are sufficiently so as to leave little doubt as to the nature of the disease. Other facts, such as a mortality of rats at Delagoa Bay, where the patient came from, and the occurrence of other similar cases at that place, led Dr. Gregory to conclude that plague in a mild form has existed there since early in January, and probably for some time prior to that date. The lessened severity of the disorder, as compared with that in Bombay he attributes to more favorable sanitary conditions, and the measures adopted by the authorities. Dr. Gregory's diagnosis has been agreed to by the special medical plague officer at Johannesburg, Dr. Hornabrook, who examined the microscopic specimens and cultures.

Revue Hebdomadaire de Laryngologie, etc. (Bordeaux), August 12.

Center for Phonation. ONODI.—Study of a number of monsters and of fetuses whose skulls had been perforated, but who had used their voices, confirms the existence in man of an infracerebral center of phonation, the same as Onodi has already established for dogs, and in the same spot, that is, between the posterior quadrigeminal tubercles and the domain of the vagus.

Annales de Dermatologie (Paris), July.

Cazenave's Pemphigus Foliaceus.—LEJEUNNE.—The important pathologic rôle of the bone-marrow is still generally unrecognized, and osteomalacia, chronic rheumatism, dermatoses, etc., are explained by nervous disturbances or a diathesis. Leredde asserts that it is a lesion of the blood which determines certain cutaneous affections at least, and probably many more, and that the causes of the alterations in the blood are the primary causes of the dermatoses. He relates several observations showing that in pemphigus foliaceus over half the whites in the circulation are altered and abnormal in some respect. In one case, complicated with osteomalacia, the number of reds was less than normal (2,608,000); also the hemoglobin (8.50); slight increase in whites (8200); pronounced eosinophilia (27.5 per cent.), increasing and diminishing parallel to the intensity of the lesions; polymuclears less than normal (18.3 per cent.); mononuclears and lymphocytes (45.8 per cent.) He states that the blood differs from normal in the same way in Duhring's dermatosis, and the cutaneous lesions in each also belong to the same class, showing an exaggerated production of serum and an important adapedesis of eosinophilous cells and their elimination through the skin. He concludes with the statement that our present knowledge in respect to "drug eruptions," induced by agents which are not toxic except for a limited number of subjects—mentioning instances of Duhring's dermatosis induced by potassium iodid—throws light on the sensibility of the organism, and indicates that the origin of this sensibility should be sought in the blood-forming organs rather than in the nerves. The persistence of the lesions after the elimination of the medicinal agent should be attributed to a persisting reaction on the part of the hematopoietic organs rather than to a nervous reaction. These lesions persisting in the blood may engender a series of dermatoses, such as pemphigus foliaceus or vegetans or dermatitis exfoliativa.

Treatment of Leprosy with Chaulmugra Oil. TORTOULIS-BEY.—The prompt and remarkable benefit derived from subcutaneous injections of 5 grains of chaulmugra oil impels our Cairo confrère to publish a case in detail. The leprosy was severe and of fifteen years' standing. The improvement was evident after fifty injections (1894), and the disease continued retrogressing until for three years the subject has presented no evidences of the disease and has been appointed vice-consul and representative of a large bank. He had received 551 injections by the end of 1898, and 33 since; a total of 2720 grams of the oil. It was injected into the arm or leg; very slight and transient pain. All swelling subsides within twenty-four hours.

Archiv. f. Exp. Pathologie (Leipzig), xlii, 6.

Remedies to Arrest Hemorrhage. F. PICK.—In a series of experiments blood was allowed to flow from an opening in a femoral, mesenteric or jugular vein, and various drugs tested in respect to their power to control the flow. Ergotin was found entirely destitute of hemostatic properties, while hydrastinin and atropin proved effectual in diminishing the flow. Suprarenal extract produced the same effect, although it increased the blood-pressure.

Centralblatt f. Chirurgie (Leipzig), August 19.

New Methods of Treating Wounds. C. L. SCHLEICH.—Scrubbing and chemical disinfection are rejected entirely. Schleich claiming that his soap made of stearin, wax and marble dust, with which the hands and region are washed, accomplishes the purpose of coating the skin with a microscopic, aseptic wax covering, or glove for the hands, insoluble in serum and other organic fluids. The soap removes all grease and flakes of epidermis, and the hands can thus be sterilized as often as desired during the day at a trifling expense and without waste of time. His control-tests have been remarkably favorable, and the cosmetic advantages of the soap have already been confirmed by others. He disapproves of catgut, and keeps his silk in nutrient gelatin. He dresses wounds with "homogeneous" substances, preparations of gelatin, peptone and serum, on account of their fibrinolytic, etc., properties. His work describing his theories, methods and results in full has just been published at Berlin. (J. Springer, 378 pages.)

Muenchener Medizinische Wochenschrift, August 15 and 22.

Function of the Thyroid Gland. A. OSWALD.—All the iodine-containing substances in the thyroid gland pass into the extract when extracted with physiologic salt solution, and Oswald has found that these substances are albuminoids, and that the extract after the albuminoids have been removed no longer contains any iodine. He has also succeeded in isolating from the aqueous organ extract (with ammonium sulphate) two distinct albuminoids, one resembling globulin, but precipitated by acetic acid although dissolving again with an excess. This he calls "thyroglobulin." It contains 1.6 per cent. iodine, and is much more abundant than the other albuminoid, which he finds contains phosphorus but no iodine, and is essentially a nucleoprotein. He found by numerous tests (pigs) that the entire specific effect of the thyroid on the metabolism is due exclusively to the thyroglobulin; also that the colloid substance is merely a combination of these albuminoids, thyroglobulin and the nucleoprotein, and hence that the colloid is the effective element of the gland, and is in fact its "specific secretion." The thyroglobulin probably gives up its iodine when it has accomplished its purpose, and the iodine circulating in the blood is in turn retained by the thyroid to make new thyroglobulin. The next question to be decided is whether the function of the thyroid gland is restricted to the elaboration of thyroglobulin, and experiments are now in order to determine this. Oswald warns that administering it per os is not a reliable method of testing its action on the organism, as it is possible and probable that it loses some of its properties during the process of digestion.

Perforating Wounds of the Alimentary Canal. F. HAHN.—Two observations are reported, one a wide stab in the stomach after a hearty meal and the other extensive laceration of the small intestines by the kick of a horse. Both were cured with a prompt laparotomy, extremely careful cleansing and tamponing of the abdominal cavity, especially of the sub-phrenic space and Douglas' sac, and abstention from opiates. The subjective condition did not seem to warrant an intervention in the second case, but Hahn followed the indications of

the increasing area of dullness, the rigid tension of the abdomen and emission of feces.

Comparison of Indications for Sectio Cesareae, Symphysiotomy, Craniotomy and Premature Delivery. LEOPOLD.—Far above every consideration is the value of the mother to the home. Other children may be born; another father may take the father's place, but a mother's place can never be filled. Far better to perforate once too many times than once too few. The practitioner must deliberate with himself whether he is equal to a sectio or a symphysiotomy, and will not regret his rashness before he has finished it; also whether he has reliable and skilled assistance and whether the surroundings of the home will not jeopardize the success of his best efforts. Bearing these axioms in mind, he summarizes the indications as follows: Before term, artificial premature delivery is indicated for women who have had trouble in previous deliveries from a narrow pelvis—limit, 7 cm. conj. vera, for a flat rhaehitic pelvis; 7.5 for a generally narrow pelvis. Best time is the thirty-fifth week of the pregnancy. Retention of the bag of waters and head presentation are essential conditions for success. At term. The extreme limit for craniotomy is 6 cm. conj. vera. The indications are a dead or dying child. Even if delivered by sectio, the probabilities of the survival of the child are too slight to counterbalance the danger to the mother, except in most exceptional cases. Craniotomy may also be indicated in private practice with a living child and woman in good condition when the practitioner dares not venture upon sectio or symphysiotomy, and the pelvis is too narrow for natural or forceps delivery. Sectio Cesareae is imperatively indicated in case of a conj. vera of 6 to 6 cm.; relatively indicated with 7.5 to 6, after spontaneous delivery has been found impossible even with colpo-urinary and Walcher's position, and it is impossible to use the forceps, the child is living and the surroundings of a hospital or residence ensuring a successful after-treatment. If the conditions are not all fulfilled, craniotomy should be preferred. Symphysiotomy is restricted to pelvis of 7.5 to 6.5 cm. conj. vera and the conditions should be the same as for sectio, with craniotomy the alternative. The choice between it and sectio depends upon the taste and experience of the operator. They stand on about the same plane in respect to the results for mother and child.

Implantation of the Ureter in the Bladder to Cure a Utero-Cervical Fistula. J. A. AMANN.—Brilliant success was attained in three cases in which, after a laparotomy, the ureter was cut off above the enormous cicatricial growth around its mouth and implanted in the bladder near the abdominal incision, according to the method devised and described by Witzel in *Ubl. f. Gyn.*, 1896, No. 11. Extirpation of a sound kidney or transformation of a uretero-cervical into a uretero-vaginal fistula are no longer necessary since Witzel's method has proved satisfactory for all cases of the former except the rare ones accessible through the vagina.

Wiener Klinische Wochenschrift, August 17.

Sensibility of Transplanted Skin Flaps. E. STRANSKY.—The degree of sensibility is usually in inverse proportion to the size of the flap, and is least around the edges, where the regenerative processes destroy the nerve terminals. As the nerves in the new region grow into the terminals in the flap, these transfer their allegiance and serve the newcomers as terminals, although in respect to tactile sensation at least, they seem to retain the characteristic of the mother region. The points sensitive to pain do not coincide with the points of maximum tactile sensation nor of temperature. Tactile sensation appears first, followed in turn by pain and temperature sensation. Stransky is inclined to believe that the specific nature of the sensation transmitted is due to a sort of selection among the stimulations received. He noted a duality in the sensation in some cases; slight pressure felt through the stem flap in the mother region, but harder pressure, felt in the underlying region, but failed to find any such phenomenon in flaps without a stem.

Experimental Stimulation of the Cortex After Dividing Part of the Central Nervous System, to Throw Light on Cortical Epilepsy. H. E. HERRING.—Experiments on twenty-seven dogs and twenty monkeys dividing the pyramidal tracts, etc., demonstrated that the nerves which produce contraction in the muscles also relax them. It was impossible to find any inhibiting tracts—like the heart-inhibiting vagus fibers, for

instance—or inhibiting centers. Neither was it possible to find any specific routes for the transmission of clonic contractions; all the corticofugal nerve-tracts capable of producing movements can also produce the cortical clonic contractions, but all are not equally excitable; the pyramidal tracts transmit the impulse to clonic contraction relatively much more readily than the others. He found that in monkeys the pyramidal tract plays a more important part than in dogs, in isolated movements of the contralateral extremities—in men still more than in monkeys. The dog, on the other hand, possesses a contralateral tract transmitting impulses for isolated movements comparatively readily, while in the monkey this tract only functionates, associated with the homolateral tract, and is difficult to excite. The homolateral tract in the monkey has a much more detailed function and is more readily excited than in the dog.

St. Petersburger Medicinische Wochenschrift, August 5 and 12.

Abdominal Fat Necrosis. TRUHAUT.—The acute affection characterized by hemorrhages in the pancreas, fat necrosis of the gland and surrounding tissues, with patches in the mesentery, omentum and peritoneum, and the omentum bursa filled with a septic chocolate fluid, retained if Winslow's foramen is closed by adhesions, if not, disseminated and producing abscesses in or outside of the peritoneum, first described by Balsler, is ascribed by some to a microbian origin, but Truhart is confident that it is due to chemical action by the steapsin—the fat-decomposing enzyme of the pancreas—destructively in contact with the abdominal fat tissue. He proves this assumption by a number of facts derived from experimentation and clinical experience, both personal and collected in literature, some equivalent to experiments in *hominie vivo*. The fat necrosis is never an idiopathic disease but is merely a symptom, a manifestation of an existing affection of the pancreas. It affects well-nourished persons with a tendency to be fat, usually in the midst of perfect health, commencing suddenly with intense pain in the epigastrium, vomiting, constipation or diarrhea and collapse, terminating fatally in a few hours in some cases. (See Scott's observation, JOURNAL, xxxii, p. 882.) In the subacute, more chronic cases, an important sign is a tumor-like distension of the upper abdomen, extending from the left hypochondrium to the left lumbar region. In 20 per cent. of the 100 observations of "Balsler's disease" collected the symptoms simulated ileus to such an extent that the abdomen was opened and closed, the operator no wiser than before. It was correctly diagnosed *in vivo* only seven times (Körte 4 in 5; Fitz, Halsted and Atkinson, 1 each); two of these cases were successfully operated on. Diabetes appeared 1½ years later in one. Prognosis is grave, although spontaneous recovery has occurred three times after expulsion of quantities of necrosed fat tissue and pancreatic substance per anum. Truhart suggests that even slight gastroduodenal catarrh in persons with a tendency to obesity should be treated with especial care to prevent the extension of the lesions into the pancreas, and general arteriosclerosis with other hygienic and local prophylactic measures, milk diet, etc. Reviewing 1000 observations of affections of the pancreas on record, he notes that 10 per cent. are mentioned as accompanied by more or less abdominal fat necrosis.

Behavior of the Uterus After Extirpation of Both Ovaries and Their Transplantation to Another Point in the Abdominal Cavity. H. RUBINSTEIN.—Various theories have been advanced to account for the atrophy of the uterus after extirpation of the ovaries, some assuming a nervous connection between them, a trophic dependence of the uterus upon the ovaries, etc. The theory that explains it as due to an "internal secretion" by the latter, indispensable to the life of the former, has received strong confirmation by the experiments described in this preliminary communication, in which both ovaries in rabbits were extirpated and replanted in another part of the abdominal cavity remote from the uterus. If the ovaries then atrophied, the uterus atrophied also, but if the ovaries took root in their new home and continued their functions, the uterus remained normal in every instance, and some of the rabbits had several litters afterward. Clinical facts also confirm this assumption; Curatola and Tarulli's statements that the metabolism in castrated animals is very different from that of uncastrated animals; the success of ovariin, and of castration for osteomalacia, etc., all tend to establish that the ovaries have an important function besides the genital.

Gazetta degli Ospedali e delle Cliniche (Milan), August 6 and 13.

Diagnostic Value of Kernig's Sign. A. CIPOLLINA.—Netter found this sign in 90 per cent. of his cases of meningitis, but Cipollina missed it in some cases of severe meningitis and has found it in other affections without meningitic symptoms or lesions. He notes the fact that when it is absent the meningitis is nearly always of tubercular origin. Attempts to produce it experimentally failed absolutely. He recommends it as an indication of great value, although not infallible.

Protecting Action of the Lungs. C. CAFFARO.—A series of experiments on animals is described in detail, which confirm the assumption that the lungs have a decided protecting action in respect to toxins, and that it is due to the living lung, and not merely to the living tissue of the non-respiring lung, but to the respiratory function of the living lung.

Capacity of the Red Corpuscles for Hemoglobin. A. RIVA.—In studying the physiopathology of chlorosis, radiography has confirmed the hypoplasia of the blood-forming organs noted by many in this disease, showing the predominance of the bone tissue. The most important point in this communication is the announcement that in chlorosis the capacity of the red corpuscle for hemoglobin is reduced. The number of red corpuscles produced may not vary much from normal; Riva has frequently observed in pure primary chlorosis that the number of erythrocytes were scarcely inferior and occasionally superior to normal. But they are delivered to the circulation with certain inherent peculiar biochemical differences from normal, which interfere with the normal formation and accumulation of hemoglobin, and to this he ascribes the essence of chlorosis, although this factor may be accompanied by hypoglobulia, poikilocytosis, etc. The cytogenic and hemoglobinogenic functions of the red corpuscle are quite distinct, and correspond to different phases in its life, as it is born colorless and gradually accumulates the hemoglobin in its stroma, except when this function is compromised. He also ascribes to this reduced capacity of the corpuscle the inefficacy of preparations of organic iron. The small amount and the stability of the iron render it impossible for the chlorotic and impotent corpuscle to derive any benefit from it, while preparations of inorganic iron are utilized to a remarkable extent.

Havana Medica, August.

Tropical Anemia and Its Relation to Malarial Infection.

A. PLEHN.—The sallowness and anemia noticed in persons in malarial localities, even in the absence of or previous to malarial manifestations, is explained by Plehn as due to the presence of certain granules in the red corpuscles, which he considers the fundamental forms of the malarial parasite, living possibly, months and years in the red corpuscles without producing any symptoms except more or less anemia, until circumstances arise that favor their development into the plasmodium, and consequent pronounced malarial infection. When evidences of anemia and a diminished amount of hemoglobin appear, if a drop of the blood on a cover-glass is treated with alcohol and hematoxylin, album and eosin (Ehrlich), dots and spots of dark blue will appear in some of the red corpuscles, usually round and grouped in chains of two or more, about 1/3 μ in diameter. They are some times noted also in the plasma, after destruction of the red corpuscles. These granules disappear completely when the anemia passes into acute malarial infection, especially during hematocrit bilious fever, to reappear during convalescence. He has noted them in Camarones, in the Roman Campagna, in sailors after voyages in malarial latitudes, etc. The mosquito can not be the only means of contagion in Camarones as there are comparatively few insects there, and the crescent forms of the plasmodium are extremely rare. (From Rev. de Med. y Cir. Practs.)

Significance of Melanin in the Blood Plasma in Malarial Infection. E. EDELMANN.—After establishing that the melanin found in the blood is not a product of the plasmodium, but is derived from the hematin, Edelmann states that during an attack, when the blood is loaded with malarial parasites, and the fever is destroying the red corpuscles, the blood will be found to contain numbers of living and dead plasmodia and melanin free and enclosed in the leucocytes. But if the blood is examined after the attack no parasites will be found nor any leucocytes containing melanin. The question what has become of them? He answers by asserting that they have all been imprisoned in the spleen, where the normal number of lymph-cells has been multiplied to protect the organism from the invasion of the parasite.

Societies.

COMING MEETINGS.

American Association of Military Surgeons of the United States, Kansas City, Mo., September 27-29.

American Association of Obstetricians and Gynecologists, Indianapolis, Ind., September 19-21.

American Electro-Therapeutic Association, Washington, D. C., September 19.

Medical Society of the State of Pennsylvania, Wilkesbarre, September 18-20.

Medical Society of the Missouri Valley, Council Bluffs, Iowa, September 21.

Venango Medical Society.—This Society will hold its next monthly meeting at Oil City, Pa., September 19.

Bradford County Medical Society.—This Pennsylvania Society held its fiftieth anniversary banquet at Towanda, Pa., September 12.

Lancaster City and County Medical Society.—This Society held its regular meeting at Lancaster, Pa., September 5, when three members were elected.

Miami and Shelby County Medical Societies.—A joint meeting of these two societies was held at Piqua, Ohio, September 7. These meetings are held quarterly.

Calhoun County Medical Association.—This Association met in Marshall, Mich., September 5. It was decided to hold the next meeting in Battle Creek, December 12.

American Association of Military Surgeons.—This Association will hold an open session at their coming meeting at Kansas City, on the night of September 27.

Tri State Medical Society.—The eleventh annual meeting of the Tri-State Medical Society of Alabama, Georgia and Tennessee will be held in Chattanooga, Tenn., October 24-26. Those desiring to read papers should send titles to Dr. Frank H. Smith, Chattanooga, Tenn.

McLean County Medical Association.—The regular monthly meeting of this Association was held at Bloomington, Ill., September 7. Dr. Nushbaum presented a very interesting paper on "The History and Origin of Johns Hopkins University and Hospital." The Association proposes issuing a booklet containing the names of its members, with a brief sketch of each, and the names of all deceased members, from its organization.

International Congresses in Paris in 1900.—July 23-28, International Congress of Medical Ethics; July 27-29, International Congress of the Medical Press; August 2-9, Thirteenth International Medical Congress; August 2-9, Fourth International Congress of Dermatology; August 10-17, Tenth International Congress of Hygiene and Demography; August 12-15, International Congress of Hypnotism.

Conference of Michigan Health Officers.—The important meeting of health officials in Michigan, the date for which was not fixed at time of first announcement, will be held at Grand Rapids, Oct. 26 and 27, 1899, and the conference will probably be one of the most instructive and useful ones ever held in Michigan. Besides the members of the State Board of Health, other prominent sanitarians, of national reputation, will be present.

Mississippi Valley Medical Association.—The twenty-fifth annual meeting of this Association will be held in Chicago, October 3, 4, 5 and 6. Dr. H. N. Moyer, Chicago, is chairman of the committee on arrangements. The officers are as follows: President, Duncan E.ve, Nashville, Tenn.; First Vice-President, A. J. Ochsner, Chicago; Second Vice-President, J. C. Morfit, St. Louis; Secretary, Henry E. Tulcy, Louisville, Ky.; Treasurer, Dudley A. Reynolds, Louisville, Ky.

California Academy of Medicine.

August Meeting.

TABES WITH UNUSUAL SYMPTOMS.

DR. PHILIP KING BROWN presented, for the consideration of the Academy, two cases of tabes with unusual symptoms.

CASE 1.—Mrs. S., aged 44½ years, was first seen in May, 1899. She was married at the age of 18½ years, and subse-

quently gave birth to a normal child, still living and well. Three miscarriages followed, one at six weeks, another at six months and the last at three months; she has not been pregnant since. At the age of 19½, following the birth of the first child, she had what was called "ulceration of the womb;" this was treated with blue vitriol, and cured. She had no further trouble from this source, nor has she ever had any headache, eruption or sore throat, save at one time, when in New York, when she had headache, eruption, and other symptoms, which were said to have been caused by sewer-gas poisoning. At the age of 21 she had an attack of pleurisy, and sixteen years ago she suffered from very severe neuralgic pains in the left hip, which seemed to be confined to the joint, and lasted for five weeks, with occasional brief intermissions.

At the age of 33 she first had dyspepsia; distress, accompanied by a great deal of gas, following everything eaten. This persisted for two years, and was followed by a period of three years when she was well and comfortable, complaining of no physical ailments. At the end of this period of rest, nausea first made its appearance, lasting all day for a time after its advent, but latterly being present only in the early morning hours. After vomiting, relief is felt for the rest of the day. When the nausea appears during the day, if she can eat and then immediately lie down, she experiences relief from the distress. For the past four or five years she has had occasional "girdle sensation." The sharp neuralgic pain which appeared in the right hip sixteen years ago has returned from time to time since that date; it is always referred to the same location, though at times the pain shoots down the right leg. In September, 1897, the pain appeared in the right heel; it was also neuralgic in character, and would last all day, with sharp exacerbations about every ten minutes. In February, 1897, she first noticed some dizziness, persisting day and night, and worse when lying down. In March, 1897, while in a condition of fair health and comparative ease, the patient awoke one morning with the right pupil dilated; it remained dilated three days, when she applied to Dr. Martin for relief. He instilled drops which contracted the pupil; it then remained contracted for three months, in spite of all efforts to dilate it. The left pupil then suddenly dilated, and after two days slowly contracted to the present size; both pupils have remained contracted, as at present, ever since. Dr. Martin gave her potassium iodid and mercury. She later consulted Dr. Barkan, who gave her potassium iodid, 30 grains three times a day. She next consulted Dr. Hirschfelder, who prescribed 300 drops of a 50 per cent. solution of potassium iodid, three times a day, and also gave her thirty-six inunctions of mercury. With the onset of the trouble in the left eye, the patient noticed numbness in the right foot and the left heel, both of which conditions have persisted since then, never disappearing, though at times becoming somewhat better.

The record of the patient, made two years ago and filed in Dr. Barkan's clinic, is as follows: "The patient has diplopia in both eyes, especially marked when she looked down; there is paralysis of all the muscles of the eyes except the external recti; ptosis is marked; the discs are normal." She complained of vertigo and could not stand with the eyes closed nor walk a chalk line; the hearing was normal. Some anesthesia was noted about the eyes, particularly above them.

She has never been constipated, but on the contrary had occasional attacks of diarrhea, coming on without apparent cause, and lasting for four or five days; these attacks have been noticed at times for a period of between four and five years. For six years past, she has been subject to occasional laryngeal crises, and pharyngeal crises have been of occasional occurrence for about the same time. During the pharyngeal crises she is unable to swallow while sitting up, but is able to do so, with some effort, when lying down. These crises recur every few months. In May, 1899, she had for the first time a cardiac crisis, the pain strongly resembling angina, lasting for two days and being somewhat paroxysmal in character. It was for the pain in the region of the heart that the patient called in the services of Dr. Brown, who then first saw the patient.

His notes, taken at that time, show the patient to be a small woman, fairly well nourished, with no signs of eruption on the body, no motor paralysis and no anesthesia of the chest on objective examination. The Argyll-Robertson pupils are present

and the Romberg symptom is marked; the patellar reflexes are greatly exaggerated but the achilles and plantar reflexes are abolished. The Fränkel sign is wanting. Examination shows the heart to be physically normal; no increased area, sounds normal, and no arteriosclerosis. The urine was normal and the stools showed the presence of much mucus. She was placed on a treatment of 20 grains of potassium iodid three times a day, together with inunctions of mercury. Bimiodid of mercury was later substituted for the inunctions. Up to August 5, when last examined, the chest showed no anesthesia, though an area of partial anesthesia, about half an inch wide, and extending down the inner side of the arms and forearms, was noticed; this is somewhat variable, but on the whole, persistent.

The stomach was frequently tested with the following result: Normally no hydrochloric nor no lactic acid could be detected. The vomited material was slightly alkaline, and showed neither hydrochloric nor lactic acid. After a test breakfast, following an attack of vomiting and hence when the stomach was otherwise empty, the result showed a faint reaction to litmus, no hydrochloric acid and a large lactic acid acidity. The stomach contents have been examined many times, but on no occasion has any trace of hydrochloric acid been found, and this in spite of all effort to stimulate secretion. A fairly well defined girdle sensation has been present for some time previous to my examination.

The patient was presented, and the various symptoms demonstrated. The Argyll-Robertson pupil was marked; the knee-jerks were very evidently exaggerated, but the amount of inco-ordination was markedly small. Difficulty was evidenced in standing with the eyes closed and in walking a chalk line.

Dr. Brown said: The case is reported for the reason that it seems a clear case of tabes, presenting some very rare and unusual symptoms. The knee-jerk is exaggerated, instead of being abolished, and this condition is extremely rare. The nature and occurrence of the various crises, too, is rather rare and unusual, and the amount of inco-ordination is much less than one would expect. The patient has the tabetic jaw, all the teeth having suddenly fallen out some time ago. While this woman does not present a perfectly clear, classical picture of tabes, there are present so many of the distinctive characteristics of that affection that I feel justified in classing the case as one of tabes, with unusual symptoms.

Another case came within my notice in July, it also presenting many symptoms of tabes, while at the same time many of the conditions present were unusual for that affection. The history obtained from the patient is as follows:

CASE 2.—Mrs. H., aged 45 years, for the past four years has had attacks of pain in the region of the angle of the scapulae, lasting continuously day and night for two weeks at a time. Her past history is as follows: She was a strong, healthy woman up to the commencement of the pains mentioned, about four years ago. She has had several miscarriages, one fifteen years ago, at three months, and one two years ago, at six months; she has had several children, the oldest being 17 and the youngest 8 years old. One child died a year ago, at the age of 3 years; the patient had pains in the back three months before this child was born. She has had no headache, no sore throat; she has lost in weight in the past four years, falling from 145 to 95 pounds; much of her hair has fallen out during this time, but there is no history of other trophic disturbances. An eruption appeared on the body about six years ago, following the birth of a child, which is still living. The patient has not menstruated for the past two years. Four years ago, at the onset of the present trouble, attacks of nausea made their appearance and have been of daily occurrence since that time. The pain in the back is frequently relieved by vomiting; she has never vomited blood nor coffee-ground material. The pain in the back seems to be worse after taking food and is aggravated by bathing.

Examination shows the right pupil to be more dilated than the left and to react more quickly to light stimulus and accommodation. The knee-jerks are abolished; inco-ordination is much more marked in the upper than in the lower extremities; it is slight in the legs. Anesthesia is strongly marked over the intermammary region. The anesthetic area is sharply defined, extends from nipple to nipple, and is about 5.5 cm. in

width. The patient is very constipated and has been so since the beginning of the present illness. For the past three or four months the bladder has been irritable. The epitrochlear, cervical and inguinal glands are all enlarged. The urine is pale, acid, sp. g. 1.020, shows a trace of albumin with hyaline and granular casts. Justus' test is negative. It was attempted, on the statement of the patient that she had had no inunctions and, so far as she knew, no mercuric treatment. On the feet, especially the left foot, are found areas of irregular anesthesia, not corresponding to any nerve areas, and not constant. The speech is slow and at times slightly thick; patient states that this is always so. She is an exceedingly nervous woman, and seems not to be altogether well balanced mentally.

This woman has consulted a large number of physicians and has not remained under the care of any one of them long enough to demonstrate the result of any one line of treatment. Dr. Moffitt saw the patient some time ago, and perhaps he will give us the benefit of his findings at that time.

DR. HEBBERT C. MOFFITT said: "I saw this patient in February of the present year. I gave her prescriptions for potassium iodid and mercury, but she did not again consult me. At that time she gave me a history that differs materially from the history subsequently given to Dr. Brown and just reported by him. What I gathered from her was substantiated and added to by her husband, who called upon me the day following her visit to me. She told me that she had had the abortions induced and that her trouble dated from the last one which she had successfully attempted. She also said that the eruption referred to as following the birth of a child had appeared on the child and not on herself. The knee-jerks were present at the time of my examination, the left one being somewhat livelier than the right. There was then no anesthesia on the chest, but there was analgesia on the back. The inco-ordination seemed to be more of the nature of a muscular paralysis than anything else, and I noticed some wasting of the muscles on the left side. There were no symptoms, of any particular importance, and I thought the case one of cerebrospinal syphilis rather than tabes. There was also a large element of hysteria. The symptoms of which she spoke to me, and the only ones which I elicited, were the pupils, the analgesia and the bladder affection; the husband spoke of lightning-like pains; there was nothing of the nature of the girdle sensation at that time. It seems to me that the knee-jerks disappeared too rapidly for it to be a case of tabes. The onset, too, was rather sudden, and while there is nausea, there does not seem to be any definite crisis."

DR. BROWN did not agree with Dr. Moffitt, but thought it a case of tabes with rather unusual history and symptoms. The tabetic lesions would explain the symptoms and conditions as presented, and such diagnosis seemed more probable than cerebrospinal syphilis. The cases were reported to the Academy. Dr. Brown said, with the hope that they would draw attention to a by-no-means small class of cases that pass from one physician to another, the actual condition not often being diagnosed, on account of the number of symptoms and their being masked to a greater or less extent.

DR. DOUGLASS W. MONTGOMERY said that in mentioning the fact that many cases do wander from one doctor to another, Dr. Brown had brought to his recollection an instance in point, and one akin to the cases reported. Dr. Montgomery said: "The history of the case, as I remember it, was about as follows: A man consulted me one day some few years ago, giving a history of nausea and vomiting which had persisted for a long time, recurring at intervals and occasionally sufficiently severe to completely prostrate him. He had lost considerable flesh as a result of these attacks of nausea and vomiting. In his search for relief he had consulted a number of doctors, various diagnoses and opinions having been rendered by the gentlemen consulted. One opinion was to the effect that he suffered from an overfilling of the gall-bladder, which then emptied into the stomach, thus producing the nausea. He was sitting very near to me, at my right, as I was taking the notes of his case, when suddenly he clapped his hand upon his thigh and exclaimed 'there! Sometimes I have sudden pains, just like that!' referring to a pain in his leg which had very suddenly appeared. I was at once aroused, looked at his eyes, found the Argyll-Robertson pupil, and then extracted a fairly good history and picture of tabes. The knee-jerks were absent, he could not

stand with the eyes closed, and he could not walk a chalk line. The sudden lightning-like pains had been in evidence for some time past. He was seen by Drs. Newmark and Sherman, who both agreed as to the diagnosis. I told him what the trouble was, that the nausea and vomiting were a symptom and would probably disappear after a time. Subsequently, he had quite an adventurous life. He was trephined by one man, on account of an old injury to the head, he having been shot many years before. Later he submitted to a laparotomy for the purpose of examining the liver and stomach. When I last heard of him he was somewhat improved, for the stomach crises had not occurred for quite an interval. This man's history is certainly appropos of what Dr. Brown said as to the many cases going about from doctor to doctor with the true cause of the trouble not understood or made out."

Dr. HARRY M. SHERMAN said: "I saw this patient with Dr. Montgomery, and I think there can be no question as to the fact that the man had tabs. He had been frequently exposed to syphilitic infection, though I do not remember whether a history of syphilis was obtained from him. A rather curious fact in connection occurred in my own experience. I was treating a child of this man for what I supposed was hip-joint disease. But the joint trouble improved so rapidly that I was forced to abandon the diagnosis. Very shortly after the child got well and left my hands, I learned of the syphilitic trouble with the father and rather concluded that the hip-joint affection was the result of syphilis. A short time afterward I treated a child for spinal disease; what I thought was tuberculosis of the spine. He did very badly, much to my disappointment, and finally left me. In speaking of the case to Dr. Montgomery, somewhat later, I learned that the father of this second child was a syphilitic, and the conclusion that here too the trouble may have been of syphilitic origin was forced upon me. These two cases form a distinct class in my mind. In both cases the diagnosis at first apparently clear, had to be given up; and in both cases I later learned that the father was syphilitic and had been so for years."

PLASTER-OF-PARIS INJECTIONS TO LOCATE FISTULA

Dr. J. F. McCONE sent a communication which was read, as Dr. McCone was unfortunately prevented from being present himself and presenting the matter in question in person. The communication set forth what Dr. McCone thought to be a new method of surgical procedure, and one which certainly was original with him. The suggestion of Dr. McCone was that, ischio-rectal fistule, the fistulous tracts and canals be injected with soft dental plaster-of-paris, that it be allowed to harden, and that the fistula and its ramifications could then be more easily and effectually dissected out, leaving a clean fresh wound which would heal by first intention. He had employed the method in one case with entire satisfaction and requested that it be tried by other members of the Academy and the results considered. This novel method of locating fistulous ramifications was discussed to some length.

Dr. DUDLEY TAIT, who at the request of the Chair read Dr. McCone's communication, thought that in its present shape the subject was not in the best light for discussion; Dr. McCone had not entered sufficiently into the special feature he advocated, and the previous treatment of the case reported was decidedly open to criticism. He would suggest that it be referred back to Dr. McCone for his revision and presentation at a future meeting.

Dr. MONTGOMERY, the president, stated that it was at his personal request that Dr. McCone had sent in the communication read. He had requested the doctor to do so in order to secure a record of publication of the method employed, which seemed to be original, and thus not run the chance of the loss of priority of an improved procedure.

Dr. PHILIP KING BROWN was inclined to doubt the possibility of injecting all the ramifications of a fistula with the plaster, for the reason that they would be, in all probability, already filled with debris, broken-down tissue, etc., and hence the plaster would not penetrate the canals far enough and well enough to be of any unusual value. He also called attention to the fact that many of these sinuses were of tuberculous origin, and such being the fact, in any given case, it would not be possible to remove all the tissue involved, even should the plaster penetrate all the sinuses. The tuberculous involvement would be

more extensive than the sinus. If sufficient force were employed to inject the sinuses fully, he was of the opinion that damage could result.

Dr. HERBERT C. MOFFITT called attention to the fact that forcing the plaster into the sinuses by pressure would possibly induce more extensive septic infection through the forcing of the septic germs into the surrounding and healthy tissue where absorption would be rapid, perhaps resulting in a general infection.

Dr. TAIT suggested that the plaster might penetrate, under the pressure employed, tissue not diseased, and that hence a greater amount of tissue than necessary might be removed in the subsequent operation. He referred to the fact that the simple excision of fistulous canals was not at all a new procedure; that for a long time it had been a recognized surgical practice to treat fistula by complete excision, the wound healing by first intention.

Dr. HARRY M. SHERMAN spoke of the injection of arteries with plaster of paris, in which process the force required to completely inject even the smallest arterioles was not great. He thought that a fistula could be as easily injected, the secretions and debris that might be present in the canals offering little or no objection to the process. In considering the possibility of inducing a general infection, it must be remembered that fistulous canals are surrounded by walls of thickened tissue, often very dense, and that the small pressure required would scarcely force the disease germs into the healthy tissue surrounding the fistula's wall. There would also, in all probability, be a regurgitation of the contained material, the plaster solution being permitted to penetrate all the diverticula.

Dr. HAROLD BRUNN said that the method seemed to him to be a most unique method of dealing with a very troublesome condition. It is at best exceedingly difficult to locate all the diverticula and ramifications of a fistula. The method suggested seemed to give promise of making this somewhat easier, and while it might be open to objections, it certainly presented many excellent features and was well worth a trial.

CANCER OF THE OVARIES.

Dr. HAROLD BRUNN presented some specimens of cancer of the ovaries, with microscopic slides. The two ovaries, removed from one woman, showed very clearly the cancerous nature of the involvement. The right ovary had been the site of a large ovarian cyst, some thirteen pints of fluid contents having been drawn from it prior to removal. On the inner surface of this cyst wall were numerous nodular masses, from the size of a pea to masses larger than a hen's egg. Some of these masses were papular in nature, but most of them showed clearly the cancerous formation of the tumors. The left ovary of the same woman was purely cancerous; it was with difficulty dug out, together with another cancerous mass in the omentum.

To Remove Blood from Clothing.—Several years ago, while contemplating the removal of a large blood spot from my clothes, I recalled the action of hydrogen peroxid on albuminous substances during operations, and immediately applied it to the spot in question and was delighted to see the stain entirely removed. Since then I have used it many times and always with the same results. The earlier the peroxid is applied after the blood spot is received, the better the effects, but I have used it on spots more than a week old, and they were completely removed. It should be used in full strength, and, after oxidation has ceased, it should be wiped off and another application made. Several such trials may be necessary before the stain disappears, but the process may be hastened by rubbing with the finger or a cloth while oxidation is in progress. If hot water has been used, or anything which will coagulate the albumen, the peroxid will not remove the stain, but otherwise its action is all that could be desired. I have frequently removed spots from my shirt-front, collars, and cuffs, and after the place was dried there was no evidence of any soiling having occurred. Quite recently I removed a very large stain from the carpet, following an operation in my office. I may add that I have never seen clothing bleached by the peroxid during the removal of spots.—J. T. Rugh, in *Phila. Med. Jour.*, August 12.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance	\$ 5.00
Foreign Postage	2 00
Single Copies	10 Cents

In requesting change of address, give old as well as new location

Subscriptions may begin at any time and be sent to

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
No. 51 Market Street, Chicago, Illinois.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, 100 Washington St., Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting, of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

These new members of the Association should send their annual subscription direct to the Treasurer, Dr. Henry P. Newman.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the Editor, and all communications relative to the business of the JOURNAL, proof-sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 51 Market Street Chicago.

Original communications are accepted with the understanding that they are exclusively contributed to this JOURNAL.

SATURDAY, SEPTEMBER 16, 1899.

REED AND CARROLL'S REPLY TO SANARELLI.

As foretold in our editorial on "The Microbes of Yellow Fever," Sanarelli's remarkable attack on the bacteriologic technic of Reed and Carroll, who are stated to have claimed the close relationship of the bacillus *icteroides* to the bacillus of hog-cholera because of "some deplorable neglect of technical precautions in the laboratory;" did not long remain unanswered. In the *Medical News* of September 9, Drs. Reed and Carroll, fearing that silence on their part might be construed by the general medical public as an admission that they had followed faulty technical methods in their work, make a vigorous and, it seems to us, wholly successful defense of their methods in the investigation which led them to announce the rather startling view that the bacillus *icteroides* should be regarded as a variety of the hog-cholera bacillus. Reed and Carroll express full willingness to acknowledge that the cultures of two microorganisms might become mixed, by some oversight, in any laboratory, and if it can be proved that such is the case in this instance, they will hasten to admit their mistake. They then go on to show that they worked for seven months with a pure culture of Sanarelli's organism, obtained from the Pasteur Institute, before a culture of the hog-cholera was brought into their laboratory and that during this time, before there was any possible chance for any mixture to occur, they had frequently obtained focal necroses in the livers of guinea-pigs injected with Sanarelli's bacillus—focal necroses which Sanarelli states are "entirely specific for hog-cholera." They also remark that Dr. Theobald Smith, whose extensive work on hog-cholera is authoritative the

world over, on being told of some of the early results, stated it as his opinion that the bacillus *icteroides* would yet be placed in the hog-cholera group.

Reed and Carroll then take up one by one Sanarelli's criticisms of their work and find good reasons and abundant opportunities to suggest to their critic that he should follow the same advice he so willingly gives others, "and spend a brief time consulting the literature" on various subjects. It appears that Sanarelli has fallen into the error, and this error is not new, of confounding the bacillus of swine-plague with the bacillus of hog-cholera—two quite distinct organisms; furthermore, that Sanarelli lays bare an apparently astonishing ignorance of the wide-spread occurrence of focal necroses in many infections and intoxications, including their development in animals injected with the bacillus *icteroides*, which is also described by De Lacerda and Ramos and by Della Rovera, who thus contradict Sanarelli's statement that focal necroses never occur in the livers of animals so treated. Reed and Carroll consider extensively the question of fatty degeneration in the livers of dogs injected with bacillus *icteroides*, and show quite conclusively that the amount of fat produced is variable, depending on variations in the resistance of the animals rather than on the microbe used, the livers of some of the dogs injected with bacillus of hog cholera being markedly degenerated. They emphasize again the remarkable agglutinative power which yellow-fever serum exerts toward the hog-cholera bacillus and the remarkable similarity in the clinical symptoms and anatomic picture produced in dogs by bacillus *icteroides* and bacillus of hog cholera.

On the whole, Reed and Carroll have strengthened their position in holding the opinion that bacillus *icteroides* is a variety of the hog-cholera bacillus. Sanarelli's refuge to the supposed victimization of Reed and Carroll by some "gross and deplorable error" seemed from the first a decidedly weak point in his part of the controversy because the methods followed in the laboratories of the Army Medical Museum are above all suspicion. His aspersions on the scientific spirit of the workers in the laboratory are certainly nothing more nor less than contemptible.

ZOÖPHILISM AND DEGENERACY.

Undue love for animals (zoöphilism) such as so frequently finds expression in antivivisection fanaticism, has frequently been found associated with various forms of degeneracy and especially with its mental expressions in connection with suspicious and persecutory conceptions.

As the JOURNAL pointed out some time ago, the suspicious world-betterers whose cruelty marred the French Revolution were all of them zoöphilists whose love for animals contrasted markedly with their severities toward human beings. The fanatics who were guilty of such brutalities during the East Indian mutiny were intensely opposed to the taking of animal life. Very frequently

the suspicious ideas are especially extended toward blood relatives. The mother of Savage, the poet, who persecuted him with such malignity, was very fond of cats and lap-dogs. The fifth (or "wicked") Lord Byron, the immediate predecessor of the poet, was notorious for his dueling propensities, for his disregard of major and minor morality, for his cruelty toward his kin, and for his brutality toward his servants. Having built mock forts on a lake in his park, and put a fleet of toy gunboats on the water, he used to amuse himself with mock-fights of a naval character, the toy ship firing away at the forts, which returned the fire in gallant style. When he was weary of this ridiculous game, the old man used to lie on the ground and gossip with the crickets, whom he loved far more than his descendants. When the crickets were troublesome, he used to whip them with a wisp of hay. The crickets are said to have left the Abbey in a body as soon as their one friend of humankind was dead, and never to have returned thither. The same feature appears in the wife and daughters of Claude Bernard, the French physiologist. According to the recent life of Claude Bernard, by Sir Michael Foster, the physiologist married a woman of degenerate stock, descendant from the French aristocracy of the pre-Revolutionary epoch. This woman had suspicious and persecutory ideas of that systematized type which so often occurs in degenerates prior to the full development of paranoia. After making Bernard's life miserable, his wife took her daughters and left him, alleging as a reason his experiments in vivisection. One of the daughters carried her antivivisectionism so far as to interrupt physiologic lectures, and was arrested therefor more than once, but the offense was condoned because of the manifest mental disorder present in her. There was evidence to show that her zoöphilism took at times a sexually abnormal direction. In a will, which was subsequently modified by the court as in violation of the French laws governing wills, she left large sums for a hospital and asylum for dogs and cats.

Commenting on her procedures, the *Chicago Chronicle* remarks that on the theory of heredity, this daughter's performance reflects more suspicion on the father's sanity than anything he ever did himself. The usual but erroneous inference is drawn of the exclusive importance of the father in heredity while that of the mother is here entirely ignored. The *Chronicle* comments severely but logically anent the antivivisectionists. The curious thing about these pranks is that motive never seems to have any weight with them; it would not surprise one if they some day object to the study and destruction of bacteria as cruelty to animals. This erroneous view of bacteria—whose zoölogic position is not settled, whence the name "microbe"—has already been taken by zoöphilists in New York, Boston, Philadelphia and Chicago, who have denounced the experiments in this direction for the reason stated by the *Chronicle*.

In New York a curious inconsistency has occurred. Some years ago experiments in vivisection made by Spitzka, for the purpose of demonstrating the nosologic limitations of hydrophobia, were approved by the New York Society for the Prevention of Cruelty to Animals, on the ground that they tended to prevent cruelty to dogs wrongly suspected of having hydrophobia. Some thirteen years later the Society, having obtained the spinal cord of a dog which had bitten several people, refused to allow this cord to be used in Pasteur experiments for the purpose of allaying the fears of the persons bitten. Experiments in vivisection for the benefit of animals were praiseworthy, but the same experiments for the benefit of human beings were atrocious brutalities.

RENAL INSUFFICIENCY.

Recognition of the condition in which diseased kidneys are no longer capable of performing their function is a matter of great importance and interest for both physician and surgeon. For this purpose purely clinical evidence is insufficient; nor is it possible to reach a trustworthy conclusion from examination of the urine, or from a study of the bodily metabolism or of the constitution of the blood, while the determination of the latter would, besides, be attended with considerable difficulty. A more practicable and a more satisfactory method of gaining the desired information consists in a determination of the molecular concentration of the blood by ascertaining its freezing-point.

It has been found that the molecular concentration of human blood, as well as the blood of various animal species, is, as represented by the freezing-point, fairly constant under physiologic conditions, being between 0.56 and 0.58 C. lower than that of distilled water. This constancy is to be attributed largely to the activity of the kidneys, as the most important of the eliminative organs. In the event, however, of failure or insufficiency in the function of the kidneys the molecular concentration of the blood is increased and the freezing-point falls. The accuracy of this observation has been established both experimentally and clinically, and additional experimental evidence is furnished by Richter and Roth¹, who, as a result of their investigations, have arrived at the following conclusions: 1. The normal reduction of the freezing-point of rabbits' blood, as compared with distilled water, is a constant physiologic standard—0.56 C.—from which there may be slight variations—0.54 to 0.59 C. 2. When the activity of the kidneys is abolished by bilateral nephrectomy, and the products of nitrogenous metabolism are not eliminated, the molecular concentration of the blood is increased, in consequence of molecular retention, and the freezing-point of the blood falls. 3. Unilateral nephrectomy does not cause molecular retention in the blood, because the remaining (healthy) kidney assumes the functions of both organs. Molecular retention takes place, how-

¹ Berliner Klin. Woch., July 24, 31, 1899.

ever, if the remaining kidney is injured. 4. Nephritis due to poisons, bilateral and hematogenous origin, are characterized by molecular retention and consequently by more or less marked pathologic reduction in the freezing-point. The disturbance is greater and sets in earlier when the vascular apparatus of the kidney is principally affected or the nephritis is diffuse than when the tubular apparatus is in greater degree affected, but in all instances the reduction is proportionate to the intensity of the pathogenic factor and the degree of anatomic alteration. Mechanical obstruction of the urinary tubules by means of artificial infarcts also results in molecular retention and in corresponding reduction in the freezing-point of the blood. 5. Pathologic reduction in the freezing-point of the blood is induced by the retention of the products of nitrogenous metabolism, but not by that of sodium chlorid; the latter may even exhibit attenuation.

The existence of anemia or of anasarca may prevent the usual reduction in the freezing-point in the presence of molecular retention, and the phenomenon is not of so much importance in the diagnosis of renal disease as it is in formulating decisions as to the performance of nephrectomy in suitable cases.

"CHEAP JOHN" MEDICINE.

The medical profession has not been troubled in this country as much as in Great Britain, by competition of low-priced club practice, but we now and then see signs of its existence. In our large cities we have the possibly greater evil of dispensary abuses, and everywhere exists the cheap and nasty in quackery of every variety. To some form of this, we assume, refers the following quotation from a lay paper that has recently come to our notice: "It might have been supposed that the climax of low-priced medical treatment had been reached when patients could receive medical advice, with medicine, at the rate of \$5.00 a month, and later as low as \$1.00 a month, but it seems the bottom has not been touched. A medical institution advertises in the local papers to give the best physician's advice, consultation and examination and furnish medicines all for 50 cents." The lay journal goes on to say that the next step will probably be for newspapers and magazines to furnish subscribers with medical advice and medicine gratis, and then perhaps some one will go one better and throw in life insurance. It may be some little consolation to feel that this sort of fraud in time makes work for the true physician, but it is a melancholy one at best to the philanthropist. There is a great waste of pain and suffering generally in this world through the "cheap John" doctors.

PAINLESS CAPITAL PUNISHMENT.

A new proposal has been offered to lessen the sufferings of the unfortunate murderer who has to undergo the pangs of capital punishment. Instead of hanging, which has already been held as barbarous and has been abolished in New York, or electrocution, which it is claimed is not the same in its action on all persons and

therefore may even sometimes cause pain, it is now proposed, in a paper read before the American Association for the Advancement of Science, to carry out capital punishment by poisoning with hydrocyanic acid and under conditions that will make it entirely painless and unexpected. The convicted criminal is to be taken to the death-chamber, which is to be connected by pipes with retorts generating the vapor, and some night when he is peacefully sleeping, it is to be suddenly turned on and he will peacefully pass out of this mortal existence. The date is not to be fixed, but is to be at the discretion of the authorities, within certain limits, covering several months, so that it is presumed he will be spared the mental agony of expectation to a large extent. The proposition might go still further and leave him in ignorance of his conviction, but that does not seem to have been suggested. After all, it may be considered questionable whether any of the plans offered has any great advantage. Sudden death of any kind is likely to be comparatively painless, and the elimination of the element of expectancy is a rather dubious advantage. If capital punishment is deemed necessary, it is to some extent as an example and deterrent, as well as to eliminate harmful individuals, and it is doubtful whether it should be made attractive. The old public executions made popular heroes, the newer suprahuman methods may err also in another way.

IS CHILD HOMICIDE LEGALIZED?

The attorney-general of Illinois has lately rendered a decision that the courts ought not to confirm, or if they do, it will be time to correct their narrow interpretation by new and unequivocal legislation. A child aged 6 years, died in Douglas county under Christian Science treatment, and in reply to an inquiry from the state's attorney of the county the attorney-general rendered an official opinion that, according to the clause in the Medical Practice Act, "mental and spiritual" means are legalized and that the sections of the criminal code against willfully endangering the life of a child did not apply, since it was not done willfully, but in good faith. This is equivalent to saying that if the parents or others in charge of an infant are under any kind of an honest delusion that would make them sacrifice or endanger its life, the law gives it no protection. He does not even hint at the rational alternative—their seclusion in a lunatic asylum—probably recognizing the fact that such imbeciles are too numerous in these present days of popular voodooism to protect infant life in that way. While, as the *Chicago Tribune* says, according to our practice in this country, "a man or woman who has reached years of discretion" is supposed to be able to take care of himself or herself, it is no enlightened view of the law that applies the same construction of it to helpless infants, or children who can not act for themselves. If this opinion is to be the last word on the subject we may look for an extensive slaughter of the innocents, by the well-paid mercenaries of "Christian Science," "Dowieism," and other like fads. We had supposed that the premiums on murder were wiped out of the law, but according to this attorney-general we are having new ones enacted by statute. It can not be that he is right, and the opinion should be

regarded as only the individual utterance of a narrow technical official. The law certainly can not intend that the most helpless and the most deserving of our sympathy and care are to be denied its protection against bigotry and ignorance.

A POSSIBLE CHECK TO QUACKERY.

A careful study of Circular No. 12 of the Internal Revenue Department is suggestive of some possible checks to quackery under the present revenue laws. The object of the law is to tax all special proprietary, trademark, or patented medicines, druggists' popular nostrums, all "non-secret" remedies, all advertised cures, and all physicians' advertised prescriptions or medicines, the demand for which is created by post-office solicitation, as well as perfumery, etc. According to the attorney-general's opinion: "Any medicinal article will be held to be advertised on the package or otherwise as having any special claim to merit, or to any peculiar advantage in the mode of preparation, quality, use or effect, when any description of it, either on the package or otherwise, includes any statement to the effect that it has a special or peculiar merit or value over other like articles or articles of the same class; or when it has any word, phrase, or sentence, either in the title or formula, or otherwise, which indicates its superior merit over articles of its class." The repetition of the "or otherwise" after each specification of advertising in the above makes the opinion a very broad one in its practical application. It covers not only every printed claim, but the recommendations of street fakirs and counter prescribers, as well as the special remedies of the advertising quacks. Whether this will cover all the drugs used by advertising doctors is a question, but from the reported instructions to revenue collectors it appears possible that such might be the interpretation put upon it by the department. There are certainly evidences that a more rigid enforcement of the war tax on advertised and proprietary preparations is intended, and the result should be a salutary limitation of quackery. If these frauds are made generally liable to the jurisdiction of the federal courts, there will be a somewhat better chance for their restriction or extinction.

VARIATIONS IN CEREBROSPINAL PRESSURE IN ASSOCIATION WITH CONVULSIVE ATTACKS.

The epileptic attack has been attributed to various and even opposite influences, thus to both cerebral anemia and cerebral hypermia, local or general, to both increase and diminution in intracranial pressure, to accumulation and discharge of nervous energy, but no one explanation is entirely sufficient or satisfactory for all cases. Sometimes the one, sometimes the other influence appears to be effective or at least provocative. Having observed in two cases of traumatic porencephaly with epileptic convulsions that long-continued drainage of the lateral ventricle, which communicated with the porencephalic cyst, was attended with a cessation of the attacks, and a like result in a case of traumatic epilepsy, Koche¹ concluded that the increased pressure of the cerebrospinal fluid was of considerable influence in exciting the convulsive seizures, the drainage acting as a

regulator for sudden variations in pressure. Similar observations have been made by others, and Stadelmann² by means of lumbar puncture found the cerebrospinal pressure in epileptic attack to be 360 mm. of water-pressure. In a series of observations to determine the therapeutic utility of lumbar puncture with relation to the course of epileptic attacks, Nawratzki and Arndt³ first found the normal cerebrospinal pressure to be in the recumbent posture about 113 mm., and in the sitting posture 400 mm., these results corresponding closely with those obtained by other observers. In three cases of epilepsy the pressure was normal before the onset of the attacks, but at the height of the tonic stage of the paroxysm it increased enormously, fluctuating during the clonic stages, and becoming again normal at the conclusion of the paroxysm. It is, therefore, thought that the increased pressure is not a cause, but rather a result of the convulsion, the tonic spasm causing cessation of respiration, which leads to increased intrathoracic pressure and interferes with the return of blood to the heart. In consequence of this and of the contraction of the muscles of the neck and the compression of the blood-vessels stasis takes place in the veins of the head. Forced expiration, coughing, crying and the like, give rise to similar results. Even simple pressure on the abdomen was capable of inducing increased intracranial pressure. Quite analogous phenomena were observed in the convulsive seizures of hysterical and paralytic patients, although they were the more pronounced in cases of epilepsy.

THE LYMPHATIC CONSTITUTION IN IDIOPATHIC EPILEPSY.

Ohlmacher⁴, continuing his studies in the pathology of epilepsy, gives a general survey of 25 cases of epilepsy examined post-mortem, and elaborates still further his observations on the presence of the lymphatic constitution (*status lymphaticus*) in idiopathic epilepsy. He reports five additional—to three previously published—very carefully and ably studied cases of genuine grand mal which presented pronounced evidences of the lymphatic constitution. These five cases include the most typical examples of "idiopathic" epilepsy of nineteen epileptics examined post-mortem. All five met death suddenly and in a state of good general nutrition, resembling in these respects some of the features of the lymphatic constitution. Post-mortem, there was found a persistent thymus with all the evidences of lymphoid activity accompanied with a general lymphatic overgrowth and arterial hypoplasia. Three cases also showed the changes in the bones characteristic of old rickets, and in four there were evidences of morbid changes in the thyroid. From morphologic and clinical reasons, Ohlmacher suggests that there exists a certain relationship between genuine epilepsy and rickets, *celammpsia infantilis*, thymic asthma and thymic sudden death, tetany, and possibly exophthalmic goiter. As is now known, more or less well-marked and constant hyperplasia of the lymphatic tissues is found in all of these conditions, which are also

² Deutsche Med. Woch., 1897, p. 749; Mittheil. a. d. Grenzgeb. d. Med. u. Chir. 1897, p. 561.

³ Berliner Klin. Woch., 1899, p. 662.

⁴ Bulletin Ohio Hospital for Epileptics, 1898, I, Nos. 2 and 3.

¹ Deutsche Zft. f. Chir., Bd. xxxvi, H. 1, 1893.

more or less in touch with each other in many of their clinical manifestations. The exact relations between the anatomic changes in the lymphatic apparatus and the disease mentioned are as yet purely conjectural. In his remarks on this interesting phase of his subject, Ohlmacher seems to lean to the opinion that the neurotic affections mentioned are the result of autointoxications, or other conditions, departing from the changes in the lymphatic tissues. A more extended discussion of this topic from a different point of view would also be very desirable, namely, from the standpoint of the possible secondary nature of the changes in the lymphatic apparatus due, perchance, to the action of various substances present in epilepsy, exophthalmic goiter, etc. It does not appear that we are necessarily bound to assume that the lymphatic constitution must be regarded in the light of a direct or indirect cause of the strange diseases associated with it. Ohlmacher's studies are very interesting, valuable and suggestive, and it is to be hoped that the material and facilities of many other similar American institutions may be put to such good use as is now being made of them at the Ohio Hospital for Epileptics.

THE RIGHT TO DIE.

A presumably learned jurist, a law lecturer in Yale University, has, in an address recently delivered, emitted the opinion that it is wrong to prolong a life in hopeless misery by medical art. He says: "In civilized nations and particularly of late years, it has become the pride of many in the medical profession to prolong such lives at any cost of discomfort or pain to the sufferer or suspense or exhaustion to his family." He asks: "Is not this a misapplication of the healing art?" In other words, are not physicians interfering with a beneficent providence, which, if left to itself, would abbreviate suffering and really make life happier to the surviving? This address has been extensively noticed in the daily press and commented on by physicians, lawyers, and others, and it is satisfactory to see that the ethical instincts of our profession are so firmly upheld in nearly all the parts that medical men have taken in the discussion. One or two points, however, have been perhaps too much emphasized, viz., that we can not say when a disease is hopeless, and that the desire for life is universal. Every physician of any amount of practice must have repeatedly seen cases where the near fatal termination was as certain as a mathematical axiom and others where the desire for death was stronger than the love of life, to say nothing of the vast majority where disease has produced a mental apathy or indifference. In any case, the physician has no question as to his duty, and needs no such excuse to keep him to it. Doctors are not generally accused of being religious, but the ethics of our profession go parallel with the best Christian doctrine in this as in other matters. In only one case reported in the daily press has an alleged physician uttered sentiments in accord with those of the jurist referred to, and the report of his remarks reads like a criminal confession. He has, he says, in hopeless cases given chloroform at the patient's request to shorten his existence. "Suicide," he says, "is justifiable in many cases provided the suicide has no obli-

gations." He has advised suicide and specified the method, though he naively acknowledges he does not know that his advice has been seriously taken. This doctor may be safe in his own state, where the judge referred to presides in the higher courts, but his quoted remarks, if taken seriously, would make him liable to criminal proceedings in some sections of the country. They sound more like the reckless utterances of one who not only lacks principle but has times "when the wit is out," or when his desire to see his name in print overbalances any correct judgment he may possess. It is to be regretted that there is a physician whose ideas even, are based on such pagan principles as seems to be the case here.

TRANSMISSION OF BACILLUS OF TUBERCULOSIS THROUGH THE PLACENTA.

The number of observations definitely showing the transmission of the bacillus of tuberculosis from the mother to the fetus is very limited. Auché and Chamberlent¹ were able to collect 19 cases in which the demonstration of the transmission of bacilli from the mother to the fetus could be considered as satisfactory; to this number they add one of their own. In twelve of these cases there were no macroscopic or microscopic evidences of tuberculosis in the tissues of the fetus, the presence of the bacillus in the fetus having been demonstrated either by means of cover-slip preparations or by means of animal inoculations. In eight of the 20 cases definite histologic lesions were found in the organs of the fetus. This number, which excludes a number of imperfectly studied cases, allows the claim that the transmission of tuberculosis by way of the placenta is rare. The transmission is so much the more to be feared as the tuberculosis lesions of the mother develop rapidly and are widely disseminated. It has never been observed before the fifth month of pregnancy. In the cases where the placenta has been examined it has always been found tuberculous, as shown either by the aid of animal inoculations or by microscopic examination. It seems safe to conclude, therefore, that this tuberculosis of the placenta forms the first stage of the infection of the fetus, the bacilli becoming localized first in the placenta, whence they invade the fetal circulation. As noted, the tissues of the fetus may be infected by the germ of tuberculosis and not present any specific lesions, microscopically or macroscopically. The tuberculous lesions that have existed are most generally disseminated, occurring in all or nearly all of the organs. Rarely the lesions are definitely localized. In the disseminated lesions it is customary to find the bacilli in large numbers, sometimes in extraordinary amounts. In the case of Schmorl and Kockel, where the tuberculous changes in the fetus were localized in the suprarenal capsules, the bacilli were present in very small numbers. It would therefore seem that the fetal tissue cannot be regarded as a poor medium for the development of tuberculosis, and the hypothesis of the latent tuberculosis, as advanced by Baumgarten, and based on a contrary opinion, does not receive any support from the facts brought out by the study of these cases. In the personal observation of these authors an

¹ Arch. de Méd. Exp., 1896, xi, p. 321.

extensively tuberculous mother gave birth to a premature child, which died after about three weeks. The liver, the spleen and the lungs contained a large number of miliary tubercles; the peribronchial and mediastinal glands, and the glands at the hilus of the liver contained caseous tubercles, and the endocardium near the apex of the right ventricle was the seat of a tuberculous nodule about 1 mm. in diameter. This appears to be the first instance observed of a congenital tuberculous endocarditis.

OVERSUPPLY OF MEDICAL PRODUCTS.

Our English brethren are evidently suffering to as great an extent from an overabundance of ready-made medical preparations as we are. And the same determination to crowd the stuff down the throats of the physicians—figuratively speaking, of course—is as much in evidence on the other side as on this side of the Atlantic. Every week or two our English exchanges contain letters crying out against the evil of free samples, of traveling representatives of proprietary drug houses and other evidences of an oversupply of medical preparations. The last number of the *Medical Press and Circular* prints a communication which is unique in that it proposes a remedy. "I say that if a stop be not put to this"—the deluge of medical preparations—"the treatment of disease will be taken out of our hands altogether. The public come to know what is ordered and then proceed to order for themselves," is the way the writer puts it. His remedy is to have a body of experts who shall be appointed and paid by medical organizations. To this body should be entrusted the task of investigating, or superintending the investigation, of every new preparation brought out, and no physician should be allowed to prescribe anything until its precise value should be ascertained by this board. It is, he says truly, mere nonsense to allege that the busy practitioner can investigate for himself, and his certificate, consequently, can not be of the slightest value. While the suggestions sound Utopian and impracticable, and they are to a certain extent, nevertheless it seems as though some action should be taken whereby the physician could have some thing or some body, on which to depend. To make a sweeping assertion that all proprietary and patented products are fraudulent is just as absurd as to accept the say so of the manufacturers that all are good. A few of the newer products are valuable, for progress has been, and is being, made in materia medica and therapeutics, as well as in other branches of medicine. But so much fraud and commercialism is mixed up with this progress that the average physician is at sea. He is losing faith in testimonials, and his experience teaches him that he can not rely on what manufacturers state. These remarks refer not to the "proprietary" only, but to the synthetics, to the patented preparations. For all the fraud does not rest with the proprietaries any more than all the virtue with the patented products from the fatherland. If some one will rise up and tell us how to get rid of the difficulty he will confer a great blessing on a suffering profession. Our present condition is breeding therapeutic nihilism that is anything but pleasant to contemplate.

Medical News.

DR. L. BREISACHER of Detroit has assumed the medical directorship of the Ypsilanti Sanitarium.

DR. H. P. REICHE, Baltimore, while getting off a street-car, was thrown to the ground and was seriously, but probably not fatally, injured.

FOUR VOLUMES of the report of the Moscow International Congress are about completed, and the remaining three are expected to be ready by the end of the year.

ACCORDING to report, the Board of Health of Nanticoke, Pa., is much exercised over a case now considered to be leprosy. The patient is said to be an Assyrian.

A PARIS exchange mentions that "Bremount's Pride," one of the horses entered in the Autenil races, has been wearing a tracheotomy tube for some time, and won a prize of \$8000 soon after it was first inserted.

DR. J. ACKERMAN COLES, Newark, N. J., has presented to Jefferson Medical College, Philadelphia, a Carrara marble bust of William Harvey, by Horatio Stone; also a bronze medallion lifesize portrait of Abraham Coles, father of the donor, together with a number of other gifts of less value.

AN AUTOMOBILE ambulance is to be presented to St. Vincent's Hospital, New York City. It will be propelled by electricity and will be the first of its kind in the city. The donor's name has not been given.

TYPHOID FEVER has developed in and around the Guerin "fortress" in the Rue Chambroi, Paris. The accumulation of filth and disregard of all sanitary measures by Guerin and his friends are, of course, the cause of the outbreak.

AUGUSTA, ME., is suffering from an epidemic of diphtheria. At last reports seven houses were quarantined, and the inhabitants were considerably wrought up. Springfield, Mass., is also afflicted with the same disease, 37 cases having been already reported.

DR. J. J. SMITH of Chambersburg, Pa., while making investigations in regard to anthrax, which has prevailed in that section for some time, had the misfortune to inoculate himself with the disease. Within a few days an eruption appeared indicating its nature and several days later death ensued.

A RECENT fire in Apothecaries Island, St. Petersburg, destroyed the military drug factory, the chief magazine of military medical stores, whence army supplies were sent out to every part of the Russian empire. The loss, which can hardly be repaired for years, is estimated, in money value alone, at nearly \$3,000,000.

A MONTH'S imprisonment and a fine of \$200 have been imposed on the dealer in oils who frequented a Paris hospital, calling himself a retired navy medical officer and serving as assistant at times, as mentioned recently in the *JOURNAL*. He had also obtained several patients as a specialist in throat and ear troubles.

THE MEDICAL department of the University of Denver has been incorporated as the "Denver College of Medicine." The change of name carries with it no change in the relations heretofore existing between the University of Denver and its medical department, other than giving the Denver College of Medicine an independent legal existence.

AN EPIDEMIC of dysentery occurred during the month of August in the State Insane Asylum at Norristown, Pa. During the month there were sixty-six cases, six

of them among the attendants, and seventeen deaths. The disease was reported by the physician of the female department, and it is inferred that it was principally confined to that side of the institution.

DR. S. LEWIS ZIEGLER, of Philadelphia, who has been abroad for the past three months, has returned home. While in Holland he attended the Ophthalmological Congress, which recently met at Utrecht.

DRS. C. A. I. REED, Cincinnati, Bayard Holmes, Chicago, and Wm. Osler, Baltimore, are among those who have returned from Europe during the last week. The latter rented a cottage outside of London, where, with his wife and infant son, he spent most of the summer.

SOME TIME ago the subject of filters for the public schools of Philadelphia came up for discussion before the members of Councils. At the time it was believed that a satisfactory variety had been found, but new developments show that only three out of seven come up to the requirements, and so far none have been selected.

MANY MEMBERS of the Army Nurses' Association, which held its session in Philadelphia during the recent meeting of the G. A. R. were present from various sections of the country. At one of the meetings Miss Clara Barton was present and decorated each member with the insignia of the Order of The Red Cross Association.

TYPHOID FEVER is reported as particularly prevalent in Kentucky towns this fall, especially in those along the Ohio and Kentucky rivers. The health officer of Louisville is reported as saying that there are more cases in that city than he has ever known before, and circulars are being prepared to instruct the public in regard to the disease and its prevention.

A FOCUS of smallpox has been discovered, it is reported, in certain rural districts in Central Illinois, in which, as in the late epidemic in Northern Indiana, some of the local physicians apparently did not at first recognize the disease. In these days of general vaccination, when only modified varioloid is likely to occur, it is probable some cases escape detection, as seems to have been the case here.

REFERRING to the menaced invasion of Europe by the plague, one of the most atheistic, ultrascientific French periodicals remarks that the microbe is answering the question: "Who is my neighbor?" as it is teaching man that it is not a matter of indifference whether he has a neighbor at home or abroad who is poverty-stricken, filthy, immoral or diseased, as poverty, ignorance and filth breed cholera, bubonic plague and what not. The formula for the happiness of the human race, it adds, is in the hands of science, the new religion.

WAR HAS BEEN declared in Europe against rats and mice, as a preventive measure against the bubonic plague. The French Board of Public Health has issued a circular to shipowners requiring the screening of all openings by which rats can enter a vessel, and a protecting appliance fitted on each cable tying it up to the dock. Rats on board must be trapped or poisoned with the preparations sold for the purpose, and carcasses burned. Vessels must be disinfected with sulphurous acid in the haunts of the rats, and elsewhere with mercuric chlorid.

OWING to the intense heat and humidity which prevailed for several days in the city of Philadelphia during the recent G. A. R. parade, in one day 475 persons were treated, and on September 6 three deaths occurred. During the week of festivities all ambulances were kept busy constantly, and the hospitals were filled

to their utmost capacity. That more deaths did not occur was doubtless due to the extreme care exercised by the physicians appointed for the purpose, who had taken the precaution to have at convenient distances ambulances and patrol wagons to give relief in the shortest time possible.

THE THEORY that bacteria are indispensable to digestion has been laid to rest at last by Levin's research in the Arctic regions, reported in *Hygiea*, No. 2. He accompanied the Nathorst expedition and examined the intestines of various birds and animals killed. With the exception of one polar bear and two walruses, the intestines were found absolutely sterile, and in these only a few specimens of the bacillus coli were discovered. Bacteria were found in the water, one colony to 1 c.c., the number increasing with the distance from the surface. The air was found absolutely sterile. No colds nor catarrhs ever occurred among the men.

THE CONTRACT for additional dormitories for the University of Pennsylvania has been awarded, and within a few days ground will be broken preparatory to the erection of a large group of buildings for the accommodation of students. With this addition it is hoped to give the student those private advantages gained at places away from cities, and at the same time be in a position where they may be judiciously obtained. It is proposed to erect a line of buildings extending entirely around the old athletic field. The new dormitories will cost nearly \$1,000,000, and are to be finished by August 1, 1900.

REPORTS from Key West, Fla., show that 111 new cases of yellow fever with five deaths have occurred during the five days ending September 12. The total number of cases is 218; deaths, 12. One case was reported from Jackson, Miss., and there was a general exodus to higher altitudes. Quarantine has been instituted against Mississippi City, which reported 13 cases. The marine-hospital service reported one case at Port Tampa City, Fla. A. H. Doty, health officer of New York, has begun the serum treatment on two of the four cases taken from the steamship *Lampasas*. One of the Key West Refugees died at Swinburne Island, September 11.

THE LEPRO patient whose death we recorded last week, had been an inmate of the John Hopkins since April, 1897. She had lived in Alleghany City, Pa., and was supposed to have "scrofula" of six years' standing. Her disease was recognized as leprosy on her arrival in Baltimore. The Pennsylvania authorities refused to allow her to return, therefore the hospital was obliged to keep her. With regard to the origin of the disease, it was ascertained that when she was 15 years of age she went to Demerara, British Guiana, and remained there several years. It is supposed she contracted the disease there. The case at one time created much apprehension in the hospital, but as the patient was rigidly isolated, no fear is entertained that any other person has been infected.

JUDGING from the report issued by the State Board of Health of Pennsylvania, smallpox has by no means abated. The report says: "Since the disease was first reported in Bedford County in the month of November, 1898, it has made its appearance in 21 counties and more than 100 localities. The number of cases reported has been about 900, and the number of deaths 7. The fact that deaths have occurred is sufficient to exclude chicken-pox and impetigo contagiosa. The warning note issued by the State Board of Health some months in advance

of the invasion, pointing out the steady progress of the disease from Florida up along the coast, and calling especial attention to its mild character, might indeed have aroused their suspicions, but does not seem to have been generally regarded.

The *Chicago Tribune* is publishing a series of excellent articles under the caption "Nineteenth Century Passed in Review." The ninth in the series, published last Sunday, was entitled "Triumphs of Medicine," and was written by Dr. G. F. Butler. The paper is an excellent résumé of the progress of medicine during the century, and, with the illustrations, covers over two pages of the *Tribune*. We should imagine the article as couched in rather too technical language for the average lay reader, otherwise it is worthy of commendation, and certainly ought to help to enlighten those who read it, to the extent that they may see the difference between scientific medicine and ignorant and fanatical charlatanry.

A COMMITTEE on railway sanitation has been appointed by the Wisconsin State Board of Health, which has been giving the subject some special attention of late. This committee proposes to act, if possible, as advisor to the railroad officials, whose duty it is to be ready to receive suggestions as to methods that will improve the service and the safety on their lines. The resolutions under which the committee will act are as follows: That the board appoint a committee to confer with the railroad companies in the state and ask them to improve the sanitary conditions of their passenger cars in the following respects, namely: 1. To provide cuspidors containing disinfectants for all smoking cars and smoking rooms in sleeping cars. 2. To give more attention to disinfecting passenger coaches at the end of each run. 3. That better arrangements be made for the ventilation of passenger day coaches and sleeping cars." The board evidently does not mean to attempt too much, but will use its influence to improve, as far as possible, the sanitary risks of the traveling public.

Correspondence.

Compulsory Notification of Tuberculosis.

LANSING, MICH., Sept. 7, 1899.

To the Editor:—Referring to the paragraph on page 611, of your issue for Sept. 2, 1899, permit me to suggest that isolation of patients and placarding of premises need not follow notification; but notification is essential for any action by the people, that is by the state, for gaining any knowledge of the actual conditions and circumstances under which tuberculosis is spread, and it is for such purposes that the Michigan State Board of Health has taken action; and for the additional purpose of placing in the hands of persons who cough and of their friends some brief suggestions tending to teach the patient how to avoid re-infection and the spreading of the disease to others. Extensive observation at morgues in large cities has proved that even a large proportion of persons dead from other causes have recovered from tubercular disease of the lungs; this means that if a person has such disease in that part of the body only, recovery may reasonably be hoped for; but if the sputa are swallowed, tubercular disease of the bowels and general tuberculosis may result, and death is then probable. The interests of the patient as well as the interests of the public demand that the patient shall be informed of the nature of the disease, and how to avoid re-infection and the spread of the disease. In Michigan, if the patient is thus informed, he, or the householder, hotel-keeper, boarding-house

keeper, or tenant, is liable to a fine, and to imprisonment if the fine is not paid, if he or his physician does not report the fact of his disease to the local health officer; therefore, in order to protect his patient, or his household, from prosecution, the physician should report the case. And in Michigan, the law provides a small fee to the physician for every such report.

Every sanitarian knows that tuberculosis is spread by the bacilli, and, as pointed out on the same page (611) of your JOURNAL on which is the paragraph on notification, these are liable to be "deposited on the tonsil from the inspired air," and that this disease which causes most deaths is generally contracted by inhaling the germs of the disease. Therefore every person should know that there is danger in a room in which there is a coughing consumptive who does not scrupulously care for the sputa.

Every sanitarian knows that vaccination is almost a certain preventive for smallpox, and that if he is recently successfully vaccinated, as he should be, he is in no danger whatever in "being in a room with a case of smallpox." There should be no impropriety in putting before the public the exact truth on these subjects. Let us have notification of this most important disease, which is now known to sanitarians to be preventable, and which has been decreased by 11 per cent. in Michigan since the State Board of Health has been vigorously working for its restriction.

Very respectfully,

HENRY B. BAKER,

Secretary State Board of Health.

[If notification of cases of tuberculosis were simply for the purpose of obtaining data as to the disease, its spread and possible control, no one could object and every true physician would do what he can to aid in this endeavor. It is different, however, with compulsory and indiscriminating notification, and the Michigan law which requires every patient to be informed as to the nature of the disease and made liable to a fine or imprisonment for not reporting it to the local health officer, appears to us a very harsh and unnecessary one. We repeat, we do not think the time has come for such compulsory notification. The matter can be more safely left to the attending physician. As regards education of the public as to the needed precautions, it certainly should be done, but at the same time exaggeration of the dangers should be avoided. That this has not always been the case is shown by the proposition reported of the authorities in one city to prohibit public funerals of consumptives. We agree with Dr. Baker that there is no impropriety in putting before the public the exact truth on these subjects, but it should be carefully limited to that, and should not include the compulsory publication of the misfortunes of afflicted citizens.—Ed.]

London.

(From Our Regular Correspondent.)

LONDON, Aug. 26, 1899.

DANGERS IN MAKING PHOSPHORUS MATCHES.—Dr. Talbot, the medical officer of health for the "match-factory district" of East London, has just made a report on the phosphorus danger which is unexpectedly encouraging. He asserts that yellow phosphorus can be used in making matches with perfect safety, provided certain parts of the process are carried out practically in the open air. He bases this conclusion and change of view on his part on a visit recently made to a factory in his district where 500 hands are constantly employed, and yet where not a single death from necrosis has occurred in ten years, and only two mild cases of "phossy jaw." The secret lies in doing the mixing of the paste and the dipping of the matches on the roof of the factory, under little more than an awning to protect from the weather. The fumes escape so rapidly that no odor even is perceptible.

FEAR OF THE PLAGUE DIMINISHED.—The slight fear of a plague epidemic in England, fanned by the statements of certain "yellow" journals, seems to be rapidly subsiding, as the slowness of the spread of the disease, even in filthy Oporto in manifested. Great vigilance is being exercised by the Port of London Medical Officer, Dr. Collingwood, in the inspection of every Mediterranean and Oriental vessel coming up the Thames, but

so far, fortunately, not a single even suspicious case has been discovered. The plague bacillus actually needs dirt, and plenty of it, as a culture-medium, and can no more spread in its absence than a fish can live out of water. Clean and civilized communities, which means all Europe, outside of Russia, Spain, Portugal, and parts of Italy, have little to fear from it, even if a case be imported. The Portuguese, both lay and official, seem to be doing about what was to be expected—as little as possible—but other governments are taking the situation in hand and sending in experts and serum in self-defense, so that the epidemic seems likely to be “juggled.”

TYPHOID FROM SHELL-FISH.—An interesting instance of probable infection through eating shell-fish contaminated by sewage has just been reported from Exeter. A number of cases of typhoid have occurred within a few days of each other; on investigation, all were found to have been in an excursion party to Exmouth, where they had partaken of the local cockles uncooked. These cockles, it was further found, had been gathered on the bay mud-flats close to an outfall of sewage. As no other source of infection could be found, the connection is decidedly suggestive, to say the least, and the authorities of Exeter are justified in demanding the prohibition of any further sale of cockles from this bed.

A MEDDLESOME MIDWIFE.—A remarkably aggravated case of a midwife's ignorance and meddlesomeness has just come before a London coroner. An inquest was held on the body of an infant which had died in convulsions at three days of age. The cause was believed to be “moulding” of the head by the midwife. The good lady actually admitted that she “sometimes did press their little heads into shape a bit,” but denied doing so in this case.

Canada.

(From Our Regular Correspondent.)

TORONTO, ONT., Sept. 9, 1899.

CANADIAN ADDENDUM TO THE BRITISH PHARMACOPEIA.—A short time ago, Prof. J. G. Adami, as president of the Montreal Medico-Chirurgical Society, received a letter from Dr. Attfield, dated from the General Medical Council Office, England, with reference to the proposed Indian and Colonial Addendum to the British Pharmacopœia. Dr. Adami at once took the matter in hand and appointed a committee to deal with all suggestions emanating from Canadians along this line. This committee has sought and obtained statistics and information as to what non-official drugs, whether Canadian or otherwise, are most in demand. This information has been mostly obtained through the medium of responsible wholesale pharmaceutical houses. Acting also on instructions in Dr. Attfield's letter, they have indicated in their report the methods of preparation and administration of those preparations which have been found most serviceable. So far as suggested, the following are the preparations this committee would have incorporated in the addendum: Elixir simplex, emulsio olei morrhue, extractum apocyni liquidum, extractum buchu liquidum, extractum grindelie liquidum, extractum hyoseyami liquidum, extractum pruni virginianæ liquidum, extractum tritici liquidum, extractum senegæ liquidum, extractum sanguinariae liquidum, extractum viburni opuli liquidum, extractum viburni prunifolii liquidum, liquor thymolis compositum, oleum gaultheriæ, syrupus acidi hydriodici, syrupus ferri phosphatis compositus, syrupus hypophosphitum compositus, syrupus senegæ, syrupus ipecaeanhæ, tinctura arnicæ flores, tinctura jalapæ composita, tinctura opii deodorata, tinctura sanguinariae, ferri hypophosphis, hydrargyri iodidum flavum, syrupus hypophosphitum, ferri phosphas solubilis resina laricis, tinctura resina laricis, syrupus ferri iodidi. This draft report contains the information so far gathered and sifted.

HOSPITAL FOR INEBRIATES.—At the recent meeting of the Canadian Medical Association, the committee appointed at the

last meeting in Quebec City, Dr. James Thorburn, Toronto; Dr. J. G. Adami, Montreal, and Dr. W. S. Muir, Halifax, brought in a report endorsing a scheme for the establishment of a hospital for the treatment of confirmed drunkards in the province of Ontario. That scheme was outlined in the report of a similar committee which reported at the meeting of the Ontario Medical Association in June last, which advocated the appointment of an inspector of inebriate institutions by the Ontario government. This inspector is, of course, to be a qualified medical practitioner, who has made the medical treatment of inebriety a special study. After his appointment had been made, the inspector should organize in the city of Toronto, a hospital for the medical treatment of pauper inebriates of the more hopeful class, and in the other cities of the province, an inebriate department in the existing general hospitals. In the providing of this treatment, which was to be done in accordance with the tenets of legitimate medicine, alone, no “proprietary remedy” was to be used. Now that this scheme has received the unanimous approval and support of the two leading medical associations in this country, we may expect that the Ontario Government, which has endorsed the scheme, will at once take action on the lines indicated in the Ontario Medical Association's report, and then appoint an inspector to take the matter in charge. In a large measure, the credit is due to Dr. A. M. Roseburgh, Toronto, who now for many years has taken a deep interest in this question; and it was only a few months ago that he was commissioned by the Prisoner's Aid Association of Canada to visit institutions in the United States and also to interview specialists in Canada and the United States with a view of enabling him to formulate a plan for the economic treatment of pauper inebriates.

MCGILL'S NEW PROFESSOR.—The newly-appointed professor of mental diseases at McGill University, Dr. Thomas Joseph Workman Burgess, was born in Toronto in 1849, and was educated at Upper Canada College, where he received numerous prizes. He was graduated in medicine from Toronto University in 1870, winning the University silver medal and the Starr gold medal, and for a year acted as clinical assistant in the Toronto Asylum. In 1875 he became assistant superintendent to the London Asylum for Insane and in 1887 was transferred to the Asylum at Hamilton. In 1890, he was unanimously chosen from a large number of applicants, as medical superintendent of the Protestant Hospital for the Insane, at Verdun, P.Q., an appointment which he still retains. Dr. Burgess is a member of the Canadian Institute, Toronto; an honorary member of the Hamilton Association; a member of the American Medico-Psychological Association; a Fellow of the Royal Society of Canada; a member of the Torrey Botanical Club of New York, and a Fellow of the American Association for the Advancement of Science.

CHRISTIAN SCIENCE FOOLERY.—Some idea of the hold which this doctrine obtains on some mortals is well illustrated by the report of a case from western Ontario. At Benchville, five miles from the town of Woodstock, a woman, the leader of the faddists of that rural hamlet, lost her baby through her foolish conduct. When the child was first taken sick, the mother called no doctor, and as a result the infant rapidly succumbed to the illness. The mother, however, refused to believe that the child was dead, and said that the spirit had merely departed from it, so she locked herself in the room with the little corpse and prayed for a day and a night, when the neighbors ultimately broke into the room, took the child from her and gave it decent burial.

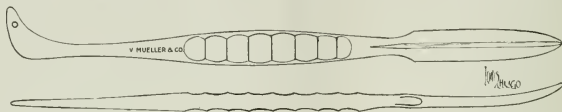
Significance of Nose Bleed as an Early Symptom of Softening of the Brain.—Kompe has observed five cases in which copious, repeated nose bleed was one of the first symptoms of encephalomalacia. He explains it on the same grounds as the cerebral affection: the arteriosclerosis of the blood-vessels of the nasal mucosa.—*Archiv. f. Laryngologic*, viii, 3.

New Instrument.

A Dissector.

BY B. BRINDLEY EADS, M.D.
CHICAGO.

The instrument, a cut of which is here given has been invaluable to the writer in his operative work and doubtless will prove to be a most serviceable one to the general surgeon. All surgeons use some form of blunt instrument, it may be a director, a dissector or the handle of the scalpel, while the instrument here presented combines the advantages of all in one. It is made from a single piece of metal, seven inches in length, consisting of a central portion, the handle and two extremities, one of which is hook-shaped and fenestrated near the end and the other, slightly curved and blade-shaped, has a single longitudinal groove in the center. The latter is used for the isolation of structures located in tissue which can be pushed aside, thus avoiding hemorrhage and keeping the field of operation



dry. This is especially valuable in breaking down adhesions, enucleation of diseased glands, exposure of important vessels and nerves. The single groove serves as a guide for the back of the knife in making the incision and takes the place of the grooved director. Therefore this extremity may be regarded as a combined grooved director and separator of tissues and resembles the well-known Kocher instrument in its construction. When greater force is required in dissection, the hook-shaped extremity is brought into use. The eye acts as a ligature carrier, the blunt extremity of the hook, which can not be forced through the wall of the blood-vessel, makes it a convenient aneurysm needle. The instrument is manufactured by V. Mueller & Co., Chicago.

Book Notices.

MASTERS OF MEDICINE. CLAUDE BERNARD. By Michael Foster, M.A., M.D., D.C.L., etc. Professor of Physiology in the University of Cambridge. New York: Longmans, Green & Co., 1899.

Accident and environment have often more to do with one's life and its successes or failures than most of us are willing to admit. Certainly it was an accident that caused Claude Bernard to take up the study of medicine, and it was the later environments which influenced him to take up the gradually widening investigations to which he afterward devoted his life.

His parents being in moderate circumstances, Claude was given only a fair education, and while yet in his teens he accepted a position with a pharmacist. During his evenings he evidently had time for writing, for after compounding drugs for two years he produced a comedy which was placed on the local stage with more or less success. Stimulated by this he made another attempt. His second effort was a historic piece in the conventional five acts. This completed, he gave up his position in the pharmacy, and with a letter of introduction to the great critic, Saint-Marc Girardin, of Paris, he went to that city. When he presented his letter and manuscript to Girardin, the latter acknowledged that the drama showed its author possessed literary ability of no mean order, at the same time he discouraged the aspirations in the young man and advised him to take up some other calling. "You have

studied pharmacy," said the critic; "study medicine, you will thereby much more surely gain a livelihood." And this advice was followed.

No better man could have been selected to write the life of Bernard, the greatest among the physiologists of the past, than Sir Michael Foster, one of the greatest of the physiologists of the present. The history of Bernard is a history of the development of the science of physiology during the thirty-five years previous to his death. Bernard's life and works were so intimately connected with this development that it could not be otherwise. Hence, while the reader will find in this a history of the life of one of the greatest men of the century, written in such a style that it is as fascinating as a novel, at the same time he will find it more a history of the work and the experiments which made our present knowledge of physiology a possibility. Very little of the private life of the man is given. The story of such a life, full of indomitable energy, of unselfish devotion to scientific investigation, crowned with success after overcoming obstacles apparently insurmount-

able, can not but stimulate those who read it to greater efforts; and also it will bring one to a realizing sense of the fact that the knowledge we have of physiology, as well as other sciences, has come to us without labor on our part, through the most self-sacrificing labors of others.

THE GROSS AND MINUTE ANATOMY OF THE CENTRAL NERVOUS SYSTEM. By H. C. Gordinier, A.M., M.D., Professor of Physiology and of the Anatomy of the Nervous System in the Albany Medical College. With 48 full-page plates and 213 other illustrations. Philadelphia: P. Blakiston's Son & Co.

The anatomy of the central nervous system has of late years become so detailed that few text-books on nervous diseases can give more than a general view of its leading features without sacrificing more space than is desirable. The present work meets the need of a special anatomical text-book devoted to the nervous system. Notwithstanding the recent publication of the translation of Edinger's work, this book will find a place and meet a want. It has an advantage of being originally written in our language and that is not a slight one, when we consider the involved and elaborate nature of its subject. Dr. Gordinier has apparently done his work in a very thorough and satisfactory manner and the book in its present form will be a boon to the student in this department. Confining itself, as it does, to human anatomy it thus gives less chance for confusion and is more readily consulted by the average student and practitioner. For students it certainly has some decided advantages, though as a volume for reference it is inferior in some respects to Edinger's work. We have compared the two for the reason of their almost simultaneous appearance and their identical and kindred subjects.

The illustrations here are largely schematic and for that reason are more instructive; for the most part they appear to leave little to be desired. There is a good index and the make-up of the book is first-class in every respect.

A MANUAL OF DISEASES OF THE NERVOUS SYSTEM. By Sir W. R. Gowers, M.D., F.R.C.P., F.R.S. Consulting Physician to University College Hospital; Physician to the National Hospital for the Paralyzed and Epileptic, Queen Square. Third edition, Revised and Enlarged. Edited by Sir W. R. Gowers, and James Taylor, M.A., M.D., F.R.C.P., Senior Assistant Physician to the National Hospital for the Paralyzed and Epileptic, Queen Square; Physician to the Northeastern Hospital for Children and to the National Orthopedic Hospital, Volume I. Diseases of the Nerves and Spinal Cord. With one

Hundred and Ninety-two Illustrations. Octavo. Price net \$4.00. Philadelphia: P. Blakiston's Son & Company, 1012 Walnut Street.

This latest addition of Gowers' standard "Manual of Nervous Diseases" will be welcomed by the profession. The changes in the present volume bring it up to the more recent acquisitions in the department of neurology. The author has apparently accepted in full in this edition the later theories of the neuron and has added a chapter on the general constitution of the nervous system, in which the neuron theory and its history are elucidated. The additions are found, moreover, in every portion of the work and aggregate a total of seventy-six pages in excess of that of the prior edition. An appendix on the muscle spindle, by Dr. F. E. Batten concludes the text. The index is only moderately complete, but as this is the first volume this can be made more satisfactory when the finished work appears.

This revised edition of the work will, beyond question, continue its deserved reputation as one of the leading recent manuals of diseases of the nervous system in our language. It is so generally thorough in its treatment of the subjects that the very few places where it might be more full and complete without unduly expanding beyond the normal compass are hardly worth mention. It might be rivalled by other recent publications as a student's textbook, but as a manual and reference work for the practitioner it is unsurpassed.

BULLETIN OF THE OHIO HOSPITAL FOR EPILEPTICS. Vol. I, Nos. 2 and 3. Published by the Hospital: Gallipolis, Ohio.

Excepting a brief introductory with statistics and remarks by the superintendent, Dr. H. C. Rutter, the whole of this number of the "Bulletin" is by the pathologist, Dr. A. P. Ohlmacher. The memoirs are all pathologic reports, fully detailed, with critical discussions of the conditions found, their etiology and relations to the epilepsy in the clinical history. The concluding paper alone, a short one, deals with the comparative pathology of tumors as illustrated by certain marked growths in the lower animals.

One of the most important memoirs here published is that on the lymphatic constitution in idiopathic epilepsy, in which Dr. Ohlmacher maintains his views previously published on the importance of persistent thymic and general lymphatic hyperplasia as having a probable morphologic and casual relation to the disease. In this publication he reports five cases—additional to those previously published—of genuine *grand mal*, presenting the anomalies mentioned above, and being the most typical examples of idiopathic epilepsy out of nineteen epileptics examined post-mortem.

In all respects the "Bulletin" is a credit to the institution and to the state that gives it its support.

ARCHIVES OF NEUROLOGY AND PSYCHOPATHOLOGY, Vol. I, No. 4, 1898. State Hospital Press: Utica, N. Y.

This issue of this scientific memoir serial is practically a monograph on acromegaly, one hundred and ninety-four of its two hundred and fifty pages being devoted to the subject. The principal article, that of Dr. Harlow Brooks, is noticed editorially in this issue of the JOURNAL, and further mention of its contents can therefore be dispensed with here.

The other memoirs are, one a collateral subject, the distortion of the optic chiasm in a case of acromegaly, by Dr. Ward Holden; one that might be considered in a sense collateral, on the normal dimensions of the pituitary fossa by Dr. Alex. Herdlioka, and one, a preliminary psychologic study of a case of amnesia. The issue is a valuable one and maintains the standard set in this publication. ♣

TRANSACTIONS OF THE AMERICAN MICROSCOPICAL SOCIETY. Edited by the Secretary. Twenty-first annual meeting held at Syracuse, New York, Aug. 30, 31 and Sept. 1, 1898. Volume XX. Lincoln, Neb. Issued May, 1899.

This handsome volume of transactions contains several papers of medical interest, some of which have already been noticed

editorially in the JOURNAL. Still other short medical papers are those on "The Micrometry of the Human Red-Blood Corpuscles," by Frank Judson Parker; "On Feeding Some Insects with Cultures of Comma or Cholera Bacilli," by R. L. Maddox; "Questions in regard to the Diphtheria Bacilli," by M. A. Veeder, and "Medical Microscopy," by A. A. Young. There are, of course, the lengthier memoirs on biology and natural history themes with elaborate illustrations. The volume is, on all these accounts, evidently a valuable contribution to scientific literature.

Deaths and Obituaries.

W. N. AYERS, M.D., of Wichita, Kans., died at the home of his son, in that city, August 30, aged 88 years. Dr. Ayers was also an ordained minister of the Presbyterian Church; and was at one time a member of the Illinois legislature.

THOMAS J. DOUGLASS, M.D., died at his home in Ottumwa, Iowa, September 2, aged 72 years. He was graduated from the University of Pennsylvania in 1853 and from Western Reserve College in 1854, and began practicing his profession in Ottumwa in 1855. He was president of the Wapello County Medical Society and a member of the Des Moines Valley and the Iowa State medical associations.

JOHN M. GRAY, M.D., of Noblesville, Ind., died at the home of his daughter, in that city, August 28, aged 63 years. He was surgeon of the 39th Indiana during the Civil War, and distinguished himself by the skill and success of his work.

JULIUS HALL, M.D., University of Maryland, 1841, of Upper Marlboro, Md., died at the home of his daughter, in that city, September 4, aged 80 years. He had been a practitioner for over 57 years.

GEORGE W. KING, M.D., Pendleton, Oregon, died August 23, of cerebral embolism. He was a graduate of the Ohio Medical College, and a prominent medical figure in the Pacific northwest. He was 55 years of age.

AUGUSTUS DELOFFE, M.D., surgeon and major U. S. A., died September 3, at Fort Sam Houston, San Antonio, Texas. He was born in France and was appointed from Louisiana in 1874. His last post was the U. S. Barracks, Columbus, Ohio.

M. A. MOSHER, M.D., Austin, Ill., died September 12, aged 80 years. He was graduated from the University of Michigan, and had practiced medicine at Appleton, Berlin and Milwaukee, Wis. During the Civil War he served as surgeon in the 20th Wisconsin Infantry.

TIMOTHY H. O'NEILL, M.D., of Providence, R. I., a graduate of Maynooth College, Dublin, and of the New York Medical College, died at his home, August 29. He was at one time surgeon-general of the 5th Battalion of Infantry, Rhode Island regiment.

MATTHIAS J. PENNYBACKER, M.D., died in Philadelphia, August 29, aged 48 years. He was an alumnus of the University of Pennsylvania, class of 1876.

JOHN H. TILFORD, M.D., Windom, Minn., died September 7, after an operation for appendicitis. He was graduated from the Northwestern Christian University (Butler College) and the Indiana Medical College. He served through the Civil War as assistant surgeon of the 79th Indiana.

J. F. WADE, M.D., College of Physicians and Surgeons, Baltimore, 1884, of Arlington, Neb., died in that city, September 3, of heart failure. He was surgeon of the Fremont & Elkhorn Valley R.R.

WILLIAM F. TROUT, M.D., of McConnellsburg, Pa., died in that city from the effects of gangrene, September 7, aged 66 years. He was graduated from Jefferson Medical College in 1856, and was a surgeon during the Civil War. He also practiced for several years in Egypt and Palestine.

P. M. HOBBS, M.D., of Wymore, Neb., September 4. . . . Webster B. Johnson, M. D., of Savanna, Iowa, August 31, aged 25 years.

... Robert J. McClure, M.D., of Sandy Lake, Pa., September 3, aged 68 years. ... William Rubey, M.D., of Macon, Mo., August 31. ... Arnold Vogt, M.D., of Fort Madison, Iowa, September 2, aged 90 years.

DEATHS ABROAD.

S. HERXHEIMER, M.D., a prominent dermatologist of Frankfurt, Germany. ... F. Gonzalez del Valle, professor of surgery at Havana for over sixty years. ... H. Klotz, professor of gynecology at Innsbruck.

Miscellany.

Mechanics and Physiology of Bicycling.—The chief advantage of bicycling over gymnastic exercises, according to Siegfried of Naheim, is that it develops the attention and innervation, and this central activity is of a great hygienic and therapeutic value.—*Deutsche Med. Woch.*, No. 33.

Fatal Hemorrhage from Lesion of an Intercostal Artery.—The artery at the point of the injury (stab) was only .5 mm. in diameter, but the aspiration of the blood at each expiration prevented the formation of a clot and led to fatal hemorrhage, the first case of the kind on record. Suture of the pleura would probably have prevented the intrapleural effusion.—*Beitrag z. klin. Chir.*, xxii, 2.

Jejunostomy.—Maydl claims that the indications for jejunostomy are as comprehensive as for gastroenterostomy, and he prefers it in case of ulcer ventriculi and duodenal stenosis. He adopts Kunn's suggestion of a Y-implantation of the central in the peripheral end to control the bile and pancreas secretion. Twenty-two cases are tabulated in the *Mitth. a. d. Grenz.*, No. 4.

Injury to Abdomen Without External Wounds.—Eichel concludes, from the study of several observations, the urgent necessity of the immediate transportation to the hospital of every person injured in the abdomen, even without external wounds, without waiting for the classic symptoms of peritonitis. The case can then be supervised and operated on as soon as the pulse increases out of proportion to the body temperature.—*Beitrag z. klin. Chir.*, xxii, 1.

Extrauterine Pregnancies.—A patient succumbing to peritonitis in the supposed sixth month of pregnancy was found to have a fetus 51 cm. long, in the left tube, surrounded by evidences of a fetus developed to term in some previous pregnancy, macerated and partially absorbed. As this left tube showed no traces of a corpus luteum, and as its connection with the uterus was entirely obliterated, the fecundated ovum must have been derived from the right tube.—*Arch. f. Gyn.*, lviii, 1.

Philadelphia Mortality Statistics.—The number of deaths occurring in Philadelphia during the week ending September 9 was 405, a decrease of 132 over the corresponding week of last year and an increase of 69 over that of last week. The principal causes of death were: Apoplexy 17, nephritis 24, cancer 11, cholera infantum 29, tuberculosis 59, heart disease 29, pneumonia 17, septicemia 6, suicide 4, sunstroke 1; infectious diseases: typhoid fever 7, diphtheria 15, cerebrospinal meningitis 1.

Physiology of the Handwriting.—Recent research by Javal has established that the most rapid and even handwriting, written with the least effort, is obtained with the paper sloping to the left at about the same angle as the slope of the handwriting, the wrist making the motions rather than the fingers, the arm pivoting on the elbow, each line thus an arc of a large circle, and no dots or crosses inserted until the page is reread. He adds that physiology sheds a bright light on expert study of the handwriting. The advantages to be derived from a sloping handwriting were divined from the

earliest ages, as evidenced for instance, by the famous "Mesa Stela" in the Louvre.—*Bulletin de l'Academie de Med.*, July 18.

Predisposition to Infection Induced by Lesions of the Tissues.—Extensive experimental tests of the influence of ligatures, crushing the tissues and other injuries, on the development of bacteria introduced into wounds at Tavel's bacteriologic institute at Berne, have resulted in establishing the advantages to be derived from moist asepsis in treating wounds, and the necessity of avoiding ligatures of muscles and crushing of the tissues during operations. Tetanus spores introduced into wounds did not produce infection, unless the muscles had been ligated, in which case the disturbances in the circulation favored the germination of the spores and development of the bacilli.—*Chl. f. Chir.*

United Twins.—An unsuccessful attempt has been made to separate the six-year-old "Rosalina and Maria Sisters," the interesting case of xiphopagism mentioned in the *JOURNAL* of August 12. We also reproduce an etching of the twins from the *Brazil Medico*. Repeated examinations in medical circles had convinced every one that the twins were distinct and could easily be separated. Radiographs, after ingestion of bismuth, enabled the entire alimentary canal to be traced in each as in



a normal subject, while the connecting band cast no shadow. But the incision revealed a peritoneum in common and a single continuous liver, forming a flattened lobe 4 cm. thick and 10 cm. wide occupying the second upper quarter of the connecting band. There were no indications of a septum of any kind, and intervention by operation was abandoned. In other respects the organs of each were found apparently independent. The twins move around easily, one walking backward, but can only lie on one side with comfort.

Seasickness.—A physician on one of the North German Lloyd steamers has contrived an apparatus to register the movements of the ship, described in the *Wiener Klin. Woch.* of July 27. It records that the ship sometimes rose perpendicularly a distance of 13 meters, at times as rapidly as 2 meters in a second. Ah, the inventor, considers seasickness

a functional affection and that it only occurs when the motion of the ship forms an element in the consciousness. The immunity of infants and the lesser predisposition of the aged, its absence during profound sleep, and also the fact that the seasickness is forgotten in moments of great danger, tend to establish the functional character of the disease.

Prevention of Suicides.—Hauviller states that in his thesis (Paris, 1899), that material causes only indirectly produce the loss of psychic balance, which is the direct cause. Rich or poor, the first step is a sense of loneliness, of isolation, and association of any kind is the most effective means of combating the tendency. Family, religious, social associations all prevent the idea of self-destruction, and the stronger the ties the less it occurs. There are fewer suicides among the Jews than among the Roman Catholics, and fewer among them than in Protestants. In the army there are more among the petty officers than among the privates. Political crises lower the number of suicides as men are drawn into closer fellowship with each other.

Favorable Effects of Alkalinization.—Injections of sodium salts were made by M. M. Charrin Guillemonat and Levaditi very gradually in a series of experiments on rabbits and kept up a long while. Another group were injected with acids. All were then inoculated with pyocyanous cultures. The control-animals died in three days; the acid animals in eighteen to forty-eight hours, while the alkalinized survived several days and the injection was much less intense in every respect. The alkalines evidently modified the soil in favor of the defense.—*Progress Med.*, August 5. (*Soc. de Biologie.*)

Double Stars of Medicine.—Janus has an interesting article on members of the profession who have become so distinguished in other branches of learning that the medical aspect has been eclipsed. Rabelias and Schüller in literature, Erastus and Servetus in theology, Averroes and Locke in philosophy. The latter name is a surprise and the article quotes at length from some unpublished MSS. in the British Museum to show that this intellectual ruler of the eighteenth century was an Oxford bachelor of medicine, physician to the Earl of Shaftesbury and others, and constantly compiling medical notes and suggestions.

Surgical Treatment of Epilepsy.—Contrary to most writers, Schär advocates intervention always when internal, dietic measures have failed to afford relief in a brief space of time. The inmates of epileptic asylums should be examined occasionally by a surgeon to decide which cases promise a successful operation. His conclusions are based on the results in Kocher's clinic, and he claims that an injury of the skull properly treated never determines epilepsy. Abstinence from alcohol is imperative and even for persons who have suffered trauma of brain or skull, with no evidences of epilepsy.—*Archiv. f. Klin. Chir.*

Therapeutic Utilization of Salivation.—Von Leube had his attention called to this subject by a case of enormous ascites which spontaneously retrogressed and was eliminated in the saliva that attained an amount of three liters in the twenty-four hours, and 300 to 1000 c. c. were secreted daily for some time, with no recurrence of the ascites. Applying this experience to several cases of pleuritis exudativa, he ordered the patients to chew on rubber tablets, and thus induce a copious salivary secretion. In 4 cases out of 5 the effusion was absorbed, and once in 2 cases of ascites. He therefore advocates alternating or combining ptyalysis with diuresis and diaphoresis when other measures fail.—*Muenchener Med. Woch.*, August 15.

Fish Eater's Tuberculosis.—This is the name suggested for leprosy by Jonas Hutchinson, who attributes the disease to excessive fish diet, and believes that it will disappear when

cereals, potatoes and meat take the place of the salt fish. Except under special conditions it never occurs in inland districts. It is especially prevalent in Roman Catholic countries, he states, which impose a fish diet on fast days. The Greek church forbids fish as well as meat, and leprosy did not follow the church into the interior. Hutchinson's theory meets with so little acceptance among physicians that he is now appealing to the general public.—*Journal of Tropical Medicine*, June.

Alcohol and Legal Responsibility.—If a person under the influence of liquor is in a condition of health, he is responsible; if in a condition of disease, he is not responsible. This is the key to the question according to De Boeck, president of the Belgian Society of Mental Medicine. Where it is impossible to absolutely decide the pathologic or non-pathologic condition, attenuated responsibility must be admitted. A person under the influence of liquor is intoxicated and hence not normal. But alcoholism being so frequent, it has become "normal" as it were, and the problem is to decide whether the reaction to the alcohol is normal or not. Unconsciousness and amnesia are important symptoms of normal drunkenness, but opinions vary as to the degree necessary. He does not consider it necessary that they should be complete, nor that the soil should be prepared by a hereditary taint, to produce pathologic intoxication. The fact of having taken but a small quantity of alcohol should not be considered a necessary indication of pathologic intoxication, nor should the benefits of irresponsibility be refused to those who have taken large quantities.—*Revue Med.*, August 2.

Russian Congress to Arrest the Spread of Venereal Diseases.—The official summary of the reports and measures proposed at this conference in 1897, has just been published in German in a special number of the *Derm. Zftf.* The tendency of the seventy measures advocated is for stricter control of prostitution, ample gratuitous facilities for treatment of venereal diseases, with special employment and diversion for prostitutes kept in the hospitals for treatment—"a prominent field for private benevolent efforts"—examination of male visitors to brothels if possible, and opportunities for post-graduate courses in venereology. A medical certificate of the absence of any contagious disease should be required of servants and factory employes on entering and leaving service. The reports show that in the smaller towns extragenital infection is the rule instead of the exception. Introduction of a uniform nomenclature and schema for registering cases is urged.

Deaths in Michigan During August.—There were 2755 deaths in Michigan during the month of August, corresponding to a death-rate of 13.8 per 1000 population. This number is 356 more than the number registered for the preceding month, and is also about 300 more than the number registered for the month of August, 1898. There were 703 deaths of infants under 1 year of age, a marked increase, due to the prevalence of diarrheal diseases, from which cause there were 501 deaths reported, as compared with 265 in July. There were 296 deaths of children aged 1 to 4 years and 551 deaths of persons aged 65 years and over. The number of deaths from certain important causes of deaths were as follows: Pulmonary consumption 145, other tubercular diseases 53, typhoid fever 50, diphtheria and croup 22, scarlet fever 9, measles 7, whooping cough 34, pneumonia 82, diarrheal diseases under 5 years 501, cerebrospinal meningitis 45, cancer 112, accidents and violence 193. There is no marked increase in mortality from any other cause than diarrheal diseases, with the exception of slight rises of typhoid fever and whooping cough.

Women Doctors in Russia.—The *Philadelphia Press*, in a recent article, gives an interesting account of the history of women doctors in Russia, the earliest accounts of which began about twenty-five years ago. It is stated that owing to the lack of facilities which existed in that country many young

women pursued their course of instruction in Zurich, but owing to the trend of liberalism which existed throughout Russia in the sixties a medical college for women was founded in St. Petersburg in 1873. At this time much opposition was encountered and the idea was combated on the ground that such condition tended toward disintegration of the family, and was opposed to the public morals. The school was an annex to the regular military medical college and the girls were admitted on the same footing as boys, each of whom required a course of instruction extending over a period of five years and passed the same examinations, but in the case of the girls the full title of physician was not granted. At the university the women students were regarded by their male comrades as equals, and, as an example of the friendship that existed between them, the following is told: One of the female students was in need of a book on anatomy and was overheard by a male companion, unknown to her, but who at once said: "I'm sorry not to have one myself, but if you wait a moment I shall surely get one for you," and a few moments later appeared with several copies loaned by her friends, and on presenting them he said: "Take whichever one you like best; take even several, if you know of others of your classmates that may be in need of them." At the time when the first girl students were to pass their final examinations war between Russia and Turkey broke out. Russia had hardly sufficient physicians; the fourth and fifth year students of the Military Medical School were ordered to the battlefield. The girls seized this opportunity, eager to prove their capability to perform the functions of physicians, and during the war the Russian women physicians made themselves generally known and turned public opinion in their favor.

Mosquito Origin of Malaria.—Bignami now asserts that the *Anopheles pictus*, as well as the *claviger*, serves as a host for the crescent-forming parasite.—*Annali de Med. Na.*

Pennsylvania Examinations.—The result of the recent examinations before the Pennsylvania State Board of Medical Examiners was as follows:

Colleges.	Examined.	Failed.	Percent, per cent of failures.	General Average
University of Pennsylvania	143	1	00.7	86.00
Women's, Philadelphia	28	0	00.0	81.22
Medico-chirurgical	93	15	16.3	79.94
Western Pennsylvania	46	7	15.2	79.01
Jefferson	34	3	8.8	78.24
Miscellaneous	74	32	29.7	76.31
Baltimore Medical	7	4	59.1	72.84
General average	425	52	12.2	80.04

Quinin in Malarial Hemoglobinuria.—The JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION bears the fact that it still reads the "assertion" that the administration of quinin in malarial hemoglobinuria aggravates the "symptom," and then asserts that very few practitioners in the malarial districts believe that quinin will produce this condition. The JOURNAL, by rules of logic which are naive, to say the least, says: "Why the hemoglobinuria of malarial origin has been singled out among all the other varieties and stated to be increased by the use of quinin, is not clear. Thus we have: 1, paroxysmal hemoglobinuria, and 2, toxic hemoglobinuria, including that due to chlorate of potash, carbonic acid, naphthol, carbon dioxide, and the poisons of infectious fevers, etc." It says further: "The bright red urine observed is not always a hematuria—in fact, a hematuria is the rare exception, for hemorrhages, of whatever nature, are uncommon in all varieties of malaria."

It is very easy to sit on the editorial tripod on the shore of Lake Michigan and, in the above *ipse dixit* style, dictate to experienced men how they should treat a "symptom," of which

the editor shows his ignorance by calling it such. Malarial hematuria—one term is as good as another, since both are incorrect—is a pathologic entity, with a symptom-complex all its own. To place it in a category with other conditions which also have one of the symptoms does not strike the ignorant swamp doctor as good logic.

Now, to begin with, the form of malarial fever accompanied by bright-red urine, we denominate hemorrhagic malarial fever. There is a distinct hemorrhage, and it is most effectually treated with quinin, and rationally so, because the malaria is in an active form and requires the classic remedy for its removal. Not so in the other condition; here the bulk of the color is due to methemoglobin, the urine is black or the color of port wine, and, the JOURNAL to the contrary notwithstanding, there is always some blood present. In this condition the malarial organism is either already absent or is rapidly disappearing from the blood.

The symptoms of icteric methemoglobinuria of malarial origin are about as follows: After a variable history of previous intermittents, treated with quinin, the patient is suddenly taken with a chill, lasting from a few minutes to an hour, the thermometer indicating from 101° to 106°, usually about 103°. This is followed by no increase of temperature and absolutely no sweating. After a short time, from a few minutes to an hour, the patient will pass, with great vesical tenesmus, from 30 to 300 c. c. of dark-colored urine; if the quantity is small it is inky-black, and the prognosis is bad. The urine is highly albuminous, and contains a variable number of blood discs, mostly bleached out; the specific gravity is from 1025 to 1040. If the patient is still under the influence of quinin, a second or third rigor may appear, without any periodicity, and each additional dose, with mathematical precision, will bring on a paroxysm, and each paroxysm is followed by darker urine, but if no more rigors appear it will gradually clear up. The patient has an anxious facies, rapid, sighing respiration, a rapid, feeble pulse, and more or less nausea. In from six to ten hours after the onset, active vomiting appears, which is projectile, the skin becomes markedly jaundiced (darker than obstructive jaundice), the bowels are obstinately constipated, and the shock becomes more marked. The blood in the beginning may contain from three to four million red cells, some plasmodia, and there may be seen some phagocytosis. In twelve hours the count may be one and a half million, and the plasmodia may have disappeared; even at the autopsy they may be absent in the internal organs.

In favorable cases, after sharp elimination, all the symptoms gradually disappear, the stools, which were at first black and tarry, become lighter and of a golden-yellow color, the urine is voided frequently, becomes more dilute, and contains epithelia and all kinds of casts. In fatal cases the rigors continue, the patient becomes delirious, suppression sets in, and he dies with "uremia." Or, there may be amelioration of symptoms, but with suppression, the patient will feel well and will not believe that he is certainly doomed, and may live eight days after complete suppression. In some few rare cases the plasmodia may persist and give rise to a febrile movement; in such we use methylene blue, some preferring sodium thiosulfate.

Now, the writer will tell the learned editor of the JOURNAL a secret; he has never seen a case treated with quinin recover; on the other hand, by the eliminative treatment the majority of cases make a rapid recovery. This is no editorial bombast, but can be attested by thousands of swamp inhabitants. If a malarial infection is promptly and scientifically treated with quinin this peculiar disorder can be positively prevented, but the dilatory and improper use of it in the face of a malarial cachexia will certainly bring on an attack of methemoglobinuria in a susceptible individual.

The writer has seen several cases of quinin methemoglobin-

uria; it has no existence apart from malarial cachexia. The editor of the *JOURNAL* can find any number of such cases in the Mississippi Valley, provided he has money enough to induce a subject to take a dose of quinin; they generally take arsenic. It seems to be a chronic condition. We admit that we do not understand it, but know, however, that in chronic malaria the hemoglobin percentage falls after quinin is exhibited, just like the pulmonary effect of a mercurial inunction in secondary syphilis.—*The Memphis Lancet*.

The Value of a Medical Defense Union.—We have referred several times of late to the great advantages of a medical defense union for the protection of the members of the profession against blackmail, charges of professional incompetence, etc. A case which has recently occurred in England emphasizes the value of such a league in so marked a manner that we can not refrain from laying the gist of it before our readers.

Dr. Kidd, a medical man in practice at Bromsgrove, whose diplomas of M.B., London, and F. R. C. S., England, mark him at once as a physician of standing, was the medical officer of the Bromsgrove sanitary district, and also of the joint isolation hospital established for the three sanitary districts of Bromsgrove, Redditch, and Droitwich. On Sept. 17, 1898, a member of the Bromsgrove urban district council made a public allegation, according to the *Lancet* for August 12, that a "patient was in the hospital one week and three days and never saw the doctor once, and all the six weeks and three days she was there she never had one drop of medicine." Further, according to the *Lancet*, it was alleged that, although a patient (a little girl) was in great agony for two days, the medical officer did not see her, and that she was frightened by a threat of being put into "boiling blankets" to make her keep quiet in bed; that the medical officer actually ordered this treatment, and that the girl died while undergoing it. Moreover, it was stated that "men, women, youths and boys and girls had to eat, drink, lie, and sleep all in one room; also that the hospital was so badly constructed that rain came into the building, and that the wind could be felt by the patients as they lay in bed.

The facts of these allegations appear to have been that the patient in the first case "was admitted (into hospital) at a late stage of the disease, that convalescence was not interrupted, that she required no medicine, that it was not true that Dr. Kidd did not see her for ten days after her admission, and, further, it was shown that she was the defendant's aunt. The little girl was niece to the woman already mentioned. Nephritis set in as a complication of scarlet fever and she died from uremia. A hot-pack was ordered as a means of treatment—hence the statement about 'boiling blankets'—but the disease was too far advanced for it to be of any avail. It was also proved that Dr. Kidd was indefatigable in his attendance on the patients. The hospital was only a temporary one—a hospital marquee tent with double canvas walls. It was well ventilated, but when there was heavy rain the water trickled down in one or two places, the beds, however, being carefully removed from the damp. The patients were mostly young children, but while the woman already referred to was an inmate there were two boys as patients, about fifteen or sixteen years old. They occupied the same large tent, but their beds were thoroughly screened off from the other beds and Dr. Kidd had heard no complaints."

It is easy to see how such charges may have arisen without malicious intent, and it is still more easy to comprehend how they might form a serious basis for malicious persecution.

It so happened that, according to Dr. Kidd's letter, published in the same number of the *Lancet*, he became a member of the Medical Defense Union five years previously, little thinking that he was himself likely to become involved in litigation. But suddenly there came upon him these damaging charges

of gross professional incompetence and negligence; charges which, as he says, he certainly would have been unable to deal with adequately on his own slender resources. He sent the facts to the secretary of the Medical Defense Union, and at once received a most careful and exhaustive letter of advice from their attorney, followed by an eminent counsel's opinion. The union subsequently took the case off his hands, bringing an action for libel against the author of the charges, entirely vindicating Dr. Kidd's character, disproving the allegations in detail, and obtaining for Dr. Kidd a verdict for £150, the foreman of the jury taking care to explain that it was only the defendant's pecuniary position which prevented them from assessing much heavier damages against him.

It is not only the cost of the proceedings, when an incriminated physician has either to defend himself against malicious or otherwise unjust action, or to vindicate his character against slanderous statements by bringing suit himself against their author—a cost which must inevitably be considerable even though he gain his case; but it is the wear and tear, the sleepless nights, the worry and anxiety, the unfitness for good work which comes from being in a state of tension, which are also saved to him by his membership in such a union. On this point Dr. Kidd says:

"During the six months over which the action was pending, the whole of the work connected with the case was taken off my hands by the solicitor to the union, without the slightest trouble to myself, and I need scarcely have been aware that I was involved in any proceedings at all; but the work was being done nevertheless with an amount of skill and care and unwearied labor which it would be impossible to praise too highly, and which could not have been exceeded if I had been the most wealthy and exalted client in the land, instead of a humble country medical man. When I think," adds Dr. Kidd, "of what the union has done for me in this trying case and of what I should have suffered without its powerful and kindly aid, and when I reflect that such advantages are open to every member of our profession at the cost of 10s. 6d. yearly, it becomes a matter of surprise to me that the membership roll of the Medical Defense Union is not identical with the *Medical Register and Directory*."

In addition to these considerations, the fact must not be lost sight of that the existence of such an association would act as a strong moral power in checking ill-advised and unwarrantable actions against physicians; for not only would the knowledge that the physician had the association at his back act as a deterrent, but further, the necessary preliminary examination of his case by the union before espousing his cause would of itself testify that he stood well with the profession, and be, moreover, a presumptive cause for his assailants to expect failure.

In this country, we believe, slanderous charges are more prevalent, actions for malpractice more common, and attempts to extort blackmail from physicians more frequent than in almost any other. We are constantly reading accounts of such in medical and lay journals. It does, therefore, seem extraordinary that no organized effort of any magnitude or universality exists in this direction; and while we question if it would be wise to impose upon the AMERICAN MEDICAL ASSOCIATION additional functions of a nature so divergent from those with which it is at present fully occupied, we do think that the initiative in organizing such a league might, owing to the far-reaching influence of the ASSOCIATION, wisely take its rise from that body. But from whatever direction it comes, we would urge that such a league be formed, and that it be national, with state branches, and not so many isolated state leagues. For the principle of the stronger helping the weaker will apply as much between one state—or all the states—and another as between individual medical men.—*Editorial N. Y. Medical Journal*, September 9.

Christian Science Legal.—Attorney-General Akin has rendered an official opinion to the effect that the treatment of disease by so-called spiritual or mental methods is not an offense under the criminal code of Illinois. This is an additional reason why the next legislature should pass a law forbidding such treatment for infants or children. A man or woman who has reached years of discretion is supposed to be a competent judge as to what treatment he or she shall have in case of illness. If some adults think they can get any benefit from Christian Science, or mind cure, or the prayers of Dowie, they have a right to risk their lives under this sort of treatment if they so desire. But small children should be protected from the ignorance or charlatanism that deprives them of skilled medical treatment in case of dangerous illness. Whatever virtue there is in mental or faith cures arises out of the faith of the patient and the power of autosuggestion. Infants can get no benefit from these methods.—*Chicago Tribune.*

Queries and Minor Notes.

THE TUBERCULOSIS CONGRESS.

KANSAS CITY, MO., Aug. 28, 1899.

To the Editor:—Can you inform me where I can obtain the Proceedings of the recent Tuberculosis Congress in English. The information will be appreciated.

J. C.

ANSWER: The JOURNAL is not aware of any publication of the proceedings of the recent Tuberculosis Congress in English other than the abstracts given in correspondence and otherwise in the medical periodicals. We presume such publication will be made. Probably some of our readers may be able to enlighten our correspondent, as well as us.

BILIARY CALCULI.

EVANVILLE, IND., Aug. 31, 1899.

To the Editor:—I wish to put on record a case of biliary calculi that came under my observation and was operated upon by me July 15, 1899. The gall-bladder contained 331 distinct calculi, the largest as large as a good-sized marble, and the smallest as large as a grain of wheat. I have not seen or heard of a case with so large a number of stones. Perhaps you or some of the JOURNAL readers have, if so I would like to know it.

A. M. HAYDEN, M.D.

The case of our correspondent is certainly of interest, but not unprecedented. Others of equal or greater numbers have been published; for example, Meiseubach's of 1100 calculi, in the *Medical Mirror*, 1885, vi, p. 92. Naturally, with these excessive numbers the calculi must be very small, and some of them may have been counted that were not nearly so large as the smallest mentioned by Dr. Hayden, "as large as a grain of wheat," and that would have been overlooked by other observers.

The Public Service.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., to and including Sept. 7, 1899:

Lewis Balch, major and surgeon, Vols., from New York City to San Francisco, Cal., for duty in the Department of California.

William E. Borden, captain and asst. surgeon, U. S. A., member of an examining board in Washington, D. C., vice Major William F. Lippitt, Jr., surgeon, relieved.

Robert Boyd, acting asst. surgeon, leave of absence extended, to Louis Breckin, major and surgeon, U. S. A., from duty in Porto Rico to post duty at Fort Logan, Colo.

George L. Cable, acting asst. surgeon, from New York City to Athens, Ohio, for annulment of contract.

Christopher C. Collins, lieutenant and asst. surgeon U. S. A., sick leave extended.

John B. Darling, acting asst. surgeon, to temporary duty at Fort Snelling, Minn.

William B. Davis, major and surgeon, U. S. A., leave of absence extended.

John Ryan Devereux, acting asst. surgeon, leave of absence granted.

Marion O. Fulcher, acting asst. surgeon, from Waynesboro, Ga., to duty at Camp Meade, Pa.

William W. Gray, major and surgeon, U. S. A., relieved from further station at Fort Huachuca, Ariz.

Philip F. Harvey, major and surgeon U. S. A., member of an examining board in San Francisco, Cal., vice major E. B. Mosely, surgeon, relieved.

George L. Hicks, appointed lieutenant and asst. surgeon, Vols., August 17, 1899, and assigned to the 35th Inf. Vols.

Aubrey F. Higgins, acting asst. surgeon, from Germantown, Pa., to Governor's Island, N. Y., for duty in the Department of the East.

John Sturgeon Hill, acting asst. surgeon, from Alleghevy, Pa., to San Francisco, Cal., for duty in the Department of California.

D. J. Johnson, acting asst. surgeon from duty with the 47th Inf. Vols. at Camp Meade, Pa., to post duty at Fort Strong, Mass.

Franklin M. Kemp, lieutenant and asst. surgeon, U. S. A., leave of absence granted.

Thomas R. Marshall, captain and asst. surgeon 41st Inf. Vols., from New York City to join his regiment at Camp Meade, Pa.

Clarence B. Millhoff, lieutenant and asst. surgeon, U. S. A., member of an examining board in San Francisco, vice Captain Isaac P. Ware, asst. surgeon, relieved.

Curtis E. Munn, major and surgeon, U. S. A., from Fort Logan, Colo., to his home to await retirement.

John C. Orr, acting asst. surgeon, from Fort Strong, Mass., to Camp Meade, Pa., to accompany the 5th Inf. Vols., to Manila, P. I.

William O. Owen, captain and asst. surgeon, U. S. A., member of a board at St. Louis, Mo., to fix responsibility for certain horses.

John W. Thomas, acting asst. surgeon, from Washington, D. C., to duty at Key West, Fla.

Compton Wilson, acting asst. surgeon, revocation of recent orders directing him to proceed from New York City to Washington, D. C.

Movements of Navy Medical Officers.—Changes in the medical corps of the U. S. Navy for the week ending Sept. 9, 1899:

Surgeon E. H. Marsteller, ordered to duty in connection with recruiting rendezvous, Buffalo, N. Y., to report at the New York Navy Yard, September 4.

P. A. Surgeon B. R. Ward, Asst.-Surgeon J. F. Chaffee, are detached from the *Boston* when put out of commission and ordered home to await orders.

Surgeon J. C. Decker, detached from the *Monadnock* and ordered to the *Monocacy*, at own expense.

P. A. Surgeon J. Staughton, detached from the *Monocacy* and ordered to the *Monadnock* at own expense.

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended Sept. 8, 1899:

SMALLPOX—UNITED STATES.

California: San Francisco, July 31, 5 deaths.
Florida: Jacksonville, September 3, 1 case.
Kentucky: Louisville, August 31, 2 cases.
Massachusetts: Boston, August 25 to September 2, 2 cases.
Ohio: Cleveland, August 19, 7 cases, 2 deaths.
Pennsylvania: Altoona, August 26 to September 2, 7 cases.
Texas: 16 points in State, August 26 (71 cases and 2 deaths have, except in two instances, been traced to a hospital at Sedalia, Mo.)

SMALLPOX—FOREIGN.

Belgium: Antwerp, August 19, 1 case, 1 death.
Brazil: Bahia, July 29 to August 7, 3 cases, 1 death; Rio de Janeiro, July 21 to August 1, 55 cases, 22 deaths.
Greece: Athens, August 19, 7 cases, 2 deaths.
India: Bombay, August 8, 6 deaths.
Mexico: Chihuahua, August 26, 3 deaths; Nuevo Laredo, August 26, 1 case.
Russia: Moscow, August 11, 2 cases, 2 deaths; Odessa, August 12 to 19, 11 cases, 3 deaths; St. Petersburg, August 19, 3 cases, 1 death; Warsaw, August 12, 1 death.

Straits Settlements: Singapore, July 15, 2 deaths.

YELLOW FEVER—UNITED STATES.

Florida: Key West, September 2, 96 cases, 7 deaths.

Louisiana: New Orleans, September 2, 2 cases, 1 death.

YELLOW FEVER—FOREIGN.

Brazil: Bahia, July 22 to August 12, 3 cases, 2 deaths; Rio de Janeiro, July 21 to August 1, 5 cases, 3 deaths.
Colombia: Panama, August 22, 20 cases.
Costa Rica: Port Limon, August 14, 1 case, 1 death.
Cuba: Christo, August 19, 1 case; Sancti Spiritus, August 24, 2 cases.
Mexico: Tuxpan, August 21 to 28, 9 deaths; Vera Cruz, August 24 to 31, 19 cases, 14 deaths.
Salvador: San Salvador, August 1, 2 cases.

CHOLERA.

India: Bombay, August 1 to 8, 2 deaths; Calcutta, July 22 to 29, 53 deaths.
Japan: Osaka and Hiogo, August 12, 4 cases, 1 death.

PLAGUE.

China: Amoy, July 22 to August 8, 425 deaths; Hongkong, July 22 to 29, 37 cases, 39 deaths.
Egypt: Alexandria, August 7 to 13, 45 cases, 39 deaths.
India: Bombay, August 1 to 8, 75 deaths; Calcutta, July 12 to 29, 16 deaths.
Formosa: Tamsui, July 25 to August 10, 13 cases, 20 deaths.
Russia: St. Petersburg, August 12 to 21, 1 case.
Straits Settlements: Penang, July 14 to 22, 49 cases, 39 deaths; Singapore, July 15 to 22, 3 cases, 5 deaths.

CHANGE OF ADDRESS.

Brillingham, J. D., from 1823 So. 17th St. to 4205 Girard Ave., Philadelphia, Pa.

Butler, G. F., from 103 State to 794 Adams St., Chicago, Ill.

Daly, J. J., from LaGrange, Ill. to Charles City, Iowa.

Daly, V. M., from Chicago to Pontiac, Ill.

Griffin, O. A., from Fayette, Ohio to 812 E. Washington St., Ann Arbor, Mich.

Hull, G. S., from Mt. Alverno, Pa. to Pasadena, Cal.

Hartman, J. C., from Keown to Box 156, East Pittsburg, Pa.

Herr, A. W., from 440 to 230 Euclid Ave., Cleveland, Ohio.

Heston, H., from Columbus to Baltimore, Ohio.

Krebs, L. L., from Philadelphia, Pa. to 1406 11th St., Des Moines, Iowa.

Lawson, T., from Mountain Grove, Mo. to El Reno, O. T.

McCready, H., from New Concord to Brice, Ohio.

Noble, C. P., from 1637 Broadway to 1509 Locust St., Philadelphia, Pa.

Patterson, C. L., from Marango to West Side, Iowa.

Small, J. W., from New York to North Tarrytown, N. Y.

Schabinger, C., from Felton, Del. to S. E. cor. 11th and Brown Sts., Philadelphia, Pa.

Tifschitz, A. H., from 1010 Milwaukee Ave. to 11018 Michigan Ave., Chicago, Ill., Pullman Station.

The Journal of the American Medical Association

VOL. XXXIII

CHICAGO, ILLINOIS, SEPTEMBER 23, 1899.

No. 13

Original Articles.

DOES THE REMOVAL OF THE OVARIES EXERT BENEFICIAL INFLUENCE ON THE SUBSE- QUENT PROGRESS OF MALIGNANT DISEASES?

BY E. E. MONTGOMERY, M.D.,
PHILADELPHIA.

No class of cases has stimulated a greater variety of methods for treatment than malignant disease of the genital organs, including the mammary gland. In combating this dreadful disorder medical and surgical therapeutics have been exhausted. In searching for new agencies it is not surprising, in this day of organo-therapy, that the animal secretions and extracts should have found employment. Thyroid extract has found its advocates. The well-recognized, and frequently demonstrated influence of the ovaries on the circulation of the genital glands naturally led to the consideration of the influence of their ablation on the preexisting malignant disease.

To G. Thomas Beatson of England belongs the honor of being the first surgeon who deliberately removed the appendages for the relief of mammary cancer. To him he did, June 15, 1895, on a woman aged 33 years, from whom in the preceding January the entire breast, including the pectoral muscle and the axillary glands, was removed for undoubted cancer, an operation which was so extensive on the skin surface as to require parallel incisions to permit the closure of the wound. Three months later the wound reopened and there was general involvement of the scar. Thyroid extract was then tried for its influence on mucoid degeneration, but without appreciable influence on the progress of the disease. Then, in June, as already stated, oöphorectomy was done. The right ovary was healthy, the left slightly cystic. The improvement in the diseased mammary region was immediate, though the use of thyroid extract as a powerful lymphatic stimulant was resumed at the end of a month and continued subsequently. The improvement was uninterrupted, and eight months later he could report the patient in good health with a healthy cicatrix. In his subsequent cases—two in number—while showing improvement, the result was not so gratifying as in the first case. In a recent discussion, Dr. Stites mentions having seen Beatson's first case, which was regarded as a cure, and asserts that the disease is returning.

Stanley Boyd reports seven cases in which he has performed oöphorectomy for the relief of inoperable cancer of the breast with appreciably favorable results in the majority of cases. His first case, two years after the

operation, was almost free from true cancer, but this was a patient in whom the disease naturally ran a slow course. He attributed the beneficial influence in both his and Beatson's cases, to the oöphorectomy, and asserts that the patients of the latter would have done just as well had thyroid extract been omitted from the subsequent treatment.

In order to explain the beneficial influence of oöphorectomy, Beatson finds it necessary to construct a new theory for the etiology of cancer. His theory is based on the natural reproductive power of the body cells as especially exemplified in the lower forms of animal life. In the hydra, on the division of its stricture into separate portions, each portion will develop into a new and complete hydra. In the higher forms of life, the cells of the embryo are arranged into separate layers, and by subsequent differentiation, these cells are specialized into separate organs and tissues. One very marked group retains its power, the special function being the reproduction of the species. The setting aside of these cells for the special function does not deprive the other cells of their reproductive power, but so long as they are healthy, the ovaries and testicles exert an inhibitory influence by which such power is checked or controlled; in other words, special reproductive organs, rather than the nervous system are more potent in the regulation of processes of metabolism. An altered ovarian secretion or migration of ovarian cells which become parasitic may be the source of origin of cancer. He quotes Klebs as having come to the conclusion that cancer epithelial cells are transformed into ovum cells, probably due to the fructifying influence of the leucocytes on the cancer cells, causing them to multiply. Oöphorectomy, thus far, has been addressed to the treatment of malignant disease of the mammary gland, but if disease of the ovaries originates malignant disease, and their removal is serviceable in the one form, then the treatment should be applied to all forms of cancer and wherever situated, the extirpation of the ovaries should accompany the removal of the uterus in every case of uterine cancer, and the advisability of oöphorectomy should be considered in every case of inoperable cancer of the genito-urinary canal; as well as of the mammary gland and digestive tract.

Such conclusion opens the gates to operative procedure so widely that it is extremely important this theory should be carefully considered and its results thoroughly weighed before the conclusion is promulgated. The theory is a new one, but where all is speculation, that one which best harmonizes with the subsequent progress of the disease is most worthy of credence. If, however, the healthy condition of the special reproductive organs is necessary to control and keep in check the latent reproductive action of the various cells, and cancer is a result of the loss of this action through

*Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

disorder of their function, how much more must we expect the tissues to run riot, when inhibition is entirely removed. If the patient is liable to the genesis of cancer when inhibition is partially removed, will she not be much more subject to its ravages when inhibition is entirely destroyed? If we accept this control view, may we not explain the greater frequency of cancer at or following the climacteric to the decline of this inhibition, and further the apparently increased frequency of malignant disease in women who have had both ovaries removed as demonstrated by the statistics of Spencer Wells' individual work?

It would seem, then, that our theory carried to its logical sequence would contraindicate rather than render advisable the removal of the ovaries for malignant disease. While the theory of inhibition would seem to forbid the removal of the ovaries for relief of cancer, empiricism may demonstrate that the practice is more correct than the theory. An analysis of the results, however, does not in my judgment assure such a conclusion. The results of some fifteen operations in the hands of different operators show but one case in which the cure seems effected, and in this one a late report indicates a return. Many other cases appear temporarily benefited, but sooner or later the degenerative processes resume their fatal progress.

Every surgeon who has had an opportunity to operate on a large number of cases of malignant disease has been impressed with its erratic course. There are some cases in which the limits have been reached, in which it seems inadvisable to operate, and operation is followed by cure or delay in its progress for years. In other cases the involvement is so slight as to make us feel assured that operation must be associated with complete relief and yet a thorough, careful operation associated with removal of the ovaries is followed by early relapse.

My experience with the extirpation of the uterus for cancer has not impressed me with the fact that the individual enjoyed any special immunity against relapse on the removal of the ovaries. It does not seem unreasonable, however, that the ovaries may exert an influence on the circulation in the vicinity of the reproductive organs through the vasomotor system. Nature is economic of her forces. With the removal of the ovaries and the cessation of need for their performance of special functions, the unused organs are no longer so liberally supplied with nutrition, and hence temporary relief, but the history of cancer does not prove that it can be starved out, so relief must be at best but temporary.

A careful consideration of the subject forces us to the conclusion that the apparent relief is afforded through the vasomotor nervous system; that further experience is required to demonstrate not curability, but sufficient palliation and delay in the progress of the disease to compensate the patient for the discomfort of the additional operation; and that such an operation will only be of service if done during reproductive activity.

THIS SIGN—"Dr. Sylvester, American Dentist"—at the entrance to his office in a French city resulted in the condemnation of the dentist on two indictments: 1, for practicing under a pseudonym, as his name was in reality Sylvester Baumgartner; and 2, for neglecting to append the source of his medical diploma, the court asserting that dentistry being a branch of medicine, the derivation of the title of "Dr." must be stated on the sign to conform to the French law in respect to aliens practicing in France.

CLINICAL AND MICROSCOPIC DIFFERENTIATION OF SCLEROCYSTIC AND CIRRHOTIC DEGENERATION OF OVARIES AND CHRONIC OVARITIS.*

BY WM. H. HUMISTON, M.D.

Associate Professor of Gynecology in the Medical Department of the Western Reserve University; Gynecologist-in-Chief to St. Vincent's Charity Hospital; Consulting Gynecologist to the City Hospital.
CLEVELAND, OHIO.

It has been, and is still, the custom to regard the condition of the ovaries as termed cirrhotic and sclerocystic degeneration as merely a sequence of an acute ovaritis. No pathologist, so far as I have been able to learn, has attempted to separate these primary degenerations from those occurring secondarily to inflammation.

ETIOLOGY.

The etiologic factor is unknown. In speaking of arteriosclerosis, Osler says that the tendency to this affection, which shows in entire families, can be explained in no other way than that "in the makeup of the machine bad material was used in the tubing." And it does seem that in these cases the connective tissue elements throughout the economy are of "bad material." The same authority recognizes an independent primary cirrhosis of the kidney.

A cirrhotic ovary is smaller than the normal; is hard and inelastic, and usually deeply corrugated. A sclerocystic ovary, however, is two or three times the size of the normal organ, and is globular rather than ovoid. The surface is smooth and glistening and studded with slight elevations caused by enlarged Graafian follicles beneath the tunica albuginea. These follicles vary in number from five to twenty or thirty. The largest are found near the surface. On section numerous smaller ones are usually seen nearer the center. The tunica albuginea is always greatly thickened, and is firm and unyielding. The hilum also is usually the first portion of the ovary to show corrugations. In a smaller portion of the cases the vessels within the folds of the broad ligament are sclerosed.

In a simple case there are never any signs about the tube or the ovary indicative of past inflammatory action. It is otherwise in the secondary degenerative changes. It is also true that there is not the marked contraction in the latter as in the primary, and this corresponds exactly to the gross appearance of the kidney of interstitial nephritis, which usually is differentiated from the small granular contracted kidney by the term subacute interstitial nephritis. In the secondary form the tunica rarely, if ever, is involved to the extent to which the primary is subjected.

The microscopic differences between the primary—non-inflammatory—and the secondary—inflammatory—degenerations are especially quite marked. In the secondary we invariably find, in a section taken from some portion of the ovary, a small round-celled infiltration, or the connective-tissue elements in some of their various stages of development. Also, however advanced the stage of fibrosis may be, the numerical relation of nuclear to cellular elements in this variety is always greater than in the primary form. And the microscopic appearance of the vascular system is also different.

In the inflammatory group we have primarily a dilatation of the vessels with secondary contractions of their greatly thickened walls, and a lessening of their lumen.

*Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1895.

In the primary group there is usually no thickening of the vessel-walls; there is never any dilatation, and contraction occurs so early that the poor blood-supply is immediately noticeable, particularly to the periphery of the organ. In those cases of arteriosclerosis of the vessels within the broad ligament, we usually find the condition extending to the vessels entering the ovary—not otherwise. And, lastly, in the primary group the epithelial cells of the ovarian stroma are diminished in number, and usually in size. In some sections they are hard to distinguish from the connective-tissue elements, and appear to be undergoing a process of reversion. I would not state this as a fact, as yet, but it does frequently so appear.

These several microscopic differences are so constant and so decidedly marked, that I have no hesitation in separating them into two distinct pathologic groups.

In the chronic state of ovaritis the chief complaint is dysmenorrhea with intense neuralgic-like pains in one or both ovarian regions which are usually relieved with the commencement of the flow. Usually there is almost an entire subsidence of pain between the menstrual periods—at least, no exacerbations. Menorrhagia is also a constant symptom, undoubtedly due to the affection of the endometrium. The history of the early menstrual epoch is usually negative. In the primary or non-inflammatory, one will find that the dysmenorrhea has existed, usually from puberty, and that this symptom has gradually increased in severity, unrelieved by the flow, and occurring a number of days before, and lasting beyond the cessation of the flow.

A clinical symptom of the greatest importance in the making of a differential diagnosis is the occurrence of intermenstrual pain. The patient will state that she is



NORMAL OVARY (WALDEYER.)

SYMPTOMS.

The clinical history of the inflammatory group is well known and easily recognized. Usually there is a distinct history of infection of the endometrium and a subsequent salpingitis with extension to the ovary by contiguity of parts, or, as is more frequent in puerperal infection, the ovary is involved through the lymphatic system. Infection is accompanied by a chill or rigor, with an elevation of temperature, and an increase of the pulse-rate. Pain and localized tenderness are constant symptoms.

not only never free from pain, but has exacerbations between her periods, which sometimes are even more severe than dysmenorrhea—a poor term. A not infrequent symptom, too, is amenorrhea, or at least delayed catamenia. This prolongation of the usual prodromal stage is attended with most severe mental and physical suffering. And lastly the wear and the constant nervous tension to which these unfortunate patients are subjected lead to some of the most serious functional nerve disturbances. I will presently relate a few cases which more clearly define my meaning.

DIAGNOSIS.

I wish to allude briefly to an interesting discussion by Olshausen and Hegar, on the indications for castration. Olshausen says: "The difference between Hegar and me consists only in the fact that the former when he finds a few prominences on the ovary, or feels that it is firmer and somewhat thicker, or, on the contrary, smaller than usual, satisfies his anatomical conscience, while I, after having ascertained in the same way the dependence of the symptoms on the ovaries, at the most regard the often minimum anatomical changes as a corroborated

Hegar repeatedly declares as indispensable to the indication?"

Olshausen, then, castrates for neurotic symptoms without regard to pathologic changes. Hegar expresses astonishment when he relieves his patient after the removal of—to him—practically a normal organ. It is evident that both fail to appreciate the pathologic and clinical significance of these primary degenerations.

For the clearer understanding of the several points in making a differential diagnosis between the primary and the secondary groups, I arrange them in two columns.



PRIMARY OR NON-INFLAMMATORY SCLEROSIS. DIAGRAMMATIC.

- A —Germinal layer somewhat flattened and with small nuclei.
 B —Thickened fibrous tunica.
 C —Follicle which fails to break through the tunica.
 D —Absence of round-celled infiltration—only a few connective-tissue cells with increase of fibrous elements in the stroma.
 E —A few scattered epithelial cells of the stroma.
 U —Vessel-wall slightly thickened.

tion of my opinion, but recognize the fact that similar symptoms may develop without any changes in the ovary which are clinically recognizable. But an indication can not be offered by changes which are only recognizable on the post-mortem table or in the extirpated organ. That the dilatation of a few follicles, the hyperplasia of the stroma and cirrhosis, may produce such an array of symptoms—as the various neuroses—is entirely unproven and a priori very improbable." He also says: "We have several times obtained permanent results from castration in cases in which careful examination showed merely hyperplastic conditions of the ovary. I then ask what remains of the anatomical basis which

PRIMARY.

Non-inflammatory.
 No history of infection.
 Occurs in early life. (From puberty to thirty.)
 Often dysmenorrhœa since puberty.
 Intermenstrual dysmenorrhœic pains.
 Endometritis not constant.
 Amenorrhœa or delayed catamenia.
 Cystitis, a rare complication.

SECONDARY.

Inflammatory.
 History of infection with peritonitis.
 May occur at any period.
 Dysmenorrhœa after infection.
 Not so marked, or wholly wanting in some form.
 Always accompanied by endometritis. Menorrhagia or premature catamenia.
 Often a cystitis dating from the infection. (Particularly if gonorrhœal.)

Evidences in not a few cases of a granular and contracted kidney.

In a large per cent. of cases a marked arteriosclerosis can be found in some portion of the arterial system. No evidences of pelvic peritonitis.

Ovaries (one or both) usually prolapsed, firm, unyielding, globular in form, or small and exceedingly hard, but not adherent. Tubes usually not palpable.

Neurasthenia develops early, but is quickly superseded by one of the various neuroses.

Sometimes a subacute nephritis due either to a prior septic condition or extension from cystitis.

Evidences of a pelvic peritonitis.

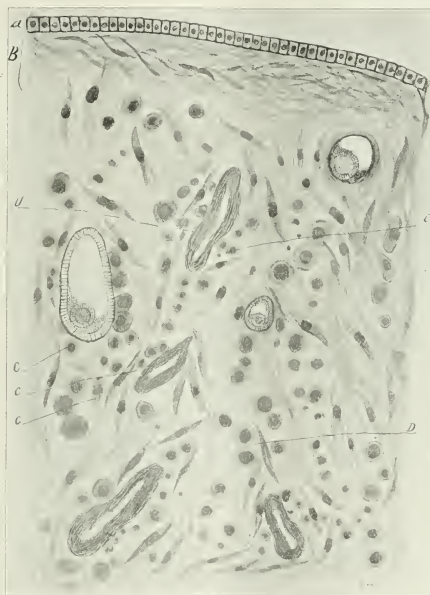
May be prolapsed, bound down by peritonic adhesions. Mobility of uterus impaired. The tubes usually palpable, and found increased in size.

Neurasthenia common. Neuroses rare.

supporting the prolapsed appendages by the use of tampons or pessaries. I have administered the desiccated ovary without obtaining the slightest effect on the symptoms, and no effect whatever on the condition. A great deal of stress is being placed to-day—especially by Continental writers—on the internal secretion of the ovary and its effect on the metabolism. I am as yet incredulous. I know of no way to relieve this class of patients except by castration.

CHRONIC OVARITIS.

A great deal may be done for a chronic ovaritis by general medical supervision, and by gynecologic treatment. Often attention to the general health is sufficient to relieve these patients of much suffering. Pelvic massage and galvanism with tampons soaked in ichthylol and glycerin carefully applied to exert a slight



SECONDARY OR INFLAMMATORY SCLEROSIS (DIAGRAMMATIC.)

- A—Germinal layer usually absent and replaced by round cells or connective tissue.
- B—Tunica not much thickened nor fibrous.
- C—Round-celled infiltration with increased nuclear elements as compared with the primary form; few fibrous elements also.
- D—Epithelial cells of the stroma.
- U—Thickened vessel-wall and seen near the surface.

TREATMENT.

For cirrhotic degeneration the internal administration of mercury and the iodids, together with general tonics, has been tried. Local application of poultices and blisters to the abdominal walls in the iliac regions; the painting of the vaginal vaults with iodine; faradization and galvanization to the cavity of the uterus, together with all sorts of almost indescribable methods have proven of no avail. There is some relief afforded by

pressure, will, in a few cases, greatly increase the mobility of the adherent uterus and its adnexa, and relieve to a great extent the dysmenorrhea and the ovarian pain. If the patient is nearing the climacteric, an attempt should be made to tide her over the remaining period of sexual activity, when her symptoms will gradually decline with the cessation of the periodic congestions of the pelvic organs. But if the examination proves that the inflammation has been extensive

and its results of some magnitude, operation alone will avail.

The following cases illustrate these points:

Mrs. B. M., aged 38 years, has had two children, the youngest 8 years old. She has had two miscarriages, both prior to birth of the last child. There were no instrumental deliveries nor puerperal fever. The menses first occurred at the age of 18 years, and were at first irregular, but later were regular without pain, lasting four days. The quantity varied but little, and was never profuse. Her general appearance was good. She weighed 140 pounds. A general examination proved negative, as was also her family history.

Six years ago she was suddenly taken ill, with intense pain through the abdomen, and chills followed by a high fever. Just prior to that acute attack, she had considerable leucorrhœal discharge, and urination was very painful and frequent. She was ill in bed for a number of weeks, but again gradually resumed her routine household work. Ever since that time she has suffered intense pain at each menstrual period. She has been compelled at these times to stay in bed during the first two days. The menses occur every three weeks, the flow being usually prolonged and increased in quantity over that of her earlier years. While her general physical condition has remained good, she has become extremely nervous, irritable and hypochondriac. She is easily depressed, and in these states loses control of her nerves—that is, she becomes hysterical. Urination is at times painful, the bowels are regular. Her digestion is much impaired, and she has frequent attacks of palpitation of the heart. The uterus was in retroversion, and could not be replaced: both appendages were prolapsed, and imbedded in firm inflammatory exudate. Slight manipulation occasioned severe pain.

In July, 1895, I removed both appendages, freed all pelvic adhesions, and suspended the uterus. Both tubes were enlarged, the walls thickened, and the fibrinated ends occluded. Both ovaries were imbedded in dense tissue, and were in a state of chronic inflammation. She has since passed through a series of severe trials, both of domestic and business nature, and has remained in most excellent condition.

Such is the history of all this class of cases. Your familiarity with them allows me to proceed to a report of several cases of the other variety—the non-inflammatory or primary cirrhotic and sclerocystic degenerations.

Mrs. L. S., aged 30, though married nine years, has had no pregnancies. The first menses occurred at 16 years. They were regular but painful, lasting seven to eight days, and at first profuse in quantity. Later she has been irregular, missing one and two successive periods, and suffering great distress at such times as the flow should have appeared. She has constant, never-ceasing pain in both ovarian regions—but particularly the right—with excessive exacerbations occurring at no stated period, but usually two or three times each month. She states that these pains are at times even greater in severity than the pains accompanying the flow, and are quite similar in character to the latter. She appears to be quite emaciated and of sallow complexion. She weighs ninety pounds, having lost much during the last two or three years.

Her mother died of cancer of the uterus. She had scarlet fever when a child, and has never been robust. A general examination was negative. She has been in poor health since 1887, for which she can assign

no cause. She complains of backache, frequent attacks of migraine and pains in the right groin, extending down to the thigh. She is much reduced in weight, and is still losing flesh and strength. She is unable to do the general household duties, but spends most of her time, when not confined to bed, in china-painting. She is morose and taciturn, though naturally of a lively disposition, and is ready to submit to any measure which promises a chance of relief.

I found on examination an enlarged and cystic cervix; and the body of the uterus was tender but not enlarged. Both ovaries were prolapsed and double the size of the average normal organ. She complained bitterly of pain during this examination.

June 28, 1895, I first curetted the uterus. The cervical canal was dilated, and both the external and internal uterine mouths were stenosed. The mucosa lining of the body was normal; that of the cervix indicated a hypertrophic glandular inflammation. Through a small incision in the abdominal wall I removed both ovaries and tubes. The tubes were normal; the left ovary was treble the normal size and completely occupied by numerous cysts varying greatly in size. Microscopic examination showed the framework to be composed of a dense fibrillary network with none of the epithelial or ordinary connective-tissue stroma remaining. The right ovary was about half the size of the former, and was of the type of sclerocystic degeneration.

It has invariably been my experience that the most pain is on that side in which the cirrhosis is most marked, and not dependent on the degree of prolapse of that organ.

In the fall of that same year she made an extended trip up the lakes, during which time she gained fifteen pounds in weight, and, better yet, regained all of her former cheerfulness of disposition. She is now in most active life.

Mrs. F. F., aged 25, a widow, has one child 5 years old, and has had no miscarriages. She was 16 years old when her first menstrual period occurred. They have always been irregular, attended with much pain, in duration from three to four days, and the quantity has always been scant. She had amenorrhœa for five periods during the past year. She is anemic and very thin, weighing 92 pounds, though she measures five feet and seven inches in height. Her general condition is very poor. She has a weak, rapid, arrhythmic, irregular pulse. A marked sclerosis of the radials, temporals, and right popliteal arteries is observed. There is an enlarged, tender, prolapsed right kidney, and a suspicious sound is heard in the apices of both lungs during expiration. The slight amount of expectoration showed no trace of the existence of tuberculosis. Examination of the urine was negative, though she complained of a frequent desire to urinate. She also complained of frontal headache, and tenderness of the eyeballs, which was relieved by Dr. Brunner, oculist.

She complained of backache, pains in both groins, and soreness over the entire abdomen, dysmenorrhœa and "spells of pain" during which she remained in bed usually two days. These "spells" came on as frequently as two to three times each month. Formerly she weighed 130 pounds, but has been losing during the past two or three years. She is easily fatigued and discouraged, and at such times usually "gives way to crying spells." Three years prior to the time of the taking of this history she had had a lacerated cervix

repaired. Pelvic examination shows a slight perineal tear, a roomy vagina, a small cervix, an enlarged and partially retroverted uterus, and both ovaries prolapsed—enlarged and globular in shape, tense and unyielding. There is no evidence of peritonitis.

She was under general and local treatment for three months, during which time she was fitted with glasses. A proper bandage was made for holding up the prolapsed kidney. The uterus was kept forward by a pessary, and congestion relieved by hot douches and boroglycerin tampons. Attention was given to the diet, and the regulation of bowel movements, and general tonics were administered. She gained five pounds in weight. Her headache and backache were relieved, but there was no cessation of the pains in the pelvis, which were, in her opinion, the source of all her ills. Accordingly, in July, 1895, I first curetted the uterus, and immediately opened the abdomen. I found no adhesions; both tubes were normal; both ovaries were sclerocystic. In both broad ligaments I found arteries and veins with greatly thickened cirrhotic walls, especially so on the right side, corresponding to the most painful side. Both appendages were removed.

During her convalescence particular care was given to massage of the right kidney. She rapidly gained in weight and in general health. She married again shortly after her operation, and has been able to carry out the duties of a mother to a number of children.

Miss F. McG., aged 20, had her first menses at 14, which were irregular during the first year. They have since been irregular. There was no severe dysmenorrhoea until two years ago, since which time this symptom has steadily increased in severity. There has been a scanty flow, lasting usually two or three days only. She is poorly nourished, weighs 98 pounds, having lost ten pounds during the last few months. She is very costive. Urination is normal. A general examination proved negative. She had typhoid fever in 1895, and since then all her symptoms have been much aggravated. She complains of general lassitude, great weakness after the least exertion, severe pain in the right groin, constant but aggravated, preceding and during each period, and backache. The appetite and digestion are fair. There is constipation and leucorrhoea. Her family say that she has become peevish and fretful, and altogether changed from her former usually happy nature.

The general examination was entirely negative. On pelvic examination the cervix was found eroded, the uterus in retroversion, both ovaries palpable, the left very much enlarged, spherical, tense, though not painful, the right ovary larger than normal, and giving the characteristic feel of a sclerocystic degeneration. In June, 1897, I curetted the uterus. On opening the abdomen I found a thin-walled ovarian cyst, the size of a hen's egg, and on the right side a much degenerated ovary of the sclerocystic variety. Both were removed.

Although on the second day an acute hepatitis developed, and she lay very ill for a number of days, she gradually recovered. She left the hospital in six weeks, and during the past summer has led an active, open-air life, indulging her heart's desire in cross-country riding on horseback.

I am indebted to Dr. Spence for drawing these beautiful charts from the microscopic slides submitted to him, and I feel that he has aided me greatly in bringing out the subject in so clear a light.

RELATIONS OF HEADACHE TO AFFECTIONS OF THE EYE.*

BY S. D. RISLEY, A.M., M.D.,

Attending Surgeon to Wills Eye Hospital; Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine.

PHILADELPHIA.

I am not unmindful of your courtesy in requesting me to speak to the Neurological Section on the ocular phases of headache. I have not accepted the honor, however, without many misgivings. The ophthalmologist, in common with a large portion of the profession, holds his breath, and treads with great circumspection when he approaches the mysterious precincts of the nervous system, that region in which his neurologic colleagues hold high carnival, and disport themselves in lighter vein. The subject chosen for your symposium, however, is one of great interest to the ophthalmologist, since so large a percentage of his patients suffer from headache. In the last one thousand private eye patients applying for treatment for all causes, 50 per cent. complained of this symptom, and a considerable percentage of this number came by the advice of the physician, or through the persuasion of some friend, complaining of headache alone, and were unconscious of any ocular defect. It would not be surprising, therefore, if the ophthalmic surgeon should be in danger of overestimating the significance of the ocular apparatus in the etiology of pain in the head.

It is now very generally recognized that eye strain and certain diseases of the eyes are, in a large number of persons, the sole and sufficient cause for headache. It is probably less generally recognized that ocular affections may be the unsuspected cause. Extended experience, however, has shown that, in other groups of patients who suffer from headache, there may be no necessary relation between existing ocular defects and the pain in the head. It is not an unusual experience to remove the eye strain by glasses, to the great relief of ocular symptoms, without any appreciable result in relieving the headache; or, certain kinds of pain in the head may be relieved, and others still persist. Moreover, it is quite common to find patients who suffer greatly from impaired vision, chronically inflamed and painful eyes, who never have headache or other reflex symptoms. Therefore, I very highly esteem this opportunity to discuss the possible relations between the ocular conditions and headache, together with certain other associated phenomena.

The subject should be approached with a feeling of marked conservatism. It is not unusual to have under treatment at one and the same time two patients with similar or identical ocular defects, one of whom has no symptoms other than weak, painful, or inflamed eyes, lowered sharpness of sight, and a blurred page; while the other is constantly in the slough of semi-invalidism, from constant pain in the head and other reflex symptoms, which, from exposure to light or persistent use of the eyes, or after some unusual exertion, culminate in more or less frequent and violent explosions of so-called "sick or nervous headache," both of whom find complete and lasting relief from glasses so nearly the same that they might be used interchangeably.

It is obvious, therefore, that in searching for an explanation of such phenomena we must look for individual peculiarities not directly referable to the eyes. It is

*Presented to the Section on Neurology and Medical Jurisprudence, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

true that difference of vocation or environment may, in such cases, be a sufficient explanation. That is to say, in one case persistent use of the eyes may be unnecessary, and in the other compulsory. One patient may be in good general health, the other the victim of some complicating diathesis, as for example, lithemia. Ambition to excel or the sanguine temperament may drive one into constant activity in spite of the pain occasioned by use of the eyes, while the other rejects the goal of ambition, unwilling to secure success, or to woo fame at the sacrifice of pain. But even here we see indications of difference in temperament; a suggestion of the phlegmatic individual in the one, and the neurotic in the other. I do not wish to trespass on the domain of the neurologist at this point, but simply to state the proposition that, given certain abnormal ocular conditions causing eye strain, other things being equal, the neurotic individual is more likely to suffer from headache and associated phenomena, than are those who can not be called nervous people.

Although it is now quite generally recognized that eye strain may be the cause of headache, the truth that ocular affections may be the unsuspected cause still stands in need of wider recognition. I am still seeing patients who have passed into middle life, having from youth been the victims of headache, who are cured of their life-long malady by the correction of ocular defects, the real cause of their suffering never before having been suspected by themselves, or by their physician. It is an interesting fact in this connection, in a large number of eye-strain patients, that the symptoms fall with great stress on the eyes without giving rise to headache or other reflex symptoms. That is to say, the eyes are painful, vision is more or less defective, they have blepharitis ciliaris, sympathetic conjunctivitis, styes, partial lachrymal retention, etc., but do not suffer from headache. It is true that pain in the head may also be present, but these patients do not, as a rule, belong to the headache group. I take it, however, that this group of patients is not the one which will most interest you as neurologists, since they so obviously fall into the hands of the ophthalmic surgeon. Those who suffer most severely from headache, demonstrably due to ocular defects or diseases, are often quite free from local symptoms, and frequently suffer for years without suspecting their eyes as the source of their trouble. If there are ocular symptoms, they occur *pari passu*; or come on after the reflexes, and are regarded by the patient as due to the headache. Patients have often told me that their "eyes were weak because they had a bad head," and submit quite reluctantly to eye treatment since they recognize no primary ocular disturbance.

The location of the pain in the head is usually suggestive. Vertex pain is comparatively rarely due to the eyes. In optic nerve disease, as in retrobulbar neuritis and atrophy, there is, in many cases, pain in the front of the head on top, but it is not a vertex pain. The pain, when associated with eye affections, occurs in the brow, occiput, back of the eyes, as a hemicrania, or in the temples, and in point of frequency in the order named. Simple eye strain due to error of refraction particularly in children, will usually give rise to brow pain. If associated with some abnormality of ocular balance, as insufficiency of the interni, esophoria, or a hyperphoria, there will usually be occipital pain also. If there is at the same time marked turgidity or inflammation of the choroid, with retinal irritation, or macular disease of the retina and choroid, there will be a tense postocular pain which shoots to the occiput, nape of the neck, even down

the spine and radiating to the shoulders. Temple pains are not infrequent. I have in a number of instances witnessed the relief from pain in the region of the heart, which had caused much anxiety, follow the use of glasses, or the tenotomy of an ocular muscle.

There is a wide variety of manifestation in different patients. Many suffer almost constantly from brow and occipital pain. It disturbs their rest at night, and they awake in the morning with a dull pain in the occiput or nape of the neck. One patient remarked that he always woke in the morning feeling as though he had a billet of wood for a pillow. Although rarely free from pain, they suffer more or less acute exacerbations produced by exposure to light, from prolonged use of the eyes, or by general fatigue, but the symptoms are never violent. Others, while like the first, are rarely free from pain, are subject to a steadily progressive aggravation of all the symptoms until they culminate in violent onsets of "sick or nervous headaches," which drive them to bed in a darkened room, from which they emerge after twelve or twenty-four hours with a dull, sore head, red and weak eyes, which are tender to palpation, and unduly sensitive to light. The explanation for the advancing symptoms, up to the point of crisis, is found in the steadily increasing hyperemia and turgescence of the vveal tract of the eyes coming on under use, or by exposure to light. The relief comes from the subsidence of the congestion which results from the confinement in a darkened room, the emesis, the administration of saline cathartics, the cold compresses over eyes and brow, etc., which are the means of treatment ordinarily adopted by the patient. They return to their usual vocations, only to pass again through the inevitable cycle of suffering. Many persons through a large part of their lives suffer these constantly recurring torments once a week, or more or less frequently. Some recognize the effect of exposure to strong light, or the extraordinary use of the eyes as factors in causing these violent onsets of pain, but others never do, and ascribe their suffering to "biliousness," to overfatigue, hunger, and many other things, never suspecting their eyes as the cause.

Many regard their recurring sick headache as hereditary, since one or both parents or other members of the family suffer in the same manner. They think that therefore it is useless to seek permanent relief. While it may be true that the neurotic tendency is a family trait, it is equally true, even more probable, that the anatomic defects on which errors of refraction or ocular imbalance depend are hereditary. The regularity with which defective eyes, e. g., hypermetropia with astigmatism, are handed down from parent to child is one of the most striking facts in ophthalmology. It is highly probable that the defective form of the eye-ball which produces both the ametropia and the abnormal attachment of the ocular muscles to the globe, and is the cause of faulty binocular balance, is the direct result of defects in the shape of the bony orbit, and this in turn is due to distortion in the skull. It is to the form of the skull that family resemblances are largely due, hence the great frequency of heredity also in ocular defects. It is in a word another example where disease and impaired function has a congenital anatomic basis for its existence.

While the nausea and emesis together with the ensuing general relaxation seem to afford more or less speedy relief in the cases of so-called "sick headache," there are others who suffer what they call "nervous headache," and who are rarely nauseated, but have violent pain, and find the coveted relief only in opiates, or analgesics. I recall

the case of a merchant, the head of a large mercantile establishment, who had a high degree of hypermetropic astigmatism, and right hyperphoria, who was rarely free from a dull occipital pain. Suddenly, while at his place of business, he would be attacked by a right hemicrania, preceded by phosphenes. Taught by many experiences, he would summon a cab to take him home. His wife described one of these exacerbations to me. Arrived at home, his fortitude entirely exhausted, he would ring the door bell violently, enter the house holding his head between his hands, and, unable to reach his bed, would throw himself on the parlor or hall floor in despair, perfectly beside himself in an agony of suffering, when he would burst into a flood of tears, roar with pain, making the most violent manifestations, alarming his wife, and children and servants, until the doctor came and relieved him by a hypodermic injection of morphia. These attacks were relieved by the correction of his refraction error, and a subsequent tenotomy of the right superior rectus, but he still suffers from dull occipital pain "after a hard day." Since the attacks often came on after some fancied indulgence at the table, or at his club, or after an evening at the theater followed by a supper, he ascribed them to deranged stomach and liver, and was, as a consequence, a victim of the cathartic habit.

Another illustrative patient of this type was sent to me by the late Dr. William Pepper, under whose care he had been for "epileptic seizures." He also suffered the sudden violent onsets of headache very similar to those suffered by the case just related, but the paroxysms culminated in total loss of consciousness, convulsions, frothing at the mouth, and wounding of the tongue, after which he would fall into a profound sleep, often lasting for several hours, from which he could not be aroused. I found a hypertrophic astigmatism with exophoria, and marked choroidal disease due to eye strain. He received suitable correcting glasses after the prolonged use of a mydriatic, and returned to his home in one of the interior cities of Pennsylvania. I heard no more from him for eight years. He then returned for some change in his glasses, and much to my surprise related that he had not had a single return of his headache or convulsions after the treatment of his eyes.

There is a group of patients, of whom I have seen many examples, who suffer attacks of severe headache after journeying by rail, or in a carriage, or after a shopping expedition, the unsuspected cause of which is some ocular defect. They are usually women, and the paroxysm is ascribed to fatigue. I recall the case of a woman who wrote by the advice of her physician from a distant city, for an appointment for the examination of her eyes, stating that she would not be able to come to my office for a day, or possibly two days after her arrival in Philadelphia, as she would be compelled to pass that time in bed in a dark room suffering from "sick headache." Would I not see her at the hotel? I did so, and found her as she had predicted, in the throes of a violent headache; nervous, exhausted, suffering from nausea, and fruitless attempts at emesis. I immediately instilled a mydriatic, directed cold compresses to the eyes and brow, and gave her bromid of potassium. She was completely relieved in an hour, rose, ate a hearty meal, and came to my office the following day. She had a very high grade of hypermetropic astigmatism, which was corrected by glasses. She returned to her home wearing them and on her arrival at once wrote to me that for the first time in her experience she had been able to enjoy a railroad journey, and had reached home in perfect comfort.

The facial twitchings of school children, with brow pain, irritability of temper, restlessness, inability to sit quietly for a moment, disturbed sleep, precarious appetite, all of which makes them the despair of their mothers or teachers, I have many times seen relieved by a pair of glasses. Whether these cases are to be classed as petit chora or not, it is certain that the eye strain was for them "the thorn in the flesh" which produced a constant irritation of the nervous system.

Ocular symptoms or headache not infrequently manifest themselves for the first time after an attack of acute illness, e. g., measles, scarlatina, or pertussis, and are not infrequently ascribed to the lowered vitality consequent upon disease. The ocular participation is therefore overlooked. Observation shows that even in adults the eye strain consequent upon a congenital defect or refraction may be borne without recognized symptoms up to a certain day which the patient fixes quite definitely as the time of breakdown. Not infrequently the breakdown comes with the depressing influence of an acute cold, after which the eyes and head are never comfortable, without correcting glasses, notwithstanding the fact that no trouble had before been experienced; or, he has his first headache after some extraordinary strain upon his physical endurance, and never finds relief except in a pair of glasses.

There is a considerable group of patients, usually men of affairs, between the ages of 40 and 50, who suddenly develop headache. As representing this group I recall the case of an eminent clergyman, aged 50. He not only had the care and responsibility of a large and influential parish, but often occupied the lecture platform, was the author of a number of books, and a frequent contributor to religious periodicals. He began to suffer from insomnia, and almost suddenly became the victim of severe occipital pain for which he sought the advice of his physician. He received a grave prognosis based on the theory of "cerebral hyperemia," and was advised to abandon his work for a year and seek relief in foreign travel.

Quite disheartened, he called upon me socially and related his condition. In detailing his symptoms it occurred to me that the occipital pain might be due to his eyes. He was to all appearances in perfect health, and was a remarkable example of stalwart manhood. At 50 years of age he had never worn a glass, notwithstanding the enormous amount of his literary labor. He received a pair of working glasses. His headache and insomnia disappeared at once, and although arrangements had been made for a long vacation, they were cancelled, and he went on with his work. In this case there could be no suspicion of a neurotic element entering as an etiologic factor. His symptoms were unquestionably the result of his neglect to neutralize by glasses the physiologic loss in the range of accommodation. A less vigorous man would have recognized the need of reading glasses at 43 to 45, instead of at 50 years of age.

There are many persons who have violent headaches not due to eye strain, but associated with pathologic conditions of the fundus oculi, as, for example, cases of retinitis macula lutea, hemorrhagic retinitis, or optic neuritis. It is not always clear in these patients whether the disease is a purely local one. That is to say, the condition seen with the ophthalmoscope, may often be regarded as an indication of intracranial disease, to which the headache may be reasonably ascribed.

Standing in marked contrast to the groups of patients already described is another group, members of which wander from one consulting-room to another, receiving slight changes in their glasses, each time enjoying tem-

porary relief from their complaints. It is quite true that many persons with delicately poised nervous systems are greatly benefited by the correction of very low degrees of astigmatism, since any attempt to abandon their glasses leads promptly to a return of their headaches, but I am convinced that in others the glasses afford relief by a species of suggestion, precisely as they would be relieved by the mummeries of a bonesetter, a "Christian Scientist," or Osteopath. As an illustration of this class of patients I recall the history of a patient, referred to me by Dr. H. C. Wood, who displayed marked reflex phenomena apparently due to eye strain. She had a nearly emmetropic right eye and a significant degree of astigmatism in the left which I sought carefully to correct. During one of her consultations in which she had made the most of her symptoms, she claimed such a dread of light that she could not bear to look at the table of test letters. This I knew was not true, and simply directed her positively to open her eyes and look at the letters, that there was no sufficient reason for her not doing so. She obeyed at once, and the subjective examination was made without further difficulty. This over, she took a chair near me as I sat at my desk to write a prescription for glasses. She placed herself on the very edge of the chair, sat erect while a tense expression came into her face, a far-away look in her eyes. Her fingers were clenched tightly into the palms of her hands, every muscle was tightly fixed, and she said, "Doctor! don't you think it would be a good thing to send me away from home on a journey? somewhere! anywhere! I am oppressed, I am stifled at home. My husband is an excellent man, but plain, stolid and matter-of-fact. He can't comprehend me. I am not like other women. I am like a delicate, tightly-strung harp, the vibrations of every string causing the most exquisite sensations. A beautiful poem or painting, the odor of flowers, the stars at night, an exquisite strain of music drive me wild with a delight that borders on pain." She received a pair of glasses which she has not been able to neglect, but I am convinced that the relief she experienced was not so much due to her glasses as to a few weeks of "rest cure" in the hospital. Certain it is that she returned to her home with the tightly strung "harp strings" relaxed to such a normal tension that their vibrations gave only such sensations as cause pain or pleasure to ordinary mortals.

The following conclusions may be regarded as established by clinical experience:

1. Abnormalities of the ocular apparatus are in a large group of patients the sole and sufficient cause of headache.

2. These abnormalities of vision may be the unsuspected cause, and therefore, the absence of symptoms obviously referable to the eyes does not exclude them as an etiologic factor in headache, insomnia, vertigo, petit chœra in children, and certain stomach derangements.

3. The recent or sudden development of symptoms, after attacks of severe illness, as typhoid fever, the exanthemata, etc., or in association with more or less acute exacerbations of some general dyscrasia, is not sufficient evidence against ocular participation in causing the symptoms.

4. The participation of the eyes as an etiologic factor in headache can be positively excluded only in the absence of ocular disease or after the most painstaking correction of any existing error of refraction or abnormality of binocular balance.

5. For the relief of reflex symptoms accurate corrections are essential, and these can be secured only by the more or less prolonged use of a strong cycloplegic.

6. Immediate relief by these corrections in a large group of patients is not to be expected, since the pain is frequently due to associated pathologic conditions of the fundus oculi, and these require time for cure.

HEADACHES OF GASTRO-INTESTINAL DISORDERS.*

BY FRANK BILLINGS, M.D.

CHICAGO.

Gastro-intestinal disturbance is a very common cause of headache. The gastric disturbance which may give rise to headache may depend on organic stomach disease, or may be associated with the many functional disturbances of the stomach and bowels. The gastro-intestinal disturbance which apparently causes headache in some individuals is manifest in others by some other form of nervous or bodily distress. Organic disease of the gastro-intestinal tract probably does not primarily cause headache. The resulting dyspepsia fermentation, constipation and lessened antiseptic action of the stomach secretions are the probable source of an auto-intoxication, which may result in a disturbance of the nervous apparatus, and headache may be one of the symptom expressions of the toxemia.

In functional disorders of the stomach, like the dyspepsia due to hygienic errors, the neuroses of the stomach associated with general or local nervous disorders, like neurasthenia and tabes dorsalis, and the gastric neuroses manifested often in pelvic disorders of women, in floating kidney, etc., are marked by many of the symptoms; constipation, pyrosis, flatulence, epigastric fulness and tenderness or pain as in organic gastric disease, and headache is quite as common if not more constant than in organic disease.

Disturbance of function with or without organic disease seems to be the main causative factor of headache in gastro-intestinal troubles.

There are many conditions of the body which may disturb the stomach which are themselves the chief causes of headache, but for which the stomach receives the blame. In all conditions of the body associated with marked anemia, with cardiovascular disease, with functional or organic diseases of the nervous apparatus, with disease of the excretory organs—kidneys, skin, etc.—the nervous apparatus is much disturbed and perception of pain may be so exaggerated, that headache may result from any slight cause—"a last straw" to the overburdened irritable nervous apparatus. In short, in many such cases the headache is, like the stomach disturbance, a result of some bodily condition. On the other hand, the dyspeptic or the individual with chronic gastritis may, in consequence of dietary errors, suffer, in time, from malnutrition including anemia and a resulting nervous apparatus and headache.

It is sometimes very difficult to assign the headache to the proper cause when there are present, with the gastro-intestinal disorder, conditions of malnutrition, anemia, neurasthenia, etc. Heredity and the personal equation play an important part in many of these mixed cases. One finds a history of stomach disturbance with headache in families, and apparently quite as much an inheritance of poor digestive organs as the unstable nervous apparatus of neurotic families. The individual equation is also apparent in stomach disturbance and it must be confessed that the patient is usually a hysteric or a neu-

*Presented to the Section on Neurology and Medical Jurisprudence, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

rastrhenic and the headache and the gastric trouble therefore due to the same general condition.

Fundamentally, headaches due to gastro-intestinal disorders are probably toxic. Of this we have no exact proof. The clinical conditions which exist in all headaches associated with disturbance of the stomach and intestine are most easily explained on this theory, and further emphasized by the therapeutic management, which gives the greatest relief to the patient.

An acute toxemia may occur in a perfectly healthy individual, from the overingestion of food, from the ingestion of indigestible food or from food contaminated by preservative chemicals or from food contaminated by toxins of decomposition. The epigastric pain and tenderness, the nausea and vomiting, the diarrhea or constipation, the depressed nervous apparatus; the cold extremities, small pulse, headache, dizziness, etc., during the acuteness of the attack, are typical of intoxication. We presume that the headache sometimes associated with cases of atony, dilatation and ptosis of the stomach is due to a toxemia by the poisons absorbed from the fermenting or decomposing contents of the stomach.

Not headache only, but weariness, melancholia, tinnitus, vertigo, sleeplessness, palpitation of heart, syncope and tetany or convulsions may occur. Atony, dilatation and ptosis may occur in cancer, ulcer, chronic gastritis and in constitutional states, and the above-named phenomena in the diseases named.

"Bilious" attacks with nausea, vomiting, constipation, heavily coated tongue, foul breath, with headache, nervous depression, etc., are conditions apparently of chronic recurrent intoxication usually associated with gastro-intestinal dyspepsia, imperfect oxidation and assimilation by the liver and aggravated by defective excretion by the skin, liver and bowel. The idea of intoxication by bile, to which these characteristic symptoms were thought to be due and which gave it name, is no longer accepted as causative, inasmuch as headache and many of the other phenomena named are not often present in real cholera.

Chronic constipation may cause headache, and when it occurs it is doubtless toxic. However, in many cases of severe constipation, especially among women, no headache, or indeed no other nervous symptoms may appear. We have all seen individuals who were perfectly comfortable with constipation, the bowels moving only once a week or even at a longer interval. Again, constipation is such a common occurrence in so many other bodily conditions that it is fair to assign the nervous phenomena, including the headache, to the combined effect of the general or local state plus the effect of the toxemia due to the constipation. In some individuals constipation apparently produces depression of spirits, irritable temper and headache, and the symptoms disappear with a thorough evacuation of the bowels.

The toxic substances causing headache are really unknown. Bunge's theory, that the stomach is an organ of protection, rather than an organ of nutrition, by disinfection of the ingesta before they pass on to the intestine, where the digestion properly takes place, is worthy of much consideration. The acid contents of the stomach we know protect one against infection from cholera and typhoid. The presence of acids also prevents the formation of toxins from albuminous foods. It is possible, therefore, that the acidless contents of the stomach in atony, dilatation, etc., may allow the formations of ptomaines, Brieger's peptoxin, acetones, diacetic acid and other poisons which the normal acid gastric juice would not permit.

Senator, Bamberger, Lorenz, Haig, von Jaksch, von Norden, Bouchard, Rachford and many others have presented theories of auto-intoxication in gastric-intestinal disease and ascribed the intoxication to leucotoxins—uric acid, paraxanthin and xanthin—ptomaines, peptoxin, acetone, diacetic acid, etc. Some of these poisonous principles have been found in the decomposed stomach contents, and others have been found in the urine during toxic seizures. Furthermore, the isolated poisons injected into the bodies of animals have produced toxic symptoms similar to the phenomena associated with the gastro-intestinal disease.

Headache due to gastro-intestinal disturbance is said to be located definitely. In my experience this is not true. The brow of the whole frontal region is the most common seat, but may be occipital, vertical or general. It may be dull or sharp in character, with or without a sense of fullness or throbbing, and is usually aggravated by noises, bright light or by mental or physical effort. In acute attacks, nausea and vomiting usually occur. In the more chronic forms nausea may occur and rarely vomiting.

The diagnosis of headache due to gastro-intestinal disease or disturbance may be difficult. One must remember that gastro-intestinal disturbance, including constipation, is frequently secondary to states of general malnutrition and anemia, also to neurasthenia and other neuroses, to local disease of the skull, meninges or brain, to disturbances of the eye, ear and nose, to pelvic disorders, etc., and that the headache is due primarily to one or more of these conditions aggravated by the secondary gastro-intestinal disturbance. Indeed, the increasing experience of years has constantly narrowed the writer's cases primary of gastro-intestinal headaches and constantly broadened and increased the cases of headache due to general conditions of malassimilation, malnutrition and faulty excretion in which the gastro-intestinal condition was recognized as one of the results of an unhygienic life; a result which doubtless does aggravate the pre-existing poor general conditions and therefore becomes a secondary causative factor of headache.

Decomposed stomach contents, the presence of gastric ulcer, or cancer, chronic gastritis, duodenitis with intestinal indigestion and constipation with headache, and especially when the history and examination show no other abnormal conditions, will justify the diagnosis of headache due to primary gastro-intestinal disease.

Migraine or a condition much resembling it may sometimes be due to gastro-intestinal auto-intoxication. The diagnosis can be verified only by the cessation of the attacks after the removal of the gastro-intestinal cause.

TREATMENT.

Treatment of headaches of gastro-intestinal origin is palliative and curative.

Palliative: Remove the source of the poison by emptying the stomach, by emesis or lavage; move the bowels by cathartic or by colonic flushing; promote excretion of the poison from the blood by diluent drinks to aid skin activity and diuresis, and relieve the pain by small doses of the bromids combined with caffeine, or by the cautious use of phenacetin or some of the other petroleum derivatives or, in very severe cases, by a small dose of morphia hypodermically. In incurable organic disease of the stomach palliation will be the limit of treatment.

Curative treatment will consist of the application of the laws of hygiene, modified to suit the individual case; a selected diet for each individual; the free use

of pure water as a diluent drink; recreation in the form of physical exercise or physical rest, commensurate with the mental activity or physical tire of the individual; the correction of irregular habits of sleep, of time of taking food and of exercise; the withdrawal of tobacco, tea, coffee and alcoholic drinks, which is usually necessary, and especially in the patients who suffer from the neurosis. Lavage the stomach when necessary and overcome the constipation by hygienic measures, if possible without drugs. In the conditions of malnutrition and anemia, give restorative tonics and an abundant simple diet. In short, a sensible hygienic life will not only prevent the headache, but will usually remove the gastrointestinal disease or cause.

100 State Street.

QUANTITATIVE ESTIMATION OF ALBUMIN IN THE URINE.*

BY CHAS. W. PURDY, M.D., LL.D.
CHICAGO.

Our present lack of a uniform method of expressing quantities of albumin in the urine detracts much from the value of all our methods; indeed, it renders the subject very confusing. As commonly employed, the term "percentage of albumin" is applied indifferently to gravimetric and volumetric measurements, as though they were synonymous, when, as a matter of fact, the two possess the most widely different significations. Thus, we commonly hear and read of percentages of albumin in the urine ranging from 20 to 40, etc., without further qualification. Such amounts expressed by actual weight would be a physical impossibility, since the proportion of albumin in the blood-serum itself never exceeds 9 per cent., and it would therefore be clearly impossible for the proteid contents of a fluid derived directly from the blood—such as the urine—to exceed that in the blood itself. As a matter of fact, the albumin in the urine expressed gravimetrically, rarely rises above 2 per cent., and perhaps never exceeds 3 per cent. It would therefore seem beyond question that at present we greatly need for clinical purposes some rapid, accurate, and ready method for estimating albumin in the urine, coupled with a more definite and exact method of expressing results obtained.

The author of this paper claims to have recently supplied this want, but before entering into a description of his method a brief survey will be taken of the more prominent methods heretofore employed.

THE GRAVIMETRIC METHOD.

The process consists in coagulation of the albumin, which may be accomplished either by boiling, or by means of a chemical agent; the succeeding steps being filtering out the albumin, collecting, drying and weighing.

Coagulation by Heat.—In this process a certain quantity of urine is taken—say 100 c.c.—a few drops of acetic acid added until the urine is distinctly acid, and then it is filtered. The urine is then put into a flask and gradually heated to boiling. The boiling should be continued for a half minute, and the urine then passed through a filter, the weight of the latter having been first ascertained and noted. The flask is next washed with distilled water, to secure all the adherent particles of albumin, and the contents of the flask are then again thrown on the filter. Next, the albumin is washed with boiling distilled water, by means of a pipette, the jet

being directed so as to wash the albumin toward the center of the filter. The washing should be continued until the albumin becomes perfectly clean and white. Sometimes it is necessary to use hot alcohol to cleanse the albumin. The filter is next placed in an oven, the temperature of which is 100 C. (212 F.), and then left until desiccation is complete. Drying is known to be complete when two weighings at an interval of an hour are identical. From the whole weight that of the filter is deducted, and the difference represents the weight of albumin in 100 c.c. of urine, from which the whole amount may be readily calculated. The tediousness of the process is its chief drawback for clinical purposes, since it can not be carried out in less than five or six hours.

TITRATION METHOD OF TANRET.

This method consists in precipitating the albumin by means of double iodid of mercury and potassium solution, and estimating the amount of albumin by the amount of mercuric solution required to precipitate all the albumin. Thus, one drop of the precipitating solution delivered from a pipette of standard size precipitates exactly 0.005 gm. of albumin. Therefore as many drops as it takes to precipitate all the albumin in a given quantity of urine represents that number of times 0.005 gm. of albumin present.

The formula for the precipitating solution is: Potassium iodid 3.22 gm., hyd. bichlorid 1.35 gm., aqua destil. to 100 c. c. The formula for the confirmatory solution is hyd. bichlorid 1 gm., aqua destil. to 100 c.c.

Process.—It will be more convenient to always conduct the test with a certain quantity of urine—say 10 c. c.—as in such cases the number of drops of the solution it takes to precipitate all the albumin in 10 c. c. of urine will represent so many half grams of albumin per liter. Thus, if it takes 10 drops of the precipitating solution to precipitate all the albumin in 10 c. c. of urine, then we have 0.05 gm. of albumin in the 10 c.c. of urine, which gives us 5 gm. albumin per liter. We proceed by then taking 10 c.c. of the albuminous urine and adding to it 2 c. c. of acetic acid, and stirring well with a glass rod. Next the precipitating solution is added, drop by drop, stirring thoroughly each time. After the addition of each drop of the precipitating reagent, a drop of the urine is placed on a porcelain dish or tile and a drop of the confirmatory solution is brought into contact therewith. As soon as a yellowish-red color appears all the albumin is precipitated, and the process is completed. The amount of albumin may at once be determined by taking the number of drops of the precipitating reagent employed, subtracting 3 as having been used in excess to make the color development perfectly apparent, and considering the remainder as so many half grams of albumin per liter, or so many 0.005 grams in the 10 c. c. of urine.

So long as any albumin remains in solution in the urine, the precipitating reagent will not form red iodid of mercury when the bichlorid solution is added, but it immediately does so when all the albumin is precipitated, therefore the bichlorid solution constitutes a perfect and beautiful indicator.

The above test is a fairly ready and rapid method which might be made available for practical clinical work were it not for the fact that it can not be depended upon in point of accuracy. As is well known, Tanret's reagent precipitates all known proteids in the urine, and unless corrected by means of heat, many of these would often be estimated for albumin. All alkaloids likewise are thrown out by this reagent. In short, if this test

*Abstract of paper presented to the Section on Practice of Medicine, at the Fifteenth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

be employed cold, as directed by its author, it can not but prove entirely untrustworthy and misleading.

DIFFERENTIAL DENSITY METHOD OF LANG, HOEBLER AND BORNHARDT.

This method is based upon the difference in the specific gravity of the urine before and after coagulation and removal of the albumin. According to Haebler, the difference must be multiplied by 210; and according to Bornhardt, it must be multiplied by 415 in order to find the percentage of albumin in the urine. Neubauer states that his observations show that Haebler's quotient is absolutely false, and, moreover, that Bornhardt's number with careful manipulation yields only tolerable results when the amount of albumin in the urine is not too small: but in small amounts the limit of error is very great. Halliburton says of this process: "The supposed constant factor is from its very nature a variable one, and a simple algebraic demonstration of this will be found in a paper by Huppert and Lahor!"

THE OPTICAL METHOD.

The principle of this method, proposed by Vogel, consists in gauging the amount of albumin by the degree of transparency of the urine after precipitation of the albumin. Various modifications of this method have been proposed, among the most simple of which is that of George Oliver. Thus, standard lines have been adopted by Oliver, of different thickness or width; corresponding to the different percentages of albumin, according to their degrees of visibility through a certain stratum of urine.

CIRCUMPOLARIZATION.

If the amount of albumin in the urine is not very small, and the urine is not too dark in color, and if it is rendered perfectly clear on filtering, the albumin may be estimated by means of the polarizing apparatus of Soliel-Ventizke. An observing-tube 200 mm. long is employed, and after filling and placing in the apparatus, by turning the compensator, the two halves of the field of the double plate are made exactly isochromatic. The zero point of the nonius now lies on the left side of the zero point of the scale, and each division, with a tube 200 mm. long corresponds to 1 gram of albumin in 100 c.c. of urine; and each division of the nonius to 0.1 gm.

ESBACH'S VOLUMETRIC METHOD.

For clinical purposes this method has attained very great popularity, chiefly on account of its simplicity, rather than from its accuracy. The process is simple in the extreme, although it takes twenty-four hours to complete the process. This method is based upon the fact that picric acid precipitates all the albumin in the urine at ordinary temperatures, and the assumption that the precipitate deposits in a uniform state and degree of density through gravitation, permitting volumetric measurement which corresponds with gravimetric measurement. The fact is incontestable, but the assumption is far from accurate.

The apparatus consists of a tube not unlike an ordinary test-tube in shape and size, but much thicker and graduated on the side so as to indicate the amounts of deposits, representing in grams and fractions thereof the albumin per liter of urine. The standard reagent is composed of 10 grams pure picric acid, 20 grams citric acid, distilled water to 1000 c.c.—1 liter.

Process.—The urine is poured into the albuminometer to the mark U, and the reagent is added to the letter R; the tube is then closed with a stopper and in-

verted a number of times until the urine and the reagent are thoroughly mingled. The tube is then stood in a rack for twenty-four hours, when the amount of albumin may be read off as indicated by the scale in grams per liter of urine. If it be desired to know the percentage of albumin in the urine, instead of the number of grams per liter, remove the decimal point one figure to the left—thus 5 grams per liter would be 0.5 per cent.

This method is simple and convenient; but, unfortunately, the results are only approximately accurate for the following reasons: In the first place, the reagent—picric acid—throws out and measures peptones, albumoses, nucleo-albumin, and practically all proteins met with in the urine in addition to alkaloids if present. In the second place, the force of gravitation, which is depended on for securing uniform packing of the albumin, is inadequate to overcome the lesser forces which often arise from varying conditions in the test itself and its physical surroundings, thus the slow chemical changes in progress between the reagents, or between the latter and the urine, or even in the latter alone, are often sufficient to liberate sufficient gases to completely overcome the force of gravitation, and the albumin often arises *en masse* to the surface. In a less degree the quantity of albumin itself, the specific gravity of the urine, and the surrounding temperature furnish opposing forces to that of gravitation, which disturbs uniformity of results and defeats the accuracy of the process. Observations in the writer's laboratory have shown conclusively that Esbach's method, with every precaution, is subject to constant and sometimes very wide errors.

THE AUTHOR'S CENTRIFUGAL METHOD.

It will be seen from the brief glance at the various quantitative methods just considered that the clinician demands something more accurate and ready for practical work than at present is available. The method herewith brought forward and recommended for practical clinical work is the result of five years' experimentation, with the details of which I will not take your time: The process in brief consists of the following steps: Precipitation of the albumin in carefully graduated percentage-tubes of 10 c.c. of the urine by means of 2 c.c. of 50 per cent. acetic acid and 3 c.c. of 1 to 10 aqueous solution of potassium ferrocyanid; after mingling the urine and reagents, the tubes should stand for ten minutes to ensure entire precipitation of the albumin. At the end of ten minutes the percentage-tubes are placed in a centrifuge, the radius of which with tubes in position must be exactly $6\frac{3}{4}$ inches. The tubes are revolved for exactly three minutes, at a uniform speed of 1500 revolutions per minute. The tubes are next removed and the amount of albumin is read off in bulk percentage, which, by the aid of accompanying table, is converted into percentage by weight and grams per fluid ounce. It will be observed that the time necessary to carry out this test need not exceed fifteen minutes, and as a result of many observations in the writer's laboratory in which the results were compared with the gravimetric method it has been found that the errors arising by this method need never amount to more than 0.01 per cent. Such minimal errors are of no practical import, being in fact no greater than ordinarily claimed for the gravimetric method itself.

To insure the most accurate results the following details should be observed: The urine should first be filtered and its chemical secretions ascertained, and if found to be neutral or alkaline it should be rendered frankly acid by the careful addition of a few drops of

acetic acid, great excess being avoided. Next, if the quantity of albumin be excessive the urine should be diluted with one or more volumes of water until the volumetric percentage does not exceed 10 or at most 15 per cent. Observations conducted in the writer's laboratory have determined the fact that accurate and uniform volumetric measurements of albumin in the urine are only possible when the volumetric percentage does not exceed 10 per cent., and this applies both to gravitation and centrifugal force.

With regard to the reagents: the 2 c.c. of 50 per cent. acetic acid should be added to 10 c.c. of the urine, the tubes should be inverted a number of times to insure thorough mingling of the acid with the urine; then 3 c.c. of the 1 to 10 ferrocyanid of potassium should be added, the tubes again inverted till all are well mingled, and lastly the tubes should be stood aside for ten minutes to insure entire precipitation of the albumin. Lastly, with regard to packing and measurement: The first and most important essential is an efficient centrifuge. The Purdy electric centrifuge possesses all the essentials for exact work. If this is at hand very few additional suggestions are necessary. If not, then a centrifuge must be employed that possesses certain essential features or is capable of such modification as will include these essentials, which are as follows: *a.* The percentage-tubes must be accurately graduated in tenths of a c.c. up to .15 c.c. *b.* The arm of the centrifuge should possess a radius of exactly $6\frac{3}{4}$ inches, that is to say, the linear distance from the center of the axle to the tip of either tube must be just $6\frac{3}{4}$ inches. *c.* The motor must be capable of an even and sustained speed of 1500 revolutions per minute, with the required radius, and carrying one ounce of urine. *d.* Lastly, some reliable method of gauging the exact speed of the motor must be employed. Any centrifuge that fulfils the above named requirements will give accurate results, as indicated by this method and the accompanying table.

PURDY'S QUANTITATIVE METHOD FOR ALBUMIN IN URINE.
(CENTRIFUGAL.)

Showing the relation between the volumetric and gravimetric percentage of albumin obtained by means of the centrifuge with radius of $6\frac{3}{4}$ inches; rate of speed 1500 revolutions per minute; time three minutes.

Volumetric percent- age by centrifuge.	Percentage by weight of dry albumin.	Grains per fluid ounce dry albumin	Volumetric percent- age by centrifuge.	Percentage by weight of dry albumin.	Grains per fluid ounce dry albumin	Volumetric percent- age by centrifuge.	Percentage by weight of dry albumin.	Grains per fluid ounce dry albumin
1 ₄	0.005	0.025	13 ₁₂	0.281	1.35	31 ₁₂	0.656	3.15
1 ₂	0.01	0.05	14	0.292	1.4	32	0.667	3.2
3 ₄	0.016	0.075	14 ₁₂	0.302	1.45	22 ₁₂	0.677	3.25
1	0.021	0.1	15	0.313	1.5	33	0.687	3.3
1 ₄	0.026	0.125	15 ₁₂	0.323	1.55	33 ₁₂	0.698	3.35
1 ₂	0.031	0.15	16	0.333	1.6	34	0.708	3.4
1 ₂	0.036	0.175	16 ₁₂	0.344	1.65	34 ₁₂	0.719	3.45
2	0.042	0.2	17	0.354	1.7	35	0.729	3.5
2 ₄	0.047	0.225	17 ₁₂	0.365	1.75	35 ₁₂	0.74	3.55
2 ₁₂	0.052	0.25	18	0.375	1.8	36	0.75	3.6
2 ₃	0.057	0.275	18 ₁₂	0.385	1.85	36 ₁₂	0.76	3.65
3	0.063	0.3	19	0.396	1.9	37	0.771	3.7
3 ₁	0.068	0.325	19 ₁₂	0.406	1.95	37 ₁₂	0.781	3.75
3 ₁₂	0.073	0.35	20	0.417	2.	38	0.792	3.8
3 ₂	0.078	0.375	20 ₁₂	0.427	2.05	38 ₁₂	0.801	3.85
4	0.083	0.4	21	0.438	2.1	39	0.813	3.9
4 ₁	0.089	0.425	21 ₁₂	0.448	2.15	39 ₁₂	0.823	3.95
4 ₁₂	0.094	0.45	22	0.458	2.2	40	0.833	4.
4 ₃	0.099	0.475	22 ₁₂	0.469	2.25	40 ₁₂	0.844	4.05

5	0.104	0.5	23	0.479	2.3	41	0.854	4.1
5 ₁₂	0.111	0.55	23 ₁₂	0.49	2.35	41 ₁₂	0.865	4.15
6	0.125	0.6	24	0.5	2.4	42	0.875	4.2
6 ₁₂	0.135	0.65	24 ₁₂	0.51	2.45	42 ₁₂	0.885	4.25
7	0.146	0.7	25	0.521	2.5	43	0.896	4.3
7 ₁₂	0.156	0.75	25 ₁₂	0.531	2.55	43 ₁₂	0.906	4.35
8	0.167	0.8	26	0.542	2.6	44	0.917	4.4
8 ₁₂	0.177	0.85	26 ₁₂	0.552	2.65	44 ₁₂	0.927	4.45
9	0.187	0.9	27	0.563	2.7	45	0.938	4.5
9 ₁₂	0.198	0.95	27 ₁₂	0.573	2.75	45 ₁₂	0.948	4.55
10	0.208	1.	28	0.583	2.8	46	0.958	4.6
10 ₁₂	0.219	1.05	28 ₁₂	0.594	2.85	46 ₁₂	0.969	4.65
11	0.229	1.1	29	0.604	2.9	47	0.979	4.7
11 ₁₂	0.24	1.15	29 ₁₂	0.615	2.95	47 ₁₂	0.99	4.75
12	0.25	1.2	30	0.625	3.	48	1.	4.8
12 ₁₂	0.26	1.25	30 ₁₂	0.635	3.06	.....	.....	.....
13	0.271	1.3	31	0.646	3.1	.....	.....	.....

Test—2 c.c. of 50 per cent. acetic acid and 3 c.c. of 10 per cent. solution of ferrocyanid of potassium are added to 10 c.c. of the urine in the percentage-tube and stood aside for ten minutes, then placed in the centrifuge and revolved; rate of speed and time as stated at head of the table. If albumin is excessive dilute the urine with water till volume of albumin falls below 10 per cent. Multiply result by the number of dilutions employed before using the table.

This method has now been in daily use in the writer's laboratory for the past six months, where it has afforded the greatest possible satisfaction. The advantages claimed for this method over all others are its rapidity, simplicity, accuracy and comprehensiveness in expressing results, the volumetric percentage, the gravimetric percentage, the number of grains per ounce and the total amount by weight in twenty-four hours all being apparent by a single glance at the table.

57 East Twentieth Street.

ACCIDENTAL OR SPURIOUS ALBUMINURIA.*

BY CHARLES G. STOCKTON, M.D.

BUFFALO, N. Y.

The term accidental albuminuria as here used relates not only to the presence of albumin in the urine exclusive of disease of the kidney, but also of the various conditions aside from recognized kidney disease, which permit of the passage of serum albumin through the renal parenchyma into the urinary tubules. In other words, the term is employed to include those cases of albuminuria in which albumin finds its way into the urine from the pelvis of the kidneys, from the ureters, the bladder and the genitalia.

Albumin thus appearing possesses indirect interest to the student of internal medicine, because he must be able to exclude albumin arising from the sources above mentioned before he can affirm that he has to deal with albumin coming from the kidneys. As a matter of exclusion, therefore, the question must be made a familiar one.

Accidental albuminuria is of direct interest to the physician, because it is one of the diagnostic data for the recognition of pelvic renal diseases, urethritis, and cystitis. The occurrence of albumin in pyelitis is almost constant while, in quantity, it varies with the character of the inflammation. It seems to bear direct ratio to the extent of pus formation in the pelvis of the kidney. When there is an inflammatory edema of the pelvis of the kidney, the exudation of albumin may be considerable. Occasionally in tubercular disease of the pelvis albumin may appear in small amount, but as the disease advances the albumin is more abundant, though this may be frequently explained by the fact that the parenchyma of the organ is at the same time involved. In

* Presented to the Section on Practice of Medicine, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

calculus of the kidney, albumin at least in traces is rarely absent, nor is it seen in very large amounts.

In all these affections we expect to find the urine acid in reaction, sometimes sharply so, and the appearance of pus, blood and mucus either by macroscopic or microscopic examination, and very often by both. Upon these facts, and on the fact that the tube-casts are absent, we are able to infer that the albumin is derived from a point below the parenchyma of the kidney.

Not enough attention seems to have been called to the undoubted fact that traces of albumin are generally found in that really important affection, ureteritis. This condition, sometimes mistaken for appendicitis, salpingitis, or irritable ovary, is extremely common in victims of lithuria and oxaluria, especially in females. Very often there results an irritable bladder with frequent urination of very acid urine, containing traces of albumin, epithelium, and mucus. Pus-cells are common and also a few red blood-corpuscles.

I have twice seen this affection, in an acute form, produced in the right ureter following parturition in women having floating kidney. In each case there was evidence of irritation of the pelvis of the kidney, and it is believed that this trouble was induced by transient hydronephrosis occasioned by pressure of the fetal head on the right ureter. Both cases were seen by my colleague, M. D. Mann, who concurred in the view that there was no infection in the genital tract, and that the chills, high temperature, headache and profound nervous excitement resulted solely from the trouble with the ureter and renal pelvis.

These cases were both severe; the temperature in one reaching 106 degrees, and the other going above 104; the febrile paroxysms not altogether ceasing after ten days. In these instances the urine drawn with the catheter contained sufficient albumin to cause a slight precipitate with heat and acid, large numbers of pus cells, red blood-corpuscles and epithelium, but at no time were any tube-casts observed, nor was the quantity of urinary solids diminished. In both cases the patient made a perfect recovery, and at no subsequent time showed evidences of renal disease save such peculiarities of urine as are commonly associated with nephropoiesis.

We have all seen albumin accompany the escape of a renal calculus into the bladder. A calculus having found its way into the bladder excites sufficient irritation to evoke a slight exudation of albumin from that organ. Here also we find pus-cells and mucus, as well as bladder epithelium, in the urine. There should be little difficulty in recognizing the albuminuria of cystitis. The well-known symptoms of the disease, together with the abundance of pus and mucus, bladder epithelium and alkaline reaction point at once to the source of the exudation. The error of assuming that because there is a cystitis there is not at the same time a pyelitis is more likely to be made, or a real nephritis. Particularly is this true of paralytics. I well remember a lesson taught me years ago by Gouley, in this pregnant sentence: "Most victims of paraplegia die from uremia secondary to infection of the bladder." According to my observation this is true. It can never be considered safe to allow urine containing albumin to go without frequent microscopic examinations.

In the male it is not uncommon to find albumin associated with inflammation of the prostatic urethra, the prostate, and the seminal vesicles. Needless to say, such conditions usually accompany or follow gonorrhoea. Everyone has seen instances of men occasionally showing traces of albumin in the urine, generally associated

with pus, sometimes traces of blood and always mucus, and occasionally some one has been so unwary as to pronounce this affection to be albuminuria and probably Bright's disease. Victims of spermatorrhea not infrequently show traces of albumin in the urine. It is surprising that this is not more frequently the case. Its presence is probably owing to catarrh of the seminal vesicles and irritation of the prostate. It seems hardly necessary to call attention to the vagina as a source of albumin in the urine. If one makes the blunder of filtering the urine before microscopic examination, as I have known to be done, it is possible that he may be led astray. I find that it is the part of wisdom to request women who show albumin in the urine, accompanied by pus, to thoroughly irrigate the vagina and external genitalia before voiding the urine that is to be preserved for examination.

In closing, it should be stated that accidental albuminuria is not to be disregarded, and the source of the albumin should always be most carefully examined into. It should also be reiterated that when albumin is found originating in the bladder, the ureter or the pelvis of the kidney, the urine should be frequently studied to make sure that infection is not invading the more important structures of the kidney.

DISCUSSION.

DISCUSSION ON PAPERS OF DRs. STOCKTON AND PURDY.

DR. ARTHUR ELLIOTT, Chicago.—The significance of albumin in the urine in organic kidney disease has become lessened during recent years, and has been deposed from the position it once occupied in clinical esteem. Had Dr. Musser's paper been read, reference would doubtless have been made to cases of nephritis unaccompanied by albumin in the urine. These cases are, I am sure, more frequent than is generally supposed. Examination of the twenty-four hours' collected urine, with determination of urea and other urinary solids, and microscopic examination of the urine sediment, constitute in conjunction with the information elicited by physical examination a far more reliable basis of diagnosis than does the mere presence or absence of albumin. In cases of interstitial nephritis, albuminuria may be disregarded in arriving at a diagnosis, for its inconstancy in this lesion is notorious, the urine of quiescence being frequently free from albumin, but not so during activity. A point in the clinical aspect of albuminuria, which might be referred to, is the albuminuria accompanying gastro-intestinal disturbances. The urine under such circumstances is of high specific gravity, contains excesses of indican and throws down acid elements. I am inclined, as the result of such observations as I have been able to make, to believe that the albuminuria is the result of irritation of the renal secreting structure by certain toxins of intestinal derivation. This form of albuminuria, although as a rule slight, is contemporaneous with the gastro-intestinal dyspepsia. The albumin, centrifugally estimated, ranges from a faint trace to 2 or more per cent. bulk.

Dr. Purdy's method of estimating the amount of albumin in the urine is a very accurate and beautiful one. Personally I have been using the centrifuge for a number of years, following the original directions given by Dr. Purdy for the approximate determination of albumin. This I have found to be readier and quite as satisfactory as any of the mechanical means. It has been, however, of little value except for clinical and comparative purposes, because of the impossibility until now of converting the bulk percentage into definite quantitative amounts. This procedure is rendered easy by Dr. Purdy's table, and correct estimation is possible.

DR. A. L. BENEDICT, Buffalo, N. Y.—I want it distinctly understood that I do not come here to furnish wisdom, but to obtain some. In connection with albuminuria we occasionally find so-called peptonuria, and yet there is no true case of peptonuria on record. The only cases published were based on a test which was not correct. Thus, instead of peptonuria, we should say albumosuria. A definition of peptonia, "that soluble proteid which is not thrown down by ammonium sulphate." In testing for albumin it is wrong to use cold nitric acid, which throws down a mixture of albumin and albumose; if heat be used, pure albumin is thrown down. I wish to refer to four cases of albumosuria out of two hundred examined. One was acute inflammation of the bladder, combined with a

subacute gastroenteritis. This patient had been on a long journey and had drunk much ice water. He had albumose in the urine, which cleared up in a day or two. The second was a case of diffuse nephritis, with mitral regurgitation and hepatic sclerosis, and he had been under observation for some time. The albumose persisted for many months and then disappeared, reappearing when the renal function failed. In the third patient it was impossible to make a thorough physical examination on account of obesity. The urine was free from casts, but there was present a small amount of albumin and albumose; the latter cleared up before the former—a phenomenon which is quite characteristic. The fourth was a case of subacute inflammation of the bladder. The primary condition was a colitis which was catarrhal or a mixed infection. The patient presented all the symptoms of typhoid, but the blood test was negative. The urine gave a doubtful Ehrlich's sign. It was a question in my mind whether it was typhoid or not. All these cases had albumosuria and not peptonuria. In some of these cases, also globulin was present. This is something about which we know but little. Peptonization by bacteria might be considered, theoretically, an explanation of albumosuria, but many of the latter cases occur in sterile urine. I have never found albumose to develop in albuminous urine that had been allowed to decompose. In other words, ordinary saprophytes have no peptonizing power.

DR. E. R. AXTELL, Denver, Colo.—We are indebted to Dr. Purdy for the work he has done for us in urinalysis. The test he has presented is in the way of accuracy, without loss of time. There are but few objections that could apply to it. It requires Dr. Purdy's electrical centrifuge. For many of us this is impossible of attainment, because we can not procure the motor force. I may mention the fact that with my centrifuge, having a radius of $11\frac{1}{4}$ inches, I have had to do some original work of my own in getting normal deposits. I find that if I revolve my hand centrifuge two hundred times, my readings are about those laid down by Dr. Purdy. If I take a solution of albumin or chlorid of known strength, and precipitate them by proper reagents, I get a proper reading after the revolution, proving that my results are accurate.

With albumin precipitation, there is a source of error in using a centrifuge. The albumin does not pack down evenly and on a level, but accumulates to a slight extent on the glass of the tube. This is certain to modify the reading. Possibly some little plan can be found to remedy this. I am indebted to Dr. Stockton for the term "uroteritis." I have called such cases renal colic.

DR. CARROLL E. ENSON, Denver, Colo.—I wish to call attention to a paper on "Albuminuria of Adolescence," written within the year, by Dr. Clement Dukes of England, who for many years has been studying this subject of occasional albuminuria in adolescence. Dr. Dukes made observations on school-boys, at either Eton or Rugby. I have forgotten which, and he found a large number of cases in which there were at the period of adolescence, small traces of albumin occasionally present; this amount of albumin was influenced largely by the time of day, by exercise, etc. In this paper he called attention to the fact that he could not speak of conclusions until the lapse of a certain time and the collection of a large number of statistics. He also speaks of having found a considerable number of cases, where the albumin cleared up under rest, and the albumin remained absent during school life where the lads were under control. But, subsequently, when they reached adult life, they developed albuminuria which was quite serious. He recently had a case in consultation, of an adult, where he could trace, back the records to the adolescent period, and he found that the patient had been passing albumin at that time. This fact should put us on guard. Certain statistics of Dr. Dukes are sufficiently numerous now to warrant him in bringing it to our attention. This is not the accidental or spurious albuminuria, but cases of albuminuria of adolescence in which all spurious sources of albumin were ruled out.

DR. GEORGE DOCK, Ann Arbor, Mich.—Dr. Purdy's series of investigations are of great value. It might be worth while pointing out that the use of this method in practice is not necessary for proper treatment. The variation in the amount of albumin within small limits is very common and to be expected, from a number of causes. It is more important in practice, so far as albumin goes, to know the approximate amount than to be able to state it within minute fractions, and the examination of the sediment is, after all, of much greater importance. In regard to the matter of functional albuminuria, it is extremely important that we should look on every case of albuminuria, as Dr. Stockton has suggested, as possibly being the earliest stages of kidney disease, therefore, to tell a patient he has functional albuminuria is a dangerous thing to do. Repeated examinations of the urine should be urged. I also

wish to speak of certain forms of albuminuria which come on in persons taking exercise in undue amounts. I have, during the past three years, been making observations on bicyclists and other athletes, and I have found, in a large number of cases, that even a moderate amount of exercise brings on albuminuria, and occasionally casts. In many cases there is not more than a trace of albumin, but a distinct sediment and casts of various kinds, sometimes hyaline, and sometimes blood and blood casts. It will be interesting to find out later if disease follows in these cases. It does not do to use the term nephritis too loosely; very often the condition is not a nephritis but a superficial degeneration. So far, I have not carried the observations far enough to see whether they suffer any permanent damage to the kidney. These observations are important enough to speak of now and they certainly are interesting.

DR. CHARLES E. MINOR, Asheville, N. C.—I was glad to hear such an authority as Dr. Dock dwell on the fact that the exact amount of albumin is not of such great importance. I do not wish to be understood as belittling this admirable work of Dr. Purdy's, but I feel that what we want is the more general adoption of less complicated methods of rapid diagnosis. To be of the greatest use an apparatus for clinical diagnosis must be such that it can be generally adopted, not only in laboratories, where the conditions for Dr. Purdy's instrument are obtainable, but by the general practitioner throughout the country. Those of us who possess laboratories should remember that we are an insignificant minority and will for years remain so; we should not, as Dr. Purdy seems to do, discourage, but rather encourage the use of apparatus which, like Eschbach's tube, is simple enough for easy use by the general practitioner, and which does not demand an electric current and an expensive machine whose price will certainly prevent its general adoption; it is hard enough in any case to get a majority of the profession to use the methods of precise diagnosis, without making it harder by discrediting the simpler, if not absolutely accurate, ones. What we want in the present state of the profession in the country is a more general adoption of clinical diagnosis in the profession at large, and if we are to make any progress we must not begin by discrediting the simpler apparatus or demanding too elaborate or expensive a one in its place. We will be lucky if we get 50 per cent. of the doctors of the country to give any attention to the quantitative estimation of albumin; there is some hope of getting them to use Eschbach's tube, none at all of getting them to purchase Purdy's form of centrifuge. I repeat, therefore, that while glad of this addition to our means of precise diagnosis, I regret that the author has seen fit to discourage the use of the older and simpler method.

DR. JUDSON DALAND, Philadelphia—So far as Eschbach's method is concerned, it has been, in my experience, entirely unsatisfactory; it is exceedingly incorrect, in spite of the great commendation given it. A trace, moderate amount and large amount of albumin are terms usually employed by clinicians; but instead of these terms we should use percentages, which is the only accurate method of noting the quantity of albumin. The former terms have been used from necessity. I believe that if Dr. Purdy's instrument be used with these tables, greater accuracy will be secured. So far as the profession is concerned, it is quite impossible to carry on the laboratory work and to attend to a general practice. If you have assistants, they can attend to this work. But that is no argument against the instrument's precision. So far as the centrifuge is concerned it is a simple matter to secure 1500 revolutions per minute, and it is a procedure that occupies but a few minutes. Dr. Purdy's paper deserves a very careful consideration, and to the employment of this method I look forward with pleasure.

I was much interested in Dr. Stockton's paper on "Accidental Albuminuria." Occasionally, a cystitis is accompanied by renal disease. The question, therefore arises, as to how much of the albuminuria is due to liquor puris and how much is of renal origin. If some method could be adopted by which this differentiation could be made, accuracy in diagnosis would be increased. Not infrequently the amount of albumin seems disproportionately large when the small amount of pus is considered. Of course, when tube casts or cylindroids are present the diagnosis is simplified.

I recall an instance, which occurred lately, of a floating kidney, which was exposed and secured by three ligatures. A careful examination showed no albumin immediately before the operation, but immediately after there appeared an amount of albumin, an amount equal to one-half of the bulk of urine; there was also a moderate amount of blood and a number of blood casts. The urinary evidence was that of an ordinary acute nephritis. In the course of two days the albuminuria rapidly diminished and, in the course of three weeks it had entirely

disappeared, and the urine was normal. This case is interesting as showing the effects on the urine, of three suture tracks in one kidney.

So far as the occurrence of nephritis without albuminuria is concerned, it seems to me that this has been demonstrated, and it also is quite clear that many cases of this form of disease where albuminuria is present are frequently overlooked. In the majority of instances the cause for this is the injudicious employment of light. If the test-tube is held before the window, the trace of albumin is frequently overlooked; but where it is held against a black background, and the light passes through the urine obliquely downward, the smallest trace may be detected. This particular technic is of practical importance.

Dr. SCOTT of Indiana—I wish to express satisfaction with the use of Esbach's instrument; its estimation of albumin depending on the specific gravity. As stated by Dr. Purdy, the alkalis and other substances are thrown out and measured when the picric acid is added, which makes an erroneous reading of the sediment. It is the sentiment of the society that a uniform radius and uniformity, at least to a certain extent, should be obtained. The centrifuge is indispensable. It seems to me that in the analysis of urine, there is too little attention paid to it. Two things should be considered, the analysis and the interpretation of the analysis. It is important to determine just what the result of the analysis will be. In the question of urea, there is no positive way of estimating the urea. The instruments are all erroneous because they depend so much on the barometric pressure, which varies so. Doremus' ureometer is a good instrument, but it is open to objections.

Regarding the question of albuminuria of adolescence, it is certainly not always true that we have disease of the kidneys or a nephritis. In any case it is impossible to tell which individual illness may not give rise to a nephritis from simple irritation or congestion of the kidneys. And yet it certainly is not wise to report to companies that a true albuminuria is present without determining, by means of the microscope, whether there is present blood or epithelial cells, which would call attention to a diseased condition of the kidneys. Albuminuria alone should not be considered evidence of a nephritis.

Dr. GEORGE W. WEBSTER, Chicago—I wish to record two interesting observations. I have recently had two internes who had been assigned the duty of giving anesthetics. They were employed from four to seven hours each day in the administration of the anesthetics, and usually ether was the one given. In one instance there appeared a large percentage of albumin, blood, and casts. After resting for ten days, all this entirely disappeared. On resuming his duties at the hospital, he worked seven hours, and at the end of that time there appeared a large percentage of albumin, together with blood in the urine. After another absence from the hospital, for one month, he again reported and the albumin and blood had disappeared. It is a difficult question to tell where irritation ends and inflammation begins. The explanation may be the same as in typhoid fever, where albuminuria occurs in 25 per cent. of all cases examined.

Dr. ARTHUR R. ELLIOTT, Chicago—I do not think Dr. Minor is warranted in arriving at his conclusions in reference to Dr. Purdy's paper. Dr. Purdy has said that he has endeavored to supply us with an accurate and simple mechanical means by which the results can be arrived at in the short space of fifteen minutes. To substitute a simple mechanical means for a complicated and tedious chemical procedure is certainly not calculated to introduce any confusing element into clinical work.

Dr. CHARLES G. STOCKTON, Buffalo, N. Y.—I feel with Dr. Daland that, as a rule, the albumin found bears a relation to the amount of pus present. This is not invariably, but is the rule. One peculiar feature in cases of spurious albuminuria is that, in traces, albumin is frequently found associated with ureteritis. The intense acidity of the urine and the increased irritation exercised on the tissues of the ureter explain the occurrence of albumin in that condition. It is small in amount but important enough to call attention to it. Cases called nephritis are often not true nephritis, but simply albuminuria arising from the ureters. I would like very much to discuss the general subject of albuminuria, but I feel it would not be right to discuss it when the chief papers on that part of the topic have not been read.

IN A RECENT charge to the grand jury, convened in Newark, N. J., a justice rendered a decision in the case of accidents due to bicycle riding that: "The law does not create the ringing of the bell as a signal that will exonerate from responsibility."

OBSERVATIONS ON TONSILLECTOMY*

BY J. HOMER COULTER, M.D., Ph.D.

Professor of Rhinology and Laryngology in the Chicago Clinical School and in Harvey Medical College.
CHICAGO.

There is yet a lamentable uncertainty and want of precision in the terms used generally by the profession in reference to the pharynx and larynx, this, too, notwithstanding the great amount that has been written and spoken on this particular subject. Such indiscriminate use of terms is not alone by the general practitioner, but in many cases by those who in other respects maintain their standing as specialists in the line of nose and throat work. These facts are in all probability due to the comparatively short history of the specialty as a distinct line of work, and the consequent somewhat limited amount of original investigation that has been made. We note as an instance that many presumable authorities indiscriminately use the terms tonsillitis and quinsy; or that the removal of any portion or of the entire gland is alike termed a tonsillectomy; how little is positively known of the function of the pillars, or indeed of the tonsillar gland itself.

I wish in the beginning to posit as the most important element in the following argument and deductions the opinion that a pathologic tonsil demands entire removal. The exceptions to this rule are few, and are ordinarily not difficult to differentiate. We may maintain as most important exceptions, some cases of malignancy; cases of known or strongly suspected hemophilic tendency; the rare but possible condition of aneurysm in the region of the tonsil; in unusually severe cases of tubercular or syphilitic infection, with special manifestations in or about the tonsil. These, however, it will be observed, are only such conditions as would naturally be inhibitory indications to any operations at any time, and consequently very proper exceptions to the rule laid down above: admitting that there are oftentimes conditions and circumstances which make the case a rule unto itself in a surgical aspect.

I maintain that the above rule is one strictly in consonance with the best practice of the most successful surgery, and that its violation is, as of any other well-established fact in medicine or surgery, unwarranted, injudicious, unscientific and unsurgical. What would be thought of the modern surgeon who would voluntarily and without further excuse than that they were difficult to reach, amputate a breast and leave enlarged axillary glands, or of one who would do a simple mastoid and leave untouched a severe middle-ear involvement, or one who would remove pus tubes and leave a retroverted uterus in situ because the adhesions were difficult to get at or break loose? Yet I believe such argument is applicable to the cases under discussion.

Dr. Goodale, in a recently published monograph on the pathologic histology of acute tonsillitis, has conclusively demonstrated that there are quite sufficient bacteria and other pathologic conditions present to warrant the conclusion that the doubtless resultant chronic condition is one not only demanding careful attention, but also is necessarily a pathology more or less diffused throughout the entire gland. The process of natural or spontaneous repair in cases of acute tonsillitis is yet to be demonstrated conclusively. Certainly, however, the almost universal experience would lead us to anticipate that the acute condition was quite likely an impor-

*Presented to the Section on Laryngology and Otology, at the Fiftyeth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

tant etiologic factor in the various chronic pathologies met with so frequently.

It is unfortunate that as yet we do not know what is the function of the tonsillar gland. A dissection will demonstrate little beyond the fact that there is not a very intimate relation, anatomically, between the gland and the surrounding tissues; aside from the blood and lymph-vessels none of the fibers from the palatoglossus or palatopharyngeal muscles leave the striations of those muscles and branch off into the body of the tonsil, nor do they anastomose with each other until they have passed below the triangular space occupied by the tonsil, thus apparently favoring as much as possible the enucleation of the gland when desired. The conclusions arrived at by Goodale in his extensive and careful investigations may be again referred to: "1, absorption exists normally in the tonsils, and takes place through the mucous membranes of the crypts; 2, the path of the absorbed substances is in the interfollicular lymph channels in the direction of the larger fibrous trabeculae at the base of the organ; 3, during the process of absorption, foreign substances encounter phagocytic action on the part of the polynuclear leucocytes situated in and adjoining the mucous membrane."

Admitting these deductions of Goodale as true, it does not alter the truth of the statement that the crypts quite frequently extend almost the entire depth of the gland; indeed, enucleation of pathologic tonsils will in more than half the cases demonstrate the existence of abscesses and other debris in the depths of these crypts, quite on the other side of the tonsil from that presenting in the throat. If the lymphatics of the tonsil do anastomose to any great extent with those of the lateral and posterior pharynx, then might we not expect that more frequently an infection in the tonsils would be conveyed to the peritonsillar tissues? Or if the action of the tonsillar lymphatics was not alone absorptive, but expulsive as well, would it not be expected that the bacteria would become lodged deep in the plexus within, and we would much more frequently anticipate a phlegmonous condition therein in evidence of the correctness of our etiologic theory? The comparative absence of these evidences, however, must indicate that either the lymphatics in the so-called "lymphoid ring" are not very ready bearers of bacilli, or else the intimate connection, presumed by some authorities between the lymphoid tissue at the base of the tongue, between the pillars and in the vault of the pharynx is an imaginary one.

If it be true, as some have claimed, that the normal secretion of the tonsil is one of nature's leucocytic antiseptics, destroying each microbial intruder within the precincts of the crypts, then we are not warranted in removing a tonsil which is capable of producing this secretion. But I do not apprehend such surgery will be advocated by any member of this ASSOCIATION. It is not the question at issue once in a hundred cases, as to whether or not the tonsil is a pathologic one; it is rather the character and extent of the pathology, or the method of removal which we consider.

A careful and studious dissection of a number of pathologic tonsils will, I believe, prove the truth of the following statements:

1. The most violent pathologies are not always presented in the most hypertrophied tonsils. An overlapping pillar may so confine pyogenic germs as to force them into the surrounding areolar tissue. These pillars are then often hypertrophied to a considerable extent; the tonsil projects but little if any above the pillars, is firmly attached to them, and we have the so-called "sub-

merged tonsil." This leads me to the additional fact that:

2. Such continuity of tissue formed by the pillar overlapping the tonsil, is distinctly pathologic, and being such, demands surgical interference, theoretically at least, in all cases, excepting only those mentioned earlier in this paper.

3. In all probability the gland has an absorptive action, but it is a much more popularly known fact that many pathologic tonsils do constantly emit from the mouths of the diseased crypts and follicles quantities of odoriferous pus cells, pyogenic germs and cheesy masses of debris into the throat; so also will be found numerous abscesses usually emptying into the lacunæ, to be conveyed to the throat and stomach.

4. It will furthermore be observed that the force and action of the muscles in deglutition has kept the surface of the gland well freed from these products of decomposition, and that consequently the most serious condition is to be found in the deepest crypts. The truth of this statement can only be determined by a considerable number of post-mortem dissections, or by a bloodless process of enucleation on the living.

5. The tonsil will frequently be found firmly adherent to both pillars, and when so, either from repeated inflammatory conditions or as a result of a previous tonsillotomy, or from any other cause leaving a cicatricial bridge, they will be found firmly bound together, their independent action being prevented. The importance of such inhibition of function will be the better appreciated if our experience has led us to observe the results obtained by the removal of such cicatricial stumps from the throats of professional vocalists. The unanimous testimony of such patients, whom I consider much above the ordinary in intelligence and whose judgment must in a large measure be competent, is to the effect that they can, after the removal of these stumps, by the same effort at vocalization produce a much better quality of tone than before.

6. A more perfect incubator of disease germs can not well be imagined than is found in a pathologic tonsillar crypt. The chances are that the very fact of its being pathologic precludes to a great extent, if not entirely, the possibility of the antiseptic action of the leucocytes. We have here warmth, moisture and mechanical protection; can it be a matter of wonder why so many cultures can be so easily made from the deep crypts of a pathologic tonsil?

7. It will be found that the larger end of the gland is uppermost, frequently quite imbedded beneath the pillars, although to the casual observer the opposite would seem to be true. This can be easily demonstrated by having the patient gag, when it will be seen that the gland bulges out prominently from underneath the pharyngeal aponeurosis. I desire to call attention at this time to two points: one is, that it is often in this hidden portion of the tonsil the most serious pathology is found; and a second is that in such a condition a tonsillotome or any similar instrument, short of one adapted to a dissecting process, will fail of success to the extent to which it leaves a portion of the pathologic gland remaining in the throat.

What then are the general results of tonsillectomy, as compared with those obtained by the usual operation of tonsillotomy, as is ordinarily done by the general practitioner or most specialists as well?

1. It gives a cosmetically perfect throat. It gives a throat practically precluding the possibility of a return of the tonsillitis. It gives a throat in which there can

be no absorption of the toxins or bacilli into the lymph-channels at that point; at the same time it certainly offers to the patient a better chance for recovery should they subsequently be subject to an attack of any disease affecting the throat, such as the exanthemata, diphtheria or quinsy.

2. It liberates and allows a perfect action of the pillars and soft palate, the same result holding whether the pillars were adherent from inflammatory action or bound together by a cicatricial stump the result of a former tonsillectomy.

3. It removes a mechanical obstruction to the sound waves. This, in the case of those professional people who are compelled to use the voice in singing or speaking, is a matter of no little importance.

4. The operation, thoroughly and properly done, is more likely to be effectual in relieving a reflex disturbance when such neurosis is due to a pathologic tonsil than is the more simple operation of tonsillectomy.

5. If thoroughly and properly done, and the case receives the proper subsequent care and treatment, it will leave a perfectly smooth surface in place of the tonsil, which result can not as certainly be attained by a tonsillectomy, and with ignipuncture it is a practical impossibility. With singers this becomes an important matter.

6. Pillars, which were for any reason previously hypertrophied, will ordinarily, after this operation, promptly retract to a more normal contour and size.

7. It is in some cases a practical operation where another would be almost or quite impossible; for instance in those tonsils which on the surface are so soft and degenerated that a firm hold on them can not be obtained by any instrument; to obtain satisfactory results these must be dissected out entirely.

I take it as a sufficiently established fact which practically every operator will admit, sooner or later, plainly or by inference, that total ablation of the entire gland is the indication in all cases where malignancy, lues or tuberculosis is eliminated with a reasonable degree of certainty, and even in these cases such is very frequently highly advisable. It is equally axiomatic that in chronic pathologic conditions of the tonsils local applications are practically useless, and that constitutional treatment, aside from those cases in which a special and well-pronounced indication for such treatment exists, is a wasted effort.

In a large number of cases where complete removal is performed, those evidences of follicular involvement which are so frequently seen in the pharynx and about the base of the tongue, and even an old adenoid, will disappear as if by magic. Indeed, it would seem that the marked improvement which so universally follows a tonsillectomy, or even very often a tonsillectomy, should be sufficient confirmation of the baneful influence such a pathologic condition may and usually does produce. It is not unusual for patients to voluntarily speak of the relieved condition of the throat even after the removal of a single gland has been accomplished.

The dangers of tonsillectomy, as compared with other operations for the relief of tonsillar hypertrophy, are greatly exaggerated by the profession generally. In an experience reaching over three and one-half years past, during which time I have removed the entire glands, by cautery dissection process, over three hundred times, I have not been unfortunate enough to meet with a single untoward accident. One of the most frequent objections urged against the removal of the entire tonsil has been the added dangers of hemorrhage; I am convinced, however, that this is a danger more imaginary than real.

I have thus far had but one single case which required the least attention on account of hemorrhage. In that case ordinary styptics served to control the bleeding quite promptly. Such result I attribute, aside from a kindly fate, to the care taken in avoiding the wounding of the muscular tissues in the least possible degree, and as well to the fact that the cautery was always the instrument employed in effecting the removal. I have in this way fearlessly removed a number of large fibrous tonsils which I confess I would have long hesitated before attempting with either the guillotine or knife. I have on a previous occasion referred at some length to this process of operating, and I will consequently not enter into the details of the method as now employed.

To me a most convincing proof of the value of tonsillectomy as an operation is the unanimous satisfaction it affords the patients; and that after all is the ultimate criterion which must be the measure of our success in any practice.

That the removal of enlarged tonsils in children is advisable is a generally admitted fact, and requires no argument; but that even in these cases a partial removal of the gland is often advisable I must deny. If no other means be possible, then thoroughly curette the same after the use of the tonsillotome, scissors or knife.

The object of the paper is to call your attention to the fact that we will get by the removal of the entire gland when pathologic, in adolescence and adult life even more marked and surprisingly satisfactory results than in childhood. We will in addition be more closely following the precepts of consistent scientific surgery.

103 State Street.

DISCUSSION.

DR. F. J. QUINLAN, New York City.—As the essayist detailed the results of his observations, it occurred to me that we could mention the use of the cold snare, which I think a very valuable and safe adjunct to our present armamentarium. Some years ago Dr. Roe of Rochester gave us a very excellent paper in which he spoke of an affection of the tonsil unattended by hypertrophy, which is likely to at times give us much trouble. This small amount of glandular tissue gives rise to inexplicable symptoms and it is difficult to get at the cause. It is only by repeated examinations and by carefully separating the pillars that we can see this stroma, or rather this hardened tuft of tissue. This is the kind of tonsil that affects not only phonation, but frequently deglutition, and throws the soft tissues out of gear, so to speak. This small lymphoid collection, unless it is removed, may bring about acute and subacute conditions. The cold snare is of value in removing this, more especially since the introduction of the suprarenal extract, which we are all using today for its hemostatic effect. The use of the galvanocautery does not seem to me justifiable in these cases, but by simply throwing this tonsillar mass in view and getting the cold wire well down, then drawing it forward with the forceps, you can with this loop excise this tissue. The greatest amount of benefit often follows the enucleation of these little fibrous tufts. It is in these cases that you may inspect the fauces and be able to detect the cause of the trouble. The little crypts are often visible only on ablation of the tonsil. I only wished to mention the cold snare, though my experience in tonsillectomy does not warrant me in emphasizing its use and advocating it when other measures can serve us with safety.

DR. A. DEVLIRISS, Toledo, Ohio.—I would like to ask whether the gentleman could make a tonsillectomy, as suggested by the Doctor, with the cold wire.

DR. QUINLAN.—I referred to tonsillectomy, Mr. Chairman.

DR. C. M. COBB, LYNN, Mass.—The snare that is made for tonsillectomy is rather large and heavy. It carries a No. 10 wire, and it is quite possible to do a tonsillectomy with it if you bend the wire around so you get a curve that falls behind the tonsil, and then work it carefully in. The caution I wish to give is that this instrument being so heavy, you are very likely to make some traction on the tonsil with it, and if you do you are very likely to have the neck filled with extravasated blood. The instrument is heavy and has to be handled with care.

DR. T. R. CHAMBERS, Jersey City, N. J.—If I understand the gentleman correctly, all his cases are tonsillectomies now in-

stead of tonsillotomies. I have done a great many tonsillotomies and a few tonsillectomies. After tonsillotomy I find many of these patients have as good singing quality as they had before. And I think issue may be taken with the writer in regard to all the tonsils that are hypertrophied being pathologic. I think it is very doubtful whether we can say that a tonsil, because it is a little enlarged, is a diseased tonsil. If it fits so much space that it gives us difficulty in breathing, then tonsillotomy is indicated. The operation of tonsillectomy, Dr. Coulter says, is not a serious one, but there are conditions under which I think it might be a serious operation. The tonsil must be put there for some purpose, and if it is partly taken away it still may serve its purpose, but that is not true if it is entirely removed.

Dr. H. W. LOEB, St. Louis.—This paper is an exceedingly timely one, especially in view of the work that has been done in the past three or four years, by which demonstration has been made of the fact that certain diseases enter the body through the tonsils. I believe it is claimed that muscular rheumatism as well as the acute articular form is due to toxins that find entrance in this way. There are cases going around the country to-day in which partial tonsillectomy has been performed and acute attacks of tonsillitis have been observed for years afterward. I recall a case of tonsillitis that occurred after every vestige of the tonsil was supposed to have been removed, and finally a small mass of tonsillar tissue was found to be remaining. In this case the dissection of the small remaining mass and the removal of practically all of it has caused the attacks to be lessened in duration and number, so that the patient has had only one attack in four months, whereas before they occurred every ten or twenty days. I found the only portion of the throat affected was the portion on which the small mass still remained. In 1892 I presented to this ASSOCIATION the first snare which I had the opportunity of devising. Since that time this electrocautery snare has been very much improved, until the present snare, mentioned by Dr. Coulter, which should be used whenever it is practicable, uses only a No. 5 wire. A complete tonsillectomy can be made without any particular danger to the patient. I thus save my patients, or think I do, not only the possible tonsillitis in the future, but also those who may find entrance through the tonsils. It is only necessary to use a pair of forceps and pull the tonsil from its bed and take out the entire mass with the snare so the whole bed is as smooth as the rest of the palate. The healing is rapid. I am sure if this operation were more often used with instruments that have sufficient precision to warrant their use, the condition Dr. Coulter mentions would not be seen so often. I rise at almost every meeting of this ASSOCIATION to say about the same thing, and I have not had any reason for changing my opinion.

Dr. J. A. STUCKY, Lexington, Ky.—I have been trying to agree with Dr. Coulter for two or three years. I have only done two or three tonsillectomies, and have not had the courage to do any more, for I have seen two or three people who have had the operation performed by men far more skillful than I, and they are sorry that they had it done. They complain of soreness and stiffness, and one declares that his voice is not of as high register as before. Whether there is anything in that I do not know. But I have found that when all the tonsil that could be engaged in the tonsillotomy was removed, that has given relief. But I have not met any cases of recurrences when the gland was thoroughly removed with the guillotine. It does seem to me that we run some risk in removing the entire gland, and when there are adhesions I question whether we can do it without harm.

Dr. JAS. H. FARBER, Dayton, Ohio.—In many cases of enlarged tonsils, in fact those which most commonly present themselves to us, we find the tonsil scarred from repeated attacks of quinsy, irregular in form, its outline lost in the pillars, and adjacent structures hypertrophied so that it is difficult to determine which is tonsil and which is pillar. On close inspection we find several crypts; these I remove with scissors, trimming out as much tissue as the case will warrant. I would like to ask Dr. Coulter whether or not he believes there is a place for the snare in the cases.

Dr. G. V. WOOLEN, Indianapolis, Ind.—I had the temerity to say before this Section, at the meeting of the ASSOCIATION in Cincinnati, in 1888, that I did not believe there was any such thing, anatomically or physiologically speaking, as a tonsil. I have since thought that I might have been mistaken at that time. I have made a persistent study of this subject. When we met in Philadelphia I again announced my belief that there was normally no such thing as a tonsil. Some gentlemen from Philadelphia took me to task and said that comparative anatomy taught that there was such a thing. The statement was rather a "stunner" to me, because I had not made a study

in that direction. I am doing so now, and I do not know where they find proof unless possibly it be from a more extensive study of embryology than I have made. But in the study of comparative anatomy and physiology, which I am prosecuting now, I am becoming confirmed in the belief that we do not have, physiologically speaking, such a thing as a tonsil. If this dictum be true, then there can be no objection to tonsillectomy. As a matter of fact, I have yet to regret once having made a tonsillectomy. It has been my practice to remove all of the tonsillar tissue. I do not always succeed in removing all of it, but I always feel disappointed if I do not. All the ill effects supposed to be due to removing the tonsil are attributed to, and result from, disease in the nose. Thus, we often have pharyngeal trouble after removal of the tonsil, which has no relation whatever to the removal of the tonsil. If the nose is first put in good condition, we will not have any difficulty with these patients, if tonsillectomy is subsequently made.

Dr. E. J. BERNSTEIN, Baltimore, Md.—I was rather surprised to hear the Doctor say that he did tonsillectomy with a guillotine and had no return. Am I right, Doctor?

Answer: Yes, sir.

Dr. BERNSTEIN.—Well, I have done the operation with the guillotine a number of times, and I have had a number of recurrences. I believe the tonsil to be an unnecessary and dangerous organ, and then the fact that the tonsil may be a focus of infection has been brought home to me in a very terrible manner during the past winter. I had a patient with a very mild tonsillitis, so mild in fact that she would hardly have paid attention to it at the time if I had not been treating a relative of the family. All that could be seen on one tonsil was only a slight erythema. I treated it with nitrate of silver. In a day or two she returned, saying the throat was as bad as ever. I made a culture and found the streptococcus. That is not surprising, for we often find the streptococcus when the throat is normal. But the young woman developed a streptococcal infection in a short time, and notwithstanding the use of the antistreptococcus serum, she died in a few days. In Baltimore, Dr. William Welch said, "There are streptococci and streptococci, as far as antistreptococcus serum is concerned;" the fact I got very little benefit from the antistreptococcus serum is not surprising, since it is usually prepared from the streptococcus of crystals and the streptococcus we had in this case was not of that variety.

Dr. A. DEVLILHS, Toledo, Ohio.—The essayist said that tonsillectomy should not be made with the knife. I do not believe the operation can be made complete with the cold snare, and I believe that tonsillectomy will usually suffice.

Dr. L. C. CLINE, Indianapolis, Ind.—I would like Dr. Coulter, in closing, to explain what he means when he says that his method will never cause bleeding. If there is a method not occasionally followed by bleeding, I would like to be familiar with it. In either operation we should group our patients and not rely on any single method, but select the method that best fits the case. We can often get good results with tonsillectomy followed by the use of the canterly knife to destroy any crypts that may be left; at least, that has been my experience.

Dr. J. C. McALLISTER—I wish to ask the age at which that was done.

Answer: Seven years.

Dr. McALLISTER.—It is perfectly proper to do a tonsillectomy as well as a tonsillotomy. I find many persons who need a tonsillectomy or tonsillotomy, where there are adhesions between the tonsil and the anterior pillars. One of the speakers spoke of the use of the hot snare in removing these. I can not imagine, for my part, how he is going to do the snaring without previously dissecting the tonsil from the anterior pillar. For myself, I have a set of knives for use in these cases, to dissect the tonsil from the anterior pillar, and then I do a tonsillectomy.

Dr. J. F. BARNHILL, Indianapolis, Ind.—It seems to me that the diversity of opinion as to whether we shall do a tonsillotomy or a tonsillectomy can be greatly simplified by remembering what we do the operation for. To my mind we do it to accomplish two things, viz., remove the obstruction that may be present, and remove the crypts that are always present. When the obstruction is great, or even considerable, and we wish to free the upper air tract, there is no other method simpler, safer or certain in results than tonsillotomy. The patient is almost certainly cured. In the second class of cases requiring the operation, where the tonsil is small, the kind that has been particularly referred to by the essayist and some of the speakers, we do not remove the tonsil on account of obstruction, but for the purpose of getting rid of the crypts. Any other method, as I take it, that will remove the glands beyond the bottom of these crypts will do all the good that can be done. I do not believe,

as has been intimated by some of the gentlemen, that it is necessary to leave any part of the tonsil in place. The tonsil is simply a part of the system of lymphatic glands, of which there are five or six hundred left if we remove this completely, and they are freely able to perform all the work that is done by the tonsil that we are at work on. So I always feel satisfied, and that my patient is cured, when I go to the bottom of these crypts and remove them.

DR. J. H. COULTER, Chicago.—If I undertook to answer all that has been said it would occupy much more than my allotted time. In regard to the remarks by Dr. Barnhill, which I believe are positively incongruous with his practice and with his ideas of surgery, in that he says he will get perfect results by destroying a diseased crypt or portion of the tonsil, when the crypt runs up well under the pharyngeal aponeurosis, where you often find your greatest pathologic focus, how can you destroy that thoroughly, and yet leave a smooth pillar that will be free in its action to perform its function well, either in voice production or deglutition? I can not accomplish it. It would require a man with greater dexterity than I can display. Dr. Loeb and one or two others rather misinterpreted the purport of my paper, inasmuch as I had intended and had hoped that little or nothing would be said concerning the method to be employed. I am simply contending for a surgical principle. I do not use the snare very frequently. Dr. Loeb uses the snare, and uses it successfully. I have seen some of his patients, and he does get beautiful results from it. But certainly Dr. Loeb does not attempt to use the snare without first separating an adherent tonsil from the pillars.

You can not draw the tonsil into the snare if it is adherent to the pillars; it must first be loosened and made to stand out as a separate gland. I thoroughly agree with Dr. Woolen that normally there is no gland discernible. I can show you in this city, although I do not live here, a person on whom there has been no knife used, and yet I defy any of you to discover a gland there.

A MEMBER.—You can see that in my throat.

DR. COULTER.—Well, there are two instances. If now our proposition be true, and I believe it is, then if that tonsil does become discernible it is hypertrophied, and hypertrophy is a pathologic condition. One of the speakers asked if all enlarged tonsils are pathologic? I say yes, emphatically, because even if the crypts are not diseased the tonsillar tissue itself is diseased. I do not want to enter into a lengthy discussion of the method at this time, but Dr. DeVillias and Dr. Cline have forced the question so that I must say a single word. My method of doing tonsillectomy is with the cautery blade, because by that method I have an absolutely bloodless operation. By this process in over three hundred cases I have never yet had a very serious hemorrhage, and only one requiring attention. Time and time again I have removed an enlarged fibrous tonsil almost reaching the median line of the throat, and not had twenty drops of hemorrhage.

I remember all the objections to tonsillectomy, and I appreciate the criticisms that have been made, because they have brought out the fact that tonsillectomy is the proper surgical procedure if we adhere to the very first principles of modern surgery. There is no question about it. There is not a member present here who has advocated tonsillectomy, who would be willing to go before the surgical section and advise leaving a portion of the pathologic tissue intact in the body where it can produce such deleterious effects, as it is almost certain to do if left. I repeat it as a perfectly practical and feasible proposition that every operator who will begin the practice of removing the entire gland when pathologic will get results surprising to himself and gratifying to his patient, and will not soon return to the unsurgical operation of tonsillotomy.

DISEASES OF THE ANTRUM OF HIGHMORE: A STUDY OF ONE HUNDRED AND FIFTY CASES*.

BY L. C. CLINE, M.D.

PROFESSOR OF LARYNGOLOGY AND RHINOLOGY, MEDICAL COLLEGE OF
INDIANA.

INDIANAPOLIS, IND.

My apology for presenting the often discussed subject, "Diseases of the Antrum of Highmore," is the confusion among observers regarding the etiology and pathologic conditions found in these cases, as well as the discrepancy of opinions as to treatment. After an experience with

150 cases, 140 of which were in my own practice, I feel warranted in calling attention to a few points noted under my observation.

My cases have all occurred between the ages of 20 and 70. Forty-eight occurred in females and 102 in males. The disease did not predominate with any particular class of people—doctors, lawyers, ministers, teachers and tradesmen—in fact, all the callings and conditions in life were represented. Of the 140 cases, 6 had sarcoma, 3 in women and 3 in men. Two of these were operated on by the late Dr. J. W. Marsee, and in one of them the entire superior maxillary bone was removed, the other only partially, which gave only temporary relief from pain. The other four, when apprised of the nature of the disease, refused operation and finally succumbed to the malady. These cases all gave a history of suffering from their teeth prior to the development of the disease, which fact leads me to believe that the long-continued irritation from an abscessed root discharging into the antrum is a factor in the production of sarcoma.

Four cases of empyema of the antrum have come under my observation. The symptoms were the same as those described by Dr. D. B. Kyle in his cases—that of escaping gas from abscessed and carious teeth into the antrum, producing a sense of nasal pressure with paroxysms of a dull, heavy, sickening headache. These were all relieved by extracting or treating the diseased teeth.

The etiology of my cases could all be fairly well traced to three sources, viz: dental, nasal and la grippe. As nearly as I can estimate, 50 per cent. were due to diseased teeth, 40 per cent. to sequelæ of la grippe and teeth combined, and 10 per cent. to ethmoiditis and the various nasal obstructions. Probably a greater percentage should be assigned to la grippe complications. My estimates have been placed on the clinical history as given, which is often misleading.

Twenty cases were acute, complicated with influenza, and all subsided without operation. Of the other 120 all were chronic, suppurative cases of from two months' to seven years' standing. Operation revealed a marked swollen edematous condition of the mucous lining of the antrum in 16 of these. In none did I find true polypoid growths, as described in some of the text-books. Curettement was done in 6, and packing with iodoform gauze in 4 cases. The others yielded to hot astringent douches. Five cases were bilateral. Of the rest, 75 per cent. were on the right side. In trying to account for this, dentists and dealers in dental supplies tell me that a large percentage of the teeth and plates that are broken occur on the left side, which goes to show that there is more biting and chewing on the left side, thus favoring decay on the right. Ethmoiditis was observed as a complication in 11 cases, all of which were preceded by la grippe. Two cases that were carefully diagnosed would not submit to operation, and, so far as I know, they are still suffering from the disease.

The zeal of some of our dental brethren in crowning, building and maintaining bridge work, I am led to believe, is a cause of empyema, in some cases at least. The thought was suggested in 6 under my observation, having had to remove diseased roots under expensive bridge work before a cure could be effected. A purulent discharge from the antrum, when due to dental origin, is carious and fetid, but when its cause is from other sources, like the ethmoid and frontal sinuses, it is creamy and almost without odor.

For diagnosis I rely principally on the use of peroxid of hydrogen and the position of the head. After cleans-

*Presented to the Section on Laryngology and Otolaryngology, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

ing the nose and cocainizing, a few drops of peroxid are injected with a small syringe armed with a canula, the point of which is bent at a right angle and carried into the ostium maxillary. If pus is present, it will be manifest by the characteristic reaction. In cases of nasal obstruction or a deflected septum, I make an exploratory puncture with a small, sharp-pointed drill, through which peroxid is injected.

Illumination is less reliable and more complicated than the above method, although it is a useful aid in determining the condition of the roots of the teeth. I have come to believe, after trying the different methods of opening the antrum, that entering through the alveolar route is by far the best, for the reasons that the after-treatment is less painful, and the drainage is more complete, and the patient can, with greater ease and facility, keep the antrum clean.

Of the 118 cases operated on, all but two had one or more carious teeth, or they had already been removed. So that the objection to opening through the alveolar process on account of the teeth was reduced to a minimum.

My experience in puncturing the antrum from the outside under the gingivomoid fold has not been flattering. In every instance I had a swollen cheek from purulent infection from the discharge. The plan now followed in operating is to first enter the antrum with a small, pointed drill run by an electric motor, then insert a bit of cotton saturated with 10 or 20 per cent. solution of cocain well through the hole, which soon enables me to enlarge the opening to any required size. When a tube is required to keep the hole open, or food from entering, I use one made from silver wire turned to form a shoulder on the end to prevent its entering the antrum. The tube I now show you will remain where it is placed without anchorage, and the patient can remove and replace it at will. Some cases do better without a tube, using a plug of cotton instead, frequently changing it.

The time required to cure a case depends on the size of the opening and the thoroughness of the operation in removing all the carious teeth and nasal obstructions, together with thorough cleansing, curetting, packing and stimulating to healthy granulation. My cases have varied in the time required to effect a cure, from three weeks to one year, the average being from three to six months. Many cases will relapse and require reopening, after closing, on taking cold. For this reason, tonics and attention to the general health must not be neglected.

My practice has been to have the antrum thoroughly cleansed twice a day until the discharge lessens, then once daily until the discharge ceases, first using a little peroxid in water, followed by a solution of hot boric acid, or salt water; once or twice a week a solution of silver nitrate or iodine of sufficient strength to make an impression on the mucous membrane is injected. In the boggy, swollen, edematous cases the best results were obtained by using hot water injections three times a day with a little boric acid or salt added.

The so-called dry treatment by insufflating powders has not come up to expectations. The best results observed from the use of powders were by first washing the antrum clean, and then covering the membrane with equal parts of finely powdered boric acid and lactopeptin.

In tabulating cures, I find it difficult to keep track of all cases, as they are scattered over a large territory, some changing location. But, from my knowledge of the cases, a large percentage have been cured.

To summarize: The points I wish to emphasize are: 1. The great number of cases that are traceable to la grippe. 2. The absence in my cases of polypoid growths. 3. The greater predominance on the right side. 4. The importance of a good-sized opening, and the removal of all diseased teeth. 5. In my experience, to open through the alveolar process is by far the best. 6. Hot douching to relieve the edematous conditions. 7. The dry treatment alone after a first washing has not been a success in my hands.

224 N. Meridian Street, Willoughby Building.

DISCUSSION.

DR. J. A. STUCKY, Lexington, Ky.—I do not think Dr. Cline need offer any apology for bringing this subject before our notice again. He has certainly given us an excellent paper. I am sorry he said nothing more than he did about the consequence of antral trouble. Most of the patients complained a little of pain in the cheek. I have had more patients complain of a peculiar heavy grinding pain in the occipital region than I have had complain of pain in the cheek, and nearly all of them complained of some nasal trouble. I am surprised to hear him say that in the chronic cases he has met with very little true polypoid degeneration in the antrum. I nearly always find it in these cases. I approve of the method he mentions of entering the antrum, going through the alveolar process and removing a tooth if necessary. As a rule we have a decayed tooth which we can remove, but if not I am in favor of removing a sound tooth. As to the cause of suppurative in the antrum, dental caries has a great deal to do with the production of this trouble, and next to this has been chronic trouble in the nose. In my experience, usually I have found a polypoid condition of the middle turbinate, and the secretion was simply dammed up without any drainage whatever. In nearly all the chronic cases, too, I have found that there is suppuration in the ethmoidal cells.

I recently had a very interesting case of osteosarcoma of the superior maxilla which puzzled several of us for five or six days, and I would like to report it. A coal driver was emptying coal into a cellar and a man received a shovelful of coal in the face. Two weeks afterward his face was swollen, and disease of the antrum was suspected. With the trocar and canula I found pus in the antrum. The man was etherized and the second and third molars removed without trouble, and about one-half an ounce of pus evacuated. I found the whole wall had undergone absorption, and microscopic examination showed the presence of an osteosarcoma. A week afterward a general surgeon removed the maxilla entirely and the patient died.

Now as to the dressing in these cases, I would be afraid to allow a patient to keep the opening closed with cotton. I object to a tube; I prefer gauze. In this connection I want to mention a case, for we learn by experience. I operated on a patient two years ago for antral empyema. The patient kept her antrum closed with gauze, but in a hurry one morning she put in too small a piece of gauze, which slipped into the cavity and she had a reinfection as the result. There was acute suppurative from the ethmoidal sinistis following, and reopening of the antrum was necessary in order to remove the gauze tampon.

DR. T. H. CHAMBERS, Jersey City, N. J.—I would like to ask the Doctor if this is the average diameter of the tooth. In my experience that diameter is less than it should be in ordinary cases.

DR. JOHN H. McCASSEY, Dayton, Ohio.—Dr. Cline has certainly given us a very interesting paper. I would mention the use of peroxid of hydrogen in closed cavities or in small deep cavities to condemn its use. We know the peroxid of hydrogen in closed cavities causes gaseous formation and pressure on the adjacent tissues, and too often results injuriously. I would condemn the use of iodoform in this kind of practice—eye, ear, nose and throat. We regard iodoform in surgery as the skunk of surgery. Surgery would not suffer if iodoform was entirely abolished. I have long since dropped its use. Boric acid and nosophen and other drugs have taken the place of it. Last summer I had a case in which a man was upset in the river while crossing it with a horse and cart, and the horse kicked him on the upper jaw. He had a canine tooth that was diseased and I had it extracted. I could readily pass a probe up into the right antrum of Highmore, and I permitted it to drain through that opening. I wanted to operate on the other antrum, but the patient refused and went away a few months. When he returned I found the upper part of the malar bone was necrosed. I was able to bring away a large portion of the malar bone. There was an opening from the left antrum

through the cheek. I operated, scraping away all necrosed bone and the patient got well with five after-treatments. I mention reaching the antrum of Highmore through the canine tooth, which was only accidental, because the patient wanted the tooth out in order to get a new set of teeth. The shape and location of the antrum varies greatly. The portion of malar bone necrosed and removed was $1\frac{1}{2}$ inches wide, and extended back over one inch. This space has been bridged over with fibrous tissue and the patient wears a plate nicely.

Dr. C. R. HOLMES, Cincinnati, Ohio.—Although I arise to not exactly agree on the point of operation, I do so with all due deference for the writer, for whom I have the greatest respect and of whose beautiful work I have long known. I am one of those who do not make the opening through the alveolar process, although I have done so in the past. I have no such record as Dr. Cline, and the number of cases he has treated is of importance. But when you can look into the antrum with a mirror, and curette it at any time, it is desirable. Instead of using gauze I have had flexible rubber plugs made, which are introduced into the opening. These are shaped like a wedge and cause almost no inconvenience to the patient. They can be taken out and sterilized by the patient as often as he chooses. My treatment is practically the same as Dr. Cline has given. I do not favor the introduction of gauze, when we can use flexible rubber plugs, because gauze is not so likely to remain in position. I am exceedingly glad to see this flexible wire drain of the Doctor's, but I am not willing to let the opening be made through the alveolar process. I would like to ask how the Doctor secures closure of the opening.

Dr. E. J. BERNSTEIN, Baltimore, Md.—I would like to ask where the Doctor got the plugs?

Dr. HOLMES.—I had a dentist make them for me in Cincinnati.

Dr. S. E. ALLEN, Cincinnati, Ohio.—We have two classes of antrum trouble, the acute and chronic. In the acute cases I suppose an opening anywhere, maintained for a few days or months, will bring about a cure. As to chronic inflammation of the antrum of Highmore, I have not been sure in my cases that the patient was cured, that is, that the cure would be positive and that there would be no necessity for again cleansing the cavity. It seems to me the only rational way, and that which makes the nearest approach to a cure, is to make a big opening into the antrum and clean it out and make a big opening into the nose. Even then suppuration may go on. But if you have a big opening into the nose, that cavity after a time becomes a part of the nose and you get the nearest approach to a cure. But even then, in my experience, these cases may have trouble afterward. I would like to know what percentage of old chronic cases make a really permanent recovery?

Dr. Geo. C. STOTT, Philadelphia.—I want to say a word in regard to the etiology of these chronic cases. I differ from Dr. Cline and rather lean to the side of Dr. Holmes in that I do not believe that these cases are due to carious teeth. In support of this view, a Russian in 500 post-mortems found 212 had carious upper teeth, but only two of these abscesses of the molars penetrated through the periosteum into the antral cavity. There are a few cases that are caused by carious teeth. Most of my cases have been caused by hypertrophied conditions of the nasal mucous membrane. Dr. Cryer has a very good specimen showing how a carious tooth might cause trouble in the antrum. The carious tooth is surrounded at its root by an osseous wall, formed there in the regular process of Nature to make a cure, and preventing any of the unhealthy material from entering the cavity itself. As to operation in the chronic cases, I prefer going through the canine fossa and then putting in a hollow tube, instead of a solid plug such as Dr. Holmes describes, the upper lip or cheek acting as a valve to prevent food particles entering the antrum.

Dr. L. C. CLINE, Indianapolis, Ind.—There are some points I would like to make a little more clear. As to Dr. Stucky's suggestion as to the details of the symptoms, I took it for granted that most of you knew the symptoms and that we had gotten to the point where we knew we had trouble in the antrum and wanted to get rid of it. We could spend a whole hour on the symptoms alone. The first point is to make a diagnosis, and if there is any doubt about the case I put a hole into the antrum and inject a few drops of peroxid of hydrogen. As to injecting peroxid of hydrogen into a closed cavity, I do not have a closed cavity after I have made a hole into the antrum. It would be a mistake to use peroxid of hydrogen in a cavity containing pus, unless there were an opening into it. I have not attempted to present anybody's theory, but only my own observations. These cases have occurred in my practice and I have not found certain things that I have heard of being in the antrum, such as polypoid growths, etc. I did not find polypoid growths in any of the cases. There were edematous

conditions found in some of them, which were relieved by hot astringent treatment. As to the size of the opening and the size of the tube I use, I made this tube only to show what it is. If I make a large opening I make the tube to fit the opening by using large wire, or if the opening is very large I do not need to use a tube. It is only in the smaller openings that the tube is needed. As to the position, I have tried these various methods and it may be my fault that I did not have success in opening through the canine fossa. My cases have gotten along very much better with the opening where the patient can clean it. My great difficulty has been to get patients to keep the antrum clean. By using an ordinary Davidson syringe, such as is commonly sold in the drug stores, by putting on a tube, they can pump through a sufficient amount to keep it thoroughly clean.

OPERATION FOR UNDESCENDED TESTICLE AND CONGENITAL INGUINAL HERNIA.*

BY ARTHUR DEAN BEVAN, M.D.

Surgeon, Presbyterian Hospital; Professor Surgical Anatomy and Associate Professor of Surgery, Rush Medical College.

CHICAGO.

During the last year I have developed an operative procedure, first in connection with congenital inguinal hernia, and later in connection with undescended testicle, which has been very satisfactory in the few cases in which I have employed it, and which I believe is of sufficient value to warrant my reporting and urging its general adoption. As malformations in connection with the descent of the testicle, we find: 1, the rather common condition of congenital inguinal hernia, due to failure of closure of the vaginal process of peritoneum, and 2, the malpositions of the testicle, which might be divided roughly into three groups—*a*, within the abdominal cavity; *b*, in or about the inguinal canal, and *c*, in the perineum.

Cryptorchidism is not very uncommon, although the condition is usually concealed. Statistics of the Austrian army show one case in each five hundred men drafted for military service. Little attention has been paid to the operative treatment of this deformity in America. Formerly, when a cryptorchid presented himself to me for advice, I dismissed him with the statement that nothing could be done to correct the malposition, and I found from reading our standard surgical works and from conversation with my colleagues that this was the position almost universally taken. This deformity brings with it both mental and physical distress and dangers which warrant surgical interference for its relief—mental disorders, such as hypochondriasis and hysteria; physical dangers, such as hernia, inflammations from trauma, twisting of the cord and gangrene, and a great susceptibility to malignant degeneration.

For some years the teaching of most surgical authorities has been never to interfere with this condition unless urgent symptoms were present, and then to castrate. In the pre-antiseptic and pre-Bassini days, this teaching was undoubtedly correct. To-day, however, our ability to secure normal wound healing and the knowledge of the region involved, obtained from our experience in hernia work, has made this position no longer tenable, and I shall endeavor to show that the rule now should be to operate and transplant to its normal position in the scrotum every undescended testicle which can be palpated, whether it causes symptoms or not.

The malposition of the testicle is often complicated with hernia, and hernia of a very dangerous and distressing type. When the testicle is retained high up in the

*Presented to the Section on Surgery and Anatomy, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

abdomen and does not reach the internal abdominal ring, a hernia is not very apt to coexist, but in one-half of the cases, where the testicle is in or about the inguinal canal, a hernia is present. It is difficult to retain such a hernia with a truss because the pressure on the testicle is unendurable and such pressure is apt to produce traumatic inflammation of the organ.

The malposition of the testicle appears from statistics to make it prone to malignant degeneration in a far greater percentage of cases than in the normal testicle. Zymanowski, who investigated this subject most thoroughly, comes to the conclusion that all retained testicles should be removed because of this danger alone. He was himself a monorchid and died of carcinoma of the retained testicle.

Statistics seem to show that carcinoma of a retained testicle is peculiarly malignant, as no cases of cure have followed removal, all cases dying within a short time of recurrence. I have had but one case of malignant disease of a retained testicle, a case of sarcoma. Castration was followed rapidly by a great sarcomatous mass in the abdominal cavity, metastases in the brain, and death.

A retained testicle in or about the inguinal canal is peculiarly liable to injury, both external injury from its exposed position and also injury from bodily movements, exercise of any kind in which the abdominal muscles are strongly contracted, sneezing and coughing. I have had one case in which the patient was compelled to remain in bed whenever he had a slight cold, because the pain of coughing and sneezing was excruciating. These injuries are followed, when severe, by the sickening sensation peculiar to a trauma of the testicle, nausea and sometimes syncope. Swelling and traumatic inflammation of the testicle may follow, and, if infection from without or through the circulation, occurs, suppuration and sloughing may result. As rarer complications of undescended testicle, hydrocele and twisting of the cord, followed by necrosis, might be mentioned.

One of the accompaniments of undescended testicle, which is seriously distressing to the individual in whom both testicles have failed to descend, is the fact that, as a rule, such testicles are sterile. Why this should be so is difficult to state, because in many animals the intra-abdominal position is normal; the fact remains, however, that most undescended testicles fail to develop and produce living spermatozoa.

I have very briefly stated the dangers and discomforts of the condition of undescended testicle simply to claim, as I do know, your consent to the statements that they are as great, if not greater, than those of ordinary inguinal hernia. We do not hesitate to offer a patient the benefits of an operation for hernia. Why should we refuse the cryptorchid the benefits of a surgical procedure which, if properly done, is as safe and as sure as a Bassini hernia operation, and which is of more value to the individual both from a physical and mental standpoint?

In pre-antiseptic days the treatment of undescended testicle was mechanical. An attempt to bring the testicle into position by pulling and pressing the organ into the scrotum, or the continuous pressure of a truss above the testicle when this could be employed; or when these means failed, which they almost always did, either dismissing further effort, or castration. A few attempts were made to transplant the testicle into the scrotum by a cutting operation, but these failed because of ignorance of the surgical anatomy necessary to unravel the malformation and malposition, or because of infection. Such treatment did not find adherents, because of

the bad results, and was never admitted to the position of a standard procedure.

Soon after the general introduction of antiseptic surgery into German clinics, Max Schuller, then in Greifswald, published in the *Centralblatt*, and also in the *Annals of Anatomy and Surgery*, the description of an operation which he had made for undescended testicle, in which he laid the foundation of a surgical procedure, correct anatomically, in that he recognized the chief factor which prevented the drawing of the testicle down into the scrotum and the factor which drew the testicle back into the old position after operation. This factor was the peritoneal prolongation extending from the general peritoneum to the tunica vaginalis; that after division of this vaginal process it was possible to bring the testicle down into the scrotum without tension. He stitched the testicle to the bottom of the scrotum. His patient made a good recovery and, as he reports, the small undeveloped testicle rapidly increased in size.

Following Schuller, Nikoladoni, Kocher, Czerny and Ziebert in Germany, and Tuffier, Richelot, and a number of other French surgeons have developed the operative treatment of undescended testicle. In Great Britain and America little work of this kind has found its way into the literature, so little in fact that my attention had never been called to the work already done along this line until after I had developed the technic which I am about to report.

In the first place, I desire to refer briefly to the best method of handling the vaginal process of peritoneum in operations for congenital inguinal hernia. I have until recently been in the habit of obliterating the vaginal process in these cases by a purse-string suture at the internal ring, and by whipping up the peritoneum around the cord with a continuous catgut suture, leaving enough to form a tunica vaginalis. I did this because of the great difficulty I had experienced in separating the vaginal process from the cord. I found in one case in which I had done this, that the testicle was dragged high up, almost out of the scrotum, by the subsequent contraction of the vaginal process.

In a careful dissection of the case of inguinal hernia, I found that although it was very difficult to separate the vaginal process from the cord proper, when I opened the inguinal canal widely, so as to expose freely the internal ring, I could very easily separate the peritoneum from the cord just where the cord separates into its constituent elements, i. e., where the vas turns inward and downward and the spermatic vessels pass upward. Here I could readily separate and cut off the vaginal process and close the abdominal cavity as in treating the sac of an acquired hernia. Further, I found that by following the vas and spermatic vessels inside of the abdominal cavity with my finger, and freeing them from the peritoneum covering them, I could pull them a surprisingly long distance out of the abdominal cavity. Since that time I have had the opportunity of operating on four cases of congenital inguinal hernia which I have handled in this way, by an incision three inches in length over the inguinal canal, splitting up the entire length of the canal, freely exposing the internal ring, opening the vaginal process, freeing the vaginal process very high up where the vas and spermatic vessels separate, ligating the vaginal process with catgut at the internal ring and dividing half an inch below the ligature, then, without stripping the vaginal process from the entire length of the cord and without removing any of it, throwing a catgut ligature around it and ligating it so as to close it, forming a large tunica vaginalis.

In operating on undescended testicle, whenever it is palpable above the canal, I have pursued the following technic: Incision three inches long over the canal; the incision should never involve the scrotum. It should never extend farther inward or downward than the external ring. If the testicle is in the canal, split the canal open the entire length by division of the external oblique, draw out the testicle by dividing all the covering over it down to the peritoneum, run the finger along the vas and carefully separate the peritoneum from the vas for two or three inches within the abdomen, run the finger along the spermatic vessels, and in the same way carefully free them from peritoneum. Now separate the vaginal process from the cord high up, ligate the peritoneum of the internal ring, and divide the process half an inch below the ligature, remove all the coverings from the cord, so that the testicle hangs suspended by the vas and the spermatic vessels. It is surprising to find how movable the testicle now becomes. It can be readily laid on the thigh several inches below Poupart's ligament. The index finger is now carried into close contact with the external oblique over the crest of the pubis into the scrotum, and with the blunt dissection of the finger a large pocket is made on that side of the scrotum for the reception of the testicle, great care being taken to make the opening of the pocket only as large as necessary to admit the testicle. The very freely movable testicle is now carefully slipped into the scrotal pocket, where it remains without tendency to retract. The testicle is not sutured to the scrotum, such suturing being of no value in preventing retraction, simply adding the risk of complications. If the testicle has been properly freed, it becomes at once evidence that such suturing is superfluous, and if the testicle has not been freed sufficiently and can not be retained in the scrotum without suture, then one may be sure that it will retract in spite of such suturing. The inguinal canal is now restored as in a Bassini operation for hernia, or what is probably better a Bassini operation without transplantation of the cord, which Semm advocates as preferable to a Bassini and which Ferguson of Chicago described as the typical hernia operation. After the closure of the canal and external ring there still remains one of the most important steps of the operation, i. e., the sewing of the deep layer of the superficial fascia to the aponeurosis of the external oblique by means of fine buried catgut. This is done throughout the operative field, over the inguinal canal, and well down over the pubic crest to the neck of the scrotum. The object of this step is to obliterate the areolar space between the superficial and deep fascia in front of the external ring. It is in this space that the testicle retracts in case of recurrence of the malposition.

I have in this manner operated on four undescended testicles, one double and two single cases. In all of these cases the freeing of the testicle was easily accomplished after the manner above described. In all cases the testicle could be laid on the anterior surface of the thigh three or four inches below the external ring. All of the cases had open vaginal processes practically, therefore congenital inguinal hernia. In but two, however, was the existence of hernia made manifest by symptoms. In the two single cases there was an abundance of scrotal tissue and no difficulty was experienced in making the scrotal pocket. In the double case, however, there was absolutely no scrotum, in the sense of a pouch, before the operation. The skin was perfectly flat from the root of the penis to the perineum, but was thrown into transverse ridges by the muscle tissue of the dartos. After freeing the first testicle it was found that this

tissue could be very freely stretched and a good-sized pocket was made with the blunt dissection of the finger. After the double operation had been completed—in this case the testicles were almost normal in size—the scrotum looked like some of the cases where a very extensive amputation of the scrotum is made for varicocele. The operative wound in all cases healed by first intention, and in none has there been any tendency to retract. The three patients operated on were about the same age, one 20 years old, two of 21. I believe that the age of selection for this operation would be about 15, or, better, let us say, immediately after the age of puberty. It is possible, however, that a more extended experience will select the period before puberty, from 8 to 12. Not one of these was more difficult to perform than a simple Bassini hernia operation. The results have been satisfactory. I might add, I have never had more grateful patients. The condition for which the operation was performed was certainly of more moment to the individual than the existence of a simple inguinal hernia.

As results of the operations, the patients were freed from hernia and dangers of hernia. The testicle was placed in its normal position where it is probable it will develop into a normal testicle. The testicle was removed from an exposed position where it was subject to trauma and inflammation, and it is probable that after such an operation the testicle will be less likely to become the site of malignant degeneration than if allowed to remain in a position where it was constantly subjected to trauma. This operation is to be preferred to castration, as it saves the testicle for the individual. Aside from the mental value of such saving, it is not improbable that the addition to its function of producing spermatozoa, the testicle, like all other glandular organs, produces certain compounds which are of value in the normal life processes.

Because of the benefits produced by this operation; because of its safety; because of the dangers incident to the deformity, I would urge the general adoption of the operative treatment for the relief of these patients. Certainly, in the light of our present knowledge and skill we can assure these patients that an operation holds out to them a reasonable prospect of cure, and that the dangers of a properly conducted operation are far less than those of the continuance of the deformity.

DISCUSSION.

DR. SAMUEL E. MILLIKEN, Dallas, Texas.—I am glad to have heard Dr. Bevan's paper, as the subject of undescended testis is one of particular interest to me. At the Detroit meeting in 1892 it was my pleasure to report a case and demonstrate the operation, which was performed on a patient suffering from congenital hernia. Dr. Bevan goes a step further in that he enters the abdominal cavity for the purpose of loosening up the attachments to the spermatic cord. This operation is thoroughly scientific and justifiable. The ages of the patients on whom I have operated range from 8 to 20 years, but I prefer to operate at about 12 or before puberty. The case reported to this Association in 1892 was one of retained testis and strangulated hernia. Bassini's method of reconstructing the inguinal canal was employed, and after all the cremasteric fibers had been relieved, the testis was easily brought into the scrotum and anchored by passing a single catgut suture through the partially obliterated tunica vaginalis and scrotal walls. The organ remained in the scrotum and the patient was subsequently presented to my class at the New York Polytechnic.

DR. J. P. LORD, Omaha, Neb.—Those who are in the habit of attending medical meetings are wont to state that it always pays financially. I shall go home now and will enter into correspondence with a number of cases of this kind which I have turned off, thinking that operative interference was not practicable. I want to call attention to an etiologic factor in the production of this condition. I have in mind a case that came to me a couple of years ago, a man of 42 years of age, who reported that he had normal testes, as he supposed, that is, they

were normally located until he had a very severe attack of parotitis, with metastatic inflammation of the testicles. At that time the testicles retracted to within the canal; they continued to remain there and because of their presence in that locality he was continually subjected to attacks of inflammation which rendered him perfectly incapable of pursuing his vocation as a farmer, it being necessary for him to remain in bed. This man consulted me for an operation. I laid the matter before him, stating that I thought the removal was the only feasible thing, if he would consent to it. I think this operation of Dr. Bevan's would be applicable to that man, that there would be relief for him. This case was entirely novel, as far as I know, in producing these anomalies independent of the congenital conditions.

DR. M. L. HARRIS, Chicago.—The main point on which I wish to say a few words is the time that the operation should be done. There are two factors here involved—the first one is the necessity of an operation, and the second is the functional capacity of the organ. I do not think it is advisable to operate on these cases previous to the age of puberty. It is well known that the testicles may remain in the canal until puberty and then descend. It is impossible to say when a testicle will descend previous to the age of puberty. Lauenstein has reported a very interesting case in this connection. In a youth with double retained testicle, one side was operated on previous to puberty. The patient left the doctor, returning after puberty, when much to his surprise he found that the testicle on which he had not operated had descended into the scrotum nicely; the testicle he had operated on and replaced had again retracted, and he had in addition an inguinal hernia on that side, which had not previously existed. So I can not agree with Dr. Milliken that these cases should be operated on before puberty. These testicles do not lose their functional capacity because they are retained, but they are retained because there has been imperfect development from the beginning. I have removed a number of retained testicles after puberty in patients from 20 to 30 years of age, and in every case that had gone beyond the age of 25 no living spermatozoa could be found in these testicles; every one of them had become incapacitated for producing living spermatozoa. Such has been the experience of a number of observers who have made microscopic sections of these cases. This means that if cases are to be operated on at all it must be done early, that is, immediately after the age of puberty. At this time many of these testicles do retain some functional capacity, and the aim should be to preserve, to every extent possible the little functional capacity which these organs possess. Therefore, I would make the point that these cases should not be operated on until the age of puberty, and then operated on as early as possible.

DR. L. L. MCARTHUR, Chicago.—I have under my care three cases that I have operated on for this trouble, one with double and two with single undescended testicle. No testicle should be extirpated until a reposition of that testicle in the abdominal wall, extraperitoneally, has been tried; if it is feasible when the testicle can not come down, that such a testicle should be dropped into the pouch outside of the peritoneum within the small pelvis. This is easy of accomplishment for all these in which we have to do a Bassini to correct the dilated inguinal canal any way, and would be easy of performance where the dissection had been made. The presence of such an organ is possible and it is inexpedient to remove it until reposition has been tried. In two cases in which I found it was impossible to bring it down satisfactorily, even by loosening up the epididymis from the testicle and dropping the testicle down, still the length was not sufficient to bring it with the hope of its remaining in the scrotal position, and in these cases I have put them back, and after a lapse of two or three years there has been no complaint on the part of the patient.

DR. R. C. DUGAN, Evota, Minn.—Would Dr. Bevan make no distinction as to time of operating between those cases attended with and those without hernia? In other words, would he put off a hernia operation to a later date on account of an undescended testicle?

DR. F. C. SCHAEFFER, Chicago.—The remarks of Dr. Harris are well taken. I recall the cases of four children who had undescended testicles, between the ages of 7 and 11 years, two accompanied by hernia. They were kept under observation, and in all of them, by the age of 18, the testicle had descended and the hernia also disappeared. Judging from this experience, I am satisfied that the operation should not be done until the time of puberty, excepting for special reasons.

DR. A. D. BEVAN, Chicago.—I had a case two weeks ago illustrating the anomalies of position of undescended testicle. I do not know that you would class it as an undescended testicle, because it had descended through the inguinal canal, but had been displaced on to the abdominal wall in the groin. There

was an accompaniment of a congenital hernia. This patient was a typical hypochondriac; and completely incapacitated from doing any work. At one time there had been an attempt made to retain the hernia with a truss, and you can appreciate what the effect was on the testicle resting on the external oblique muscle. I wish to mention it to condemn the practice of applying any truss to a hernia accompanied by a supposed undescended testicle. They are not all undescended testicles, but simply a testicle that failed to descend into the scrotum, as this case demonstrated. In this particular case I was very much pleased to find what could be truly said to be a beautiful appearance of a normal development of the vas deferens with a displaced testicle, fully three inches of the vas deferens knotted up in a condition like a varicocele; the different coils had to be dissected apart. The operation was made not unlike that of Dr. Bevan's, and the testicle was readily placed into the scrotum and retained there. The peculiar position is one which should not be overlooked.

DR. THOS. H. MANLEY, New York City.—One word has been suggested to me by the remark of Dr. Bevan, and it is one of very great importance, that is with reference to the application of a truss in these cases. Dr. Harris has spoken about the etiologic factors in operation. In the most of them his position is, no doubt, correct. The causes of ectopic testicle are dependent on arrest of the descent of the testicle. My experience is that it is dependent on other causes also, and that the most prolific in many is an improperly constructed or a prematurely adjusted truss. As a matter of fact, during the first year in a great many children the vaginal process is not completely closed. The cremasteric muscle possesses the power of dragging the testes up into the inguinal canal. You take a case of this kind, complicated, at least, early in life, with a small hernia, the testis with a tendency to glide up and down the inguinal canal, and you apply a truss and lock the testis in the canal, and you provoke an adhesive inflammation, you may reduce the hernia but you have fixed the testis, you have artificially brought about a condition of monorchism. My experience has led to the opinion that if the hernia is not large, in those cases we had better leave them alone until after puberty, because, there is no doubt, a considerable number of the cases tend to undergo spontaneous cure. If we have an enlarging hernia present, however, and we perhaps will in a certain percentage of these cases, then comes the question as to what to do. Then, unless there is a large or irreducible hernia, we would better not do anything but wait, as the tendency of infantile hernia is to undergo a spontaneous cure, the hernia tends to ascend and the testis to come down. If the case has gone along until after 21 or 23, and there is no disturbance, it is a question in my mind whether we are justified in doing anything. On the other hand, if we have evidence of irritation, the testis possibly taking on degeneration or malignant changes, it is another matter. Then, the thing to do, assuming that the position taken by Dr. Harris is correct, with those passing beyond the age of puberty—the functional capacity of the organ *nil*—is not to bring the organ down, but do a castration. The operation recommended by Dr. Bevan is one involving an extensive dissection, one that should not be undertaken by a person not well skilled in anatomy, and one which, if not performed with great care, would be apt to leave a tendency to hernia—a hernia very difficult to manage. I would like to have Dr. Bevan tell us how he does a Bassini operation. He says those cases can be treated by the Bassini operation without obliterating the inguinal canal.

DR. R. HARVEY REED, Rock Springs, Wyo.—The sum and substance of this matter is: What benefit are we going to get from an operation of this kind or for any operation for the relief of a retained testicle? My experience has been that in the large majority of these cases, the organ has become atrophied and worthless. It seems to me that the principal object in surgery is to give not only relief, but to derive some benefit, and the only benefit that I see in the majority of these cases, if operated on after puberty or after the age at which there is recognition of the existence of a testicle, is to convey to the mind of the patients that they still retain their testicle. As to the actual benefit derived, I question it very much. In the majority of cases in which I have operated for undescended testicle, I have found many of them degenerated beyond all hope of restoration. In others I was unable to bring the testicle down on account of a contracted and thickened cord, which would not permit the testicle to descend. It has always been my rule to bring the testicle down if possible, but, if I failed to do so, I removed it, for in many of these cases the surrounding tissues would become thickened and give pain to the patient, subsequently requiring a castration for the relief of the pain.

DR. A. D. BEVAN, Chicago.—I desired in reading my paper to present the subject and emphasize the surgical connection

of the parts involved. It is quite difficult to describe any operation clearly as in a hernia operation, with words, and I have a number of plates which I believe will give one a better idea of the operation than any description. I recommend the age of 15 or roughly putting it in that way, just after puberty, and I am glad to find that the majority of the gentlemen agree with me in adopting that age, because of the possibility at any time up to 15, or after 15 of the testicle itself descending. I would not delay an operation for hernia until 15; if the undescended testicle was accompanied with hernia we should do the operation at once. As to the statement of extensive mutilation, the operation involves practically just the same region and almost the same structures as are involved in a Halsted hernia operation. We do not consider that a very extensive operation. The cases that I have operated on have a small hernia occurring high up on Poupart's ligament, just as in a modern hernia operation. Dr. Manley asked me in regard to doing this operation as a Bassini operation, without transplanting the cord. I should say to him that Dr. Ferguson, in his description of a typical operation, does what I described as a Bassini operation, without transplanting the cord—opening the canal, leaving the cord in place, stitching the conjoined tendons of Poupart's ligament over the cord. The cord is left below the conjoined tendons in the normal position. Then over this closure of conjoined tendons and Poupart's ligament, the suture of Poupart's ligament and the external oblique as in a Bassini operation. This is done by a number of men to-day.

CHLORETONE¹: A NEW HYPNOTIC AND ANESTHETIC.

BY E. M. HOUGHTON, PH.D., M.D.

Lecturer on Experimental Pharmacology in the Detroit College of Medicine,
DETROIT, MICH.

AND

T. B. ALDRICH, PH.D.

Late Associate in Physiologic Chemistry in the
Johns Hopkins University,
BALTIMORE, MD.

Chloretone, acetonechloroform, or trichlor tertiary butyl alcohol, has, according to Willgerodt, the following formula:



It is formed when caustic potash is slowly added to equal weights of chloroform and acetone, and may be isolated from this mixture, after the removal of any excess of acetone and chloroform, by distilling with steam. Obtained in this manner, it is a white crystalline compound, having a camphoraceous odor. When freed from water by melting, and allowed to cool, the camphoraceous odor is more pronounced and its general appearance resembles camphor more closely. It is very soluble in chloroform, acetone, strong alcohol, ether, benzine, and glacial acetic acid, sparingly soluble in cold water (1 per cent.), more soluble in boiling water. Dilute acids and alkalis are apparently without effect; concentrated sulphuric acid decomposes it. When purified by distillation with steam or when recrystallized from water, it melts between 80-81 C.; when freed from water, readily accomplished by distilling, it melts between 96-97 C.; and boils at 167 C. (Willgerodt). At body temperature it sublimates in the form of beautiful white needles.

If chloretone crystals or the tablets containing the substance are administered to animals, per stomach or rectum; if a solution is given per stomach, per rectum, subcutaneously, intravenously, intra-abdominally, or if the animal be confined in a tight box and compelled to inhale air saturated with its vapors, all degrees of hypnosis to complete anesthesia may be produced, lasting from a few hours to several days, depending on the

amount of the substance entering the system, the animal finally recovering in excellent condition if the dose is not too large. However, when an extremely large quantity of the drug is administered the animal remains completely insensible for several days, the respiration becomes slower and weaker, finally ceasing altogether, the sleep of anesthesia terminating in the sleep of death. When administered per stomach, more quickly when followed by considerable water, chloretone passes rapidly as such into the circulation, and is distributed as such throughout the body. The spectroscope fails to show any effect of the drug on the hemoglobin of the blood even after exceedingly large doses have been administered.

The pulse-rate is slightly lessened, but the action of the heart, under the influence of chloretone, remains excellent until the organism begins to suffer from a lack of oxygen. Frogs are very quickly overcome by the action of the drug when it is applied in vapor or liquid form. The local application of aqueous solutions of chloretone to the laid-bare frog's heart produces slowing of the rate and a more complete contraction of the organ, reminding one of a digitalis heart.

Kymographic tracings taken from the carotid artery of dogs show that blood-pressure usually remains unaffected, in several instances the pressure being a little higher at the end of an experiment occupying six hours than at the beginning.

The amplitude of the contractions of the ventricle as recorded by the myocardiograph remains constant for many hours. (See tracings.)

The main action of the drug is confined to the central nervous system, it being essentially the same as that of the other anesthetics and hypnotics of the fatty acid series, differing from most of the members of this group in not depressing the circulatory system. Chloretone, besides its central action, possesses local anesthetic properties in a marked degree, resembling cocaine in many respects. Indeed, it will probably be found a useful substitute for the last-named drug, as the small amounts introduced subcutaneously to produce insensibility to pain in surgical work are entirely harmless.

Experiments seem to warrant us in making the statement that chloretone has a selective action for the central nervous system—more chloretone having been found in the brain in several instances than in any other organ of the body.

Blood serum and other organic fluids are preserved for an indefinite time if saturated with chloretone, a little more than .5 per cent. of the substance being dissolved. Culture experiments with various kinds of bacteria also prove that chloretone possesses considerable antiseptic properties.

We would naturally expect, since chloretone is volatile at even ordinary temperature, and since it circulates in the blood, that it would be eliminated by the lungs. Carefully conducted experiments thus far have failed, however, to detect it in the expired air. In any case it must be eliminated in very small quantity. Even after very large doses have been administered, chloretone has never been positively recognized in the urine of animals, neither has acetone nor chloroform been detected with certainty. The chlorids in the urine of a dog fed on a fixed diet are markedly increased after the administration of chloretone, and remain high some days after the discontinuance of the drug. It seems probable that chloretone is decomposed—or burned down in the body—this view would accord best with the facts that we have already observed.

¹ In order to avoid confusing this subject with "acetone chloroform" (a name which has been applied to chloroform made from acetone), we have deemed it advisable to use the name "Chloretone."

During the past few months chloretone has been quite extensively employed clinically. From our own experience and that of numerous other observers, we may briefly outline its therapeutic properties as follows:

In cases of lacerated wounds, burns, etc., it is very efficacious in lessening pain when the injured parts are freely bathed in aqueous solutions of the drug. Owing to its antiseptic properties, it may be used independently as a surgical disinfectant, or if a strong antiseptic action is desired it can be employed in conjunction with mercuric chlorid, carbolic acid, etc. Pain and uncontrollable vomiting of gastric origin may frequently be relieved very quickly by its internal administration. In one instance the drug proved especially useful in checking the persistent vomiting of gastric carcinoma. It may be possible that the drug will prove to be a useful therapeutic agent in preventing or controlling sea-sickness, vomiting in pregnancy, etc. Laboratory experiments quite conclusively show that it renders the mucous mem-

count. Chloral is quite irritating to the stomach and depresses the heart's action. Chloretone does not possess any of these disadvantages, being only rarely followed by disagreeable after-effects. Occasionally, when large hypnotic doses have been given, drowsiness occurs on the following day.

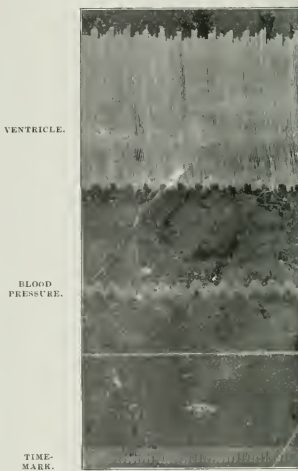
In general we may summarize our claims for this drug by stating that its action on the central nervous system is similar to the anesthetics and hypnotics of the fatty acid series without depressing the centers of the medulla; locally, it acts like cocain, as a peripheral anesthetic.

It is too early to prophesy what position chloretone will take in medicine, but the results as a hypnotic and local anesthetic are very encouraging. As high as 60 grains have been given at one time, without producing any untoward symptoms. From 6 to 20 grains given in tablets at a single dose, followed by a drink of water or milk seem to be quite sufficient to produce the desired results. Possibly the drug will prove to be a useful gen-

9:30 A. M.



5:30 P. M.



brane of the alimentary canal insensible to irritants. Mustard, when given in an aqueous solution of chloretone to dogs, fails to provoke emesis, the animal usually going quietly to sleep. That the mustard produces the usual amount of irritation is shown by the fact that if on the following day the animal is killed and the intestine examined, its walls are found much inflamed, the parts coming in contact with the mustard in some instances being nearly vesicated.

As a hypnotic, chloretone is frequently efficacious in various conditions. Especially good results have been obtained from the exhibition of the drug in cases of persistent insomnia in the aged; cardiac disease with renal complications accompanied by high arterial tension. In many instances where morphin, chloral, trional, etc., have been unsatisfactory, chloretone has been successful. Morphin, as is well known, increases the excitability of the nervous system when administered in large doses, and is frequently objectionable on this ac-

eral anesthetic when administered in large doses; or it may be given before chloroform or ether and allow complete anesthesia to be produced by the use of a minimum amount of chloroform or ether. Perhaps such administration may prevent the annoying vomiting that so frequently occurs when a patient is being anesthetized. Chloretone is nearly an ideal anesthetic for use in experimental surgery, physiology, pharmacology, etc., as has been abundantly demonstrated by Abel of Johns Hopkins, Cushny of Ann Arbor, and our own experience in the laboratory for several years past. About .2 gr. per kilo body weight is the proper dose for dogs, where it is intended to keep the animal alive; if, as is frequently the case in physiologic and pharmacologic work, the animal is not allowed to recover, much larger doses may be given without interfering with the experiment. We have nearly completed an exhaustive systematic investigation of the chemical and pharmacologic properties of chloretone, which will be published in detail in the near future.

THE DOUCHE.

ITS RISE AND DECLINE, BUT PRESENT RESTORATION.

BY FRANK A. STAHL, M.D.

INSTRUCTOR IN OBSTETRICS, RUSH MEDICAL COLLEGE,
CHICAGO.

Until 1894 obstetric opinion scarcely doubted that the douche was advantageous as a prophylactic measure. Till then the clinician pointed to his improved statistics as proof positive. Döderlein and others reported, from bacteriologic examination, that the vaginal secretions contained micro-organisms, pathogenic, non-pathogenic but corrective, and some whose functional possibilities could not be interpreted. The conclusions followed that the prophylactic douche of the clinicians seemed also to be substantiated by the bacteriologists. For they stated that the vaginal secretions were not sterile, therefore were not sufficiently bactericidal in function; auto-infection, its probability more especially, seemed proven, and in no small degree, because of the presence of these latter non-interpretible germs. It could not be said they were indigenous, or of external origin, or that they were external germs arrived in the vagina, and had given origin to a new form, which remain in this quiescent, uninterpretable state, waiting for a favorable occasion, like labor, to develop into a more mature organism with probable pathogenic properties.

These questions could not then be answered, nor were they afterward, nor have they as yet been successfully solved. Clinically and bacteriologically, until Krönig appeared in 1894, Ahlfeld's auto-intoxication seemed justified; the prophylactic douche, though questioned by some, was quite generally adopted.

Similar in tone and conclusion to Gönnér, who had previously (1887) reported that "the vaginal secretions of thirty-two pregnant women did not contain pathogenic organisms usually found in puerperal infection, that auto-infection was not possible, that the prophylactic antiseptic douche was not necessary," came Krönig's articles in 1894, with the startling assertions that the other fellows were all wrong in their conclusions, because they were based upon incorrect technic in bacteriologic research; that the vaginal secretions of pregnant women, acid, alkaline or neutral, were free of pathogenic germs; that the secretions possessed bactericidal properties; that to remove them was unwise and harmful; therefore, the obstetric world was woefully in error that it continued to douche; last, but not least, Ahlfeld was disproven. Shortly afterward Menge reported a similar testimony as to the properties of the vaginal secretions of non-pregnant women, that they were bactericidal, but to a less degree than in the pregnant, and showed with experimental vaginal inoculations of pathogenic germs that such germs, without the douche, met with a more timely neutralization in the non-pregnant vagina than when the douche was previously used.

From Döderlein to Williams these assertions were indeed startling; they stunned. Before this statistics; discussion in congress and society; technique, all and everywhere, scientific expression vied with each other to testify to the beneficial effects of the douche. Auto-infection, championed by Ahlfeld, though struggling in the throes of doubt, had held its own among the probable probabilities. Alas for all this heralded philanthropic achievement on the part of the obstetrician, Krönig's conclusions, apparently supported by Menge's

work, seemed to act like a cyclone, uprooting previous doctrine. The majority of obstetric thought fell prostrate before them. This is no reflection on the majority or their weak-kneedness, or of the profundity of their previously asserted comparative clinical observations and deductions. No, they were all that; I envy only Krönig and his wonderful victory! For by one man, controlling but a comparatively speaking not-great clinical field, coming upon his opponents in the full daylight of scientific struggle, as if with a breath of air, like Sennacherib's hosts, they were laid prone, paralyzed—but few remaining to bear the tale, all embarrassed to hold high the head!

Whether right or wrong—for this year's (1899) German Gynecological Congress throws great doubt upon the accuracy of his views—Krönig must ever be complimented with the laurel of so successful a *coup d'état* in the amphitheater of scientific controversy, and that, too, in the presence of overwhelming antagonistic scientific thought; a stroke rarely offered and rarely achieved! As a gladiatorial feat, bravo, Krönig!

Döderlein, the mighty, wavered; he surrendered the prophylactic douche; he seemed bewildered as to the judiciousness of the douche as a whole. He was not alone. Williams accepted Krönig's suggestion that his bacteriologic investigations of 1893 were technically wrong—naturally his conclusions. In his new series, reported¹ in 1898, he, truly gentle, acknowledges his error, and again offers a new series of conclusions, that vaginal douches are not necessary, and are probably harmful; auto-infection is possible from bacteria in the vagina in very rare instances, etc. All this because of a *single* charge of "error in bacteriologic technique." Where was their strength, which was theirs by right of comparative clinical results? Judging from previous bacteriologic experience, who knows that the morrow will not bring forth another bacteriologic David, whose sling will contain a mightier bacteriologic technic, which will again lay prone? Verily, verily, consistency, thy name is not alone gynecology.

The majority soon discarded the douche—at first, the prophylactic, then the douche altogether, reserving its use for operative and necessary cases only. Now, it appears to the writer that the moment the new departure did so reserve its use for the operative cases, they acknowledged as true all they claimed was not true. Why, then, so consistently douche, when operating with forceps, turning or other hand and instrument-invading operations, where skin and instrument contact with infection possibility, is a prolonged one, if secretion is sterile and bactericidal; douches harmful; in rare cases only can there be auto-infection. Does not the very fact that they recommended the douche in these cases prove their lack of faith in their own conclusions? The very fact that they recommended the douche in operative and necessary cases shows that they admitted that the douche does possess virtues? If the douche is harmful, why did they wash away the protecting secretions? For here, in the operative labor, exists a far greater test of virtues than in the normal labor. Explain, you who objected to the douche.

Notwithstanding all this departure from the previous methods, here and there there remained a few, erect and fearless, whose presence proved their worthiness to survive, by the fact of their unaffected strength. Ahlfeld remained unshattered. Throughout obstetric realms this minority, willing to, but with the evidence

¹ Williams: The bacteria of the Vagina; Amer. Jour. Obstet., Oct. 1898. Here also may be found a complete bibliography on this subject.

in hand could not be convinced that previous clinical experience was all wrong, injurious and injudicious. Comparative clinical results spoke not in such a tone, neither so loudly nor so impulsively.

In 1898, notwithstanding Williams' position and positivism, before the American Gynecological Society, even alongside the fulsome praise most justly rendered his careful efforts, we find Reynolds stating that as "practical surgeons, however, we could not allow a laboratory demonstration of the innocuousness of the vaginal secretions to justify us in acting as though that innocuousness were a certainty, until it had been backed up by abundant clinical observation." In this expression may be seen reflected a sentiment felt in the main by all of that minority who had not been convinced. It is but a few months since a similar pro-and-con discussion occurred in the Chicago Gynecological Society; search will reveal a like disparity in thought in many such obstetric discussions.

It is admitted at the outset that the need of the douche to-day is not so broadcast as twenty years ago. Such denial would be tantamount to saying that all clinical and moral instruction passed between obstetrician and patient this many years had been without permanent effect. This is not so. Throughout the civilized world gynecologic physical expression is more hygienically perfect to-day than ever before; mortality proves that it never can be perfect, or without destructive influences. Ethics, hygiene, environment, all teach this to-day and not without avail.

So far as the charge that the douche² can harm is concerned, the clinician has always asserted that it, like any other means, can do harm, can inflict injury; we have, and there is, no means, however good, however harmful, but may be made to have a beneficial or an injurious effect. It is the intelligence of the one who employs it that determines the desired result.

The douche can harm only if repeated too often; if its force and volume be too great; if its temperature is too high; if a many-opening point be used. This latter is of the greatest importance. Argue as you may, no complete flushing occurs before the end of the many-opening point; as a consequence those parts in front of the point remain without the cleansing advantages of the douche; with the many-opening point there is only a backward flushing, not a forward and then a backward, like in the single-opening point. This will explain the many cases where, notwithstanding douches were given, cervical and high diptheritic-looking puerperal patches still presented.

The clinician has maintained that to douche the parturient canal like judgment should be exercised as with an open surgical wound. Formerly excessive sponging (rubbing) and irrigation, even during the operation, interfered with primary union, by rubbing and washing away the physiologically exuded serum, and irritated the severed surfaces. To-day a better technic exists where these, the first-night errors of primary Listerism, have been corrected. He does not douche so often nor does he believe he need or can destroy all the germs with his solution; to him even now,

practically, it is immaterial what the germ is; if he can but obtain good drainage from the genital tract he feels confident that his douche will do here what the douche will do in a surgical wound anywhere—it will remove the undrained retained discharges, and lead to a more clean and rapid restoration. By douching the wound he stimulates the cells to a healthier activity, he encourages the normal contractility of the parts, thereby assisting the fibers to express and expel any foreign material, as exudation, retention, pus, etc., there may be in their interstices, for in all parts of the body there is a functional contractility that determines toward an external expulsion. In the abscess, like in secretion, there is external determination by this contraction in the direction of the least resistance. Surgical drainage is but the artificial amplification of this natural expression.

Another argument which the antidouchist uses and which is often heard: Regard the Indian woman; she does not douche. No, neither do the many other aborigines. Admitted he is correct. Inquiry elicits that neither do the Chinese, nor the great multitudes of aboriginal women in both Asia and Africa use the douche or bath. Does this strengthen his position? Decidedly not, for where will you find such an antidouchist who will charge himself with the assertion that the woman of the aborigine is the equal of the woman of the Anglo-Saxon of to-day—physically, intellectually and morally? Further, the relative position in influence of the races but accentuates this point. Comparative anatomical and intellectual study of contemporaneous woman disproves that the douche, a localized bath, used with discretion, injures. Compare even the Anglo-Saxon woman of any strata one cares to choose. Among the socially most elevated or most modest, whom do you find the highest typed? She who is well groomed—judiciously and rationally. Do not the grand physical and mental pictures of the presidents of our great women's bodies betoken the careful grooming of bath, food, and method? This is the type Oliver Wendell Holmes referred to as the mother of the American Brahmin. Regard the farmer's wife; the one who is careful in grooming, the one who is slovenly; where lies physical strength and mental power, and vigor of offspring?

In the masterpiece of the Oriental harem, conveying the story of the slaves assisting at the bath, does not the artist hint, as delicately as subtle blending of color and shade render possible, by the gentle inclination of the slave's hand upon the robe, that those parts too are of no minor importance in the bath? Synthetically, with his brush, the master expresses whole volumes of critical gynecologic anatomy, hygiene, psychology, and social economics of the period. Science of to-day can only try analytically to explain and fill in the detail of determining cause, so perfectly appreciated and expressed by the master. And in his detail of the inclination of the hand was it but to serve as a fig leaf? What do the eyes of mistress and slave say? The one gratification in possession, the other gratification in the artistic preparation.

The Talmudic injunction to the Hebrew women: There shall be abstention for seven days subsequent to cessation of menstruation—which is to-day rigorously held by the orthodox, and which for all races would be an excellent law, solving many suggestions outlined in Bulwer Lytton's "The Coming Race"—when this period of separation shall be ended and before she may discontinue the separation, she shall dip herself even be-

² Concerning the douche as a routine measure in the puerperium, it is stated: "In several (among how many?) cases the writer has seen infection in a later period of the puerperium the use of dirty syringes in the hands of the nurse."—Obstetrics, page 358. This observation may be extended, and with equally great force, to all surgical irrigations. The conclusion here intended must be that the reflection is not upon the douche, *per se*: it can only be upon the individualism of the user. Nor should it be overlooked that the exception does not break the rule; the exception proves the rule. Again, what traveller is there who has not observed that even the great men, the masters of the arts and in all climes, exceptionally err. Is, therefore, the conclusion justified that the exceptional and individual error annihilates all general and intrinsic merit?

pond the hair of the head three times in *running water*. Is it not here suggested, among other good suggestions, that the infective probabilities of the secretions were well known; does not this ancient ceremonial cleansing suggest the modern douche?

Likewise the ancients knew of the tendency of the lochia to grow in unclean and infective quality from day to day. Again, she was separated thirty-three or sixty-six days "to continue in the blood of her purifying." (Leviticus, xii.) Later the clinician explained this growing infectiveness on the ground that external causes worked upward, and that this pathogenicity declined in proportion as two important factors were present: 1, the neutralizing effect of the physiologic resistance, both local and general; 2, assisted by the neutralizing effect of the stimulation from the cleanliness, for the latter increases the former. This beneficial effect of cleanliness must have influenced the theologian, the clinician to the first prophylactic douche, though possibly he knew nothing of bacteriology (Leviticus, xii-xv), the phenomena alone directing him. A good illustration of this ascending infection was to be seen in the usual course of Cesarean section anterior to the perfected operation of to-day, when the open uterine wound was the rule. The secondary ascending putrefactive uterine juices infected the uterus—the old uterine inflammation—and the abdomen; this was more fatal in effect, in lowering the vitality and favoring secondary hemorrhages and sepsis than the primary operation.

That the upper and vaginal secretions are bactericidal must be admitted; all physiologic secretions of the body, like the serum, are inimical to invading influences, but let some change in stimulation occur, a like change will occur in secretion and function; their properties will be increased or diminished. That we can not rely on the vaginal secretions as always possessing essential sterile-producing qualities, as the bacteriologic conclusions of Krönig, Menge and Williams would seem to convey, is proven beyond a doubt by the primary and secondary venereal and other bacterial tissue changes produced by their micro-organisms upon the cervix and in the higher vagina. Another clinical suggestion as to the unreliability and variability in the apparently sterile properties of the non-pregnant or pregnant vaginal secretion is as follows:

Two friends, innocent of any previous glaring expression, visit the same hetera. In the interval she bathes, but because of the urgency of the moment, she takes time only to bathe the externals. A few days after Friend B, embarrassingly, but with full confidence, asks Friend A if he is all right. A smiles at B's discomfiture, and congratulates himself that he was not second best man. B, crestfallen, hies himself away for diplococci treatment. This is no uncommon clinical experience. The explanation is simple. A met with a secretion inert, apparently sterile; possibly some diplococci may have shown on bacteriologic examination; if so, their influence was *nil*. But due to the stimulation of A's presence, a newer, fresher secretion appeared, poured out from the deeper mucosa, which,

³ It is interesting to note in connection with this subject of the variability and unreliability of bactericidal and infective properties of secretions where apparently sterile that: "In a recent controversy between Behrens, Berliner, Kili, *Wochenschrift*, 1888, No. 6, chief of official examiners of hetera in Berlin, and Neisser (*Ibid.*, No. 9), it has been demonstrated that for the diagnosis one can not depend solely upon Behrens' assertions that there may be a permanent or intermittent disappearance of the gonococci with a continuance of the clinical symptoms, or the latter may subside with a persistence of the gonococci, or both may disappear simultaneously. According to the official instructions to the medical examiners of Berlin, hetera are to be held under surveillance so long as they are capable of transmitting infections."—*Progressive Medicine*, Vol. 11, June, 1899, p. 182.

when B was received, left an impression of bacteriologic character, whose unsterile intensity soon made itself manifest in its higher color of the next seven to seventy days. There is no doubt that B's skepticism—for he was no medical student—of secretional sterility was based upon good grounds, for had the vaginal prophylactic douche replaced the external bath, most probably B's tender reminiscences would have struck a less pathetic chord.

Krönig and Menge must admit that their laboratory probabilities of results in inoculation and cultivation are not the laboratory probabilities of the everchanging functional susceptibilities of the vagina of the non-pregnant or pregnant. That the prophylactic and protective douche is injurious, even to Menge must appear more than doubtful.

Again, consider a practical business, and one founded on commercial and competitive lines; it can not be fostered by methods having injurious and harmful probabilities. If there were no virtues in the douche, even to the non-pregnant, the dermatologist of experience, when requested for his experience upon this subject, could not testify to the fact that, even prior to the certificate, the presence of the douche-bag in the chamber of the successful commercially inclined dispenser of Schopenhauserian pleasures, suggests a vaginal hygiene conducive to the more happy preservation of the clients' physical and mental state, even to the felicitous degree where all disturbing doubt is fully eradicated. Vaginal-secretion sterility to the contrary, it is a well-known fact that more cases of skin trouble are traceable to the non-professional than to the professional, caused by this professional lack of vaginal hygiene.

(To be continued.)

Therapeutics.

Angina Pectoris Gravior.

Sir R. Douglas Powell discusses the treatment of this disease in the seventh volume of Thomas Clifford Allbutt's "System of Medicine," as follows: "Taking first the anginal paroxysm, there are certain prominent symptoms that call urgently for relief, if relief be possible, namely: 1, pain; 2, arterial spasm if present; 3, stenocardia and cardiac muscle failure; 4, shock and air hunger.

"Pain is almost always due to one or both of two conditions, namely, distention or muscular cramp of the ventricle. When first called to a patient in the midst of a paroxysm there is no time for careful examination, even did the condition of the patient permit of it. A tightened, thready pulse, with obviously laboring or it may be paralyzed heart, urges upon us the immediate use of the vascular antispasmodics, nitrite of amyl or nitroglycerin. Five to twenty minims of nitrite of amyl may be inhaled, or one to five minims of a 1 per cent. solution of trinitrin given. If there be violent or forcible heart action, stimulants are better avoided; but if there be flaccid distention, a draught of aromatic ammonia, soda, cardamom, and chloric ether may be given with the amyl inhalation or the nitroglycerin drops; if such means be not to hand, some very hot water with a little peppermint essence or brandy may be sipped slowly.

"In cases where there is marked heart failure, ether by preference, or brandy, in doses of 20 drops to 5i., in which one to two minims of trinitrin (1 per cent. solution) may be dissolved, should be injected hypodermically. When the pain is not relieved by this treatment, arterial spasm having thus been eliminated as its cause, the use of subcutaneous morphia is in-

indicated; due care being exercised with regard to the dose in view of the possible presence of kidney disease; if the factor be excluded, the degree of pain would regulate the dose, and the combination of atropin would be useful as a heart stimulant.

"The free use of oxygen inhalation is of very great value in all cases in which cardiac failure is a marked feature. The remedy has a double value in satisfying and relieving the air hunger—due to impaired circulation through the lungs—which is often so marked a feature; and in securing the circulation through the usually constricted coronary vessels of overoxygenated blood, which stimulates nutritive changes in the muscle and secures the removal of effete and half-changed material which embarrasses its function. In administering the oxygen, however, all personal co-operation on the part of the patient must be avoided; the naso-oral muzzle must never be used, but the gas must be directed over the mouth and nostrils by means of a glass funnel attached to the tubing, held a few inches away, so as to leave the patient to breathe a highly oxygenated air at his case. Oxygen inhalation is particularly indicated in those cases in which morphia is found necessary; and, when the paroxysm is over and sleep induced, the gas should be allowed from time to time to fortify the air immediately about the patient's mouth and nose. It is best to let the patient choose his position for himself, and to adopt that which is most comfortable and helpful to him. When the heart is large, wanting in power, and embarrassed in action by fatty depositions about its surface and fibers, and is laboring against a high arterial resistance which is prone to acute increase, the line of treatment is a restricted but fairly nitrogenous dietary in three regular moderate meals; root vegetables, sweets and starchy foods and all sweet wines and beers being avoided. Fluid should be taken very sparingly at meal times, and supplemented by a draught, preferably of hot water, taken between meals or shortly after food, and again either at bedtime or in the early morning, with a view to the excretion of effete materials.

"Regulated open-air exercise is of the utmost importance—beginning with regulated level walks, proceeding to gentle inclines, and so on, but never overstepping the limits of cardiac power. The most important drug treatment of these cases consists in the judicious administration of mild mercurial laxative and saline aperients to reduce arterial blood-pressure; potassium iodid is also sometimes valuable to this end. It is in this stage of the disease that Professor Bradbury advises the use of erythrol tetranitrate, which he finds to exercise a more persistent influence on the blood-pressure than other preparations of the kind. In addition, strychnia and acid tonics, taken once or twice a day only, are sometimes of value.

In cases of valvular disease of the heart appropriate remedies must be employed. When digitalis is employed it is often advantageous to combine with it small doses of nitroglycerin (1/200 to 1/100 gr.), or of erythrol tetranitrate, to slacken the arterial resistance.

"Arsenic is the most appropriate drug in these cases—coronary disease and consequent secondary nutritional changes in the heart—and oxygen inhalations from time to time, and especially in the night, are very valuable in those where respiration becomes shallow and inclined to the Cheyne-Stokes type during sleep. In the latter case strychnia is the most valuable cardiac tonic. Small doses of digitalis or strophanthus are indicated when the cardiac power is much reduced and its rhythm irregular; caffeine is also of great value, especially when the urinary secretion is scanty. The liver function must be stimulated from time to time by mercurial laxative. Let it be said in fine, that he who would treat angina pectoris in its multiform degrees with all the success that can be looked for must take the case in hand on broad lines in accordance with the well-defined principles of medicine, pursuing such lines into such detail as may be appropriate to each case."

Water Treatment of Gastro-Intestinal Disturbances.

Marfan advocates an exclusive diet of water for infants with diarrhea or other gastro-intestinal disturbances, the amount corresponding to the usual amount of milk ingested. (See *JOURNAL*, xxxi, p. 186.) A number of our Southern and European confrères have found this treatment extremely effective and a communication in *El Progreso Medico*, for August describes cases of diarrhea during the war in Cuba cured in three to five days with nothing but water taken freely, boiled and cooled to the temperature of the room.

Epilepsy.

- R. Lithii bromidi
Potassii bromidi
Sodii bromidi
Caleii bromidi, aa.
Syrupi aurantii corticis.
Aqua, q. s. ad.
- M. Sig. Teaspoonful in water after meals to prevent recurrence of convulsive seizures.

EPILEPSY WITH WEAK HEART.

- R. Potassii bromidi.
Syrupi acaciae.
Infusi adonis vernalis, q. s. ad.
- M. Sig. Tablespoonful in water after meals in epilepsy with weak heart.

EPILEPSY WITH VASOMOTOR RELAXATION.

- R. Potassii bromidi.
Tinct. belladonnae, fol.
Syrupi
Aque q. s. ad.
- M. Sig. Teaspoonful in water after meals in epileptic subjects with vasomotor relaxation.

Leucorrhœa.

- R. Hydrastinae hydrochloratis.
Zinci boratis.
Extracti belladonnae.
Boroglycerini.
- M. Ft. suppositoria, No. xii. Sig. Introduce suppository into vagina at bedtime after employing cleansing douche.
- R. Sodii boratis.
Sodii bicarbonatis.
Potassii chloratis.
- M. Sig. Two tablespoonfuls in two quarts of water as vaginal douche twice daily, useful as a cleansing agent in leucorrhœa with acid discharge.
- R. Extracti belladonnae.
Acidi tannici.
Boroglycerini.
- M. Ft. suppositoria No. vi. Sig. One by vagina each night after douche, useful in subacute and chronic cases with profuse discharge.

For Catarrhal Affections Following Measles and Whooping Cough.

Hock advises the employment of creosote, prescribing as follows:

- R. Creosoti
Saccharii
Olei morrhue.
- Ft. emulso. Sig. From 2 teaspoonfuls to 3 tablespoonfuls a day.

Antipyrin in Dysentery.

Ardin-Delatt has employed antipyrin in the dose of seventy-five grains to eight ounces of water as a rectal injection in dysentery, given three times a day and retained for fifteen minutes. He claims that the relief from pain and tenesmus is immediate, that the number of stools is decreased, and that convalescence is speedily established.—*Therap. Gaz.*

Alcohol in Puerperal Endometritis.

In eighty cases after laborious delivery or indications of septic infection of the uterus, F. Ahlfeld injected a 50 per cent. solution of alcohol into the uterus, with promptly favorable results; the fever vanished after one or two injections and serious uterine affections were prevented.—*Semaine Med.*

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Journal of Insanity, July.

- 1.—Some of the Problems of the Alienist. Frederick Peterson.
- 2.—Legal vs. Scientific Test of Insanity in Criminal Cases. Carlos F. MacDonald.
- 3.—Care of Insane in Farm Dwellings. G. Alder Blumer.
- 4.—*Nature and Principles of Psychology. Boris Sidis.
- 5.—Our Work and its Limitations. Edward C. Runge.
- 6.—*The Puerperal Insanities. H. A. Tomlinson.
- 7.—*The Role of Wound Infection as a Factor in the Causation of Insanity. A. T. Hobbs.
- 8.—The Desirability of Close Connection Between the Psychopathic Laboratories and Hospitals for the Acute Insane. Samuel B. Lyon.
- 9.—Some Difficulties in the Retraction Theory. W. L. Worcester.
- 10.—Treatment of Sick and Insane in Persia. James P. Cochran.
- 11.—Progress in Clinical Study of Psychiatry. Edward Cowles.
- 12.—Clinical Cases. IV. Pseudo-Dementia Paralytica Uremica. Henry J. Berkley.

Annals of Surgery, September.

- 13.—Gastroplication of the Dilated Stomach. W. H. Horrocks.
- 14.—Intestinal Treatment of Tuberculous Peritonitis. Henry T. Byford.
- 15.—*Interscapulo-Thoracic Amputation. Robert G. LeConte.
- 16.—*Report of Case of Resection of the Liver for Removal of a Neoplasm; with Table of Seventy-six Cases of Resection of the Liver for Hepatic Tumors. W. W. Keen.
- 17.—*Treatment of Neoplasms of the Liver. James E. Thompson.
- 18.—*Results and Methods of Treatment of Compound Fractures of the J. Hood Wright Memorial Hospital. William G. LeBoutillier.
- 19.—Sarcoma of the Kidney in an Infant; Recovery after Nephrectomy. Robert Abbe.
- 20.—Splenectomy for Floating Spleen, with Twisted Pedicle. Isaac Scott Stone.

Toledo Medical and Surgical Reporter, September.

- 21.—*Surgical Cases of Bladder and Urethra. W. H. Fisher.
- 22.—Eulexine in the Treatment of Diabetes. Joseph D. Ely.
- 23.—*Treatment of Carbuncles. Milton P. Creel.
- 24.—Treatment of Chronic and Acute Diseases of the Respiratory Passages with Guaiacol Carbonate and Cresosol. Fritz Höltscher.
- Journal of Cutaneous and Genito-Urinary Diseases, September.
- 25.—*Two Epidemics of Alopecia Areata in an Asylum for Girls. John T. Bowen.

Medical Fortnightly, September 1.

- 26.—Psychic Elements in Disease and Suggestion. Arthur Macdonald.
- 27.—Physiology. A. L. Benedict.
- 28.—Vertigo. Philip Ziemer.
- Medical Mirror, September.
- 29.—Ununited Fracture in Childhood. Edward Owen.
- 30.—*Athletics in Their Relation to the Male Genito-Urinary Organs. Frank Lydston.
- 31.—Faith, Fraud and Suggestion in Therapeutics. T. F. Lockwood.

Medicine, September.

- 32.—*Albuminuria. A. L. Benedict.
- 33.—*Movable Kidney. A. E. Halsted.
- 34.—*A Case of Fibrous Peritonitis in a Child Two and One-Half Years Old. Charles G. Cumston and Robert W. Hastings.
- 35.—*Treatment of Tapeworm by the Use of Morphin Injected into the Protruding Part of the Parasite. J. W. Kime.
- 36.—*A Newer Pathology of Epilepsy. Daniel R. Brower.
- 37.—*Some of the Common Reflex Symptoms from Diseases of the Rectum. I. L. Watkins.

Brooklyn Medical Journal, September.

- 38.—*Prevention and Modern Treatment of Tuberculosis. G. W. Brush.
- 39.—*The Metric System in Prescriptions. E. H. Bartley.
- 40.—Ovarian Cyst with Torsion of the Pedicle. F. W. Wunderlich.

Illinois Medical Journal, September.

- 41.—*Surgery of the Puerperium. Denslow Lewis.
- 42.—*Puerperal Surgery. Bertha Van Hoesen.
- 43.—*Manifestations of Malaria. Chas. Dewey Center.
- 44.—*Atypic Malaria in Children; with a Case in Point. Rosa Engelmann.
- 45.—*Treatment of Chronic Malaria. John B. Maxwell.

Kansas City Medical Index-Lancet, September.

- 46.—Some Thoughts on Various Forms of Infection. M. P. Overholser.
- 47.—*Healing Frauds and Superstitions. Rev. C. M. Bishop.
- 48.—*A Woman with a Tumor and How They Parted. Herman E. Pearce.
- 49.—Treatment of Broken and Deformed Nasal Septa. Hal Foster.
- 50.—Chronic Morphism. A. J. Pressey.
- 51.—Bovine as a Local Application for Ulcers. B. C. Hyde.
- 52.—Review of Recent Advances in our Knowledge of the Anatomy and Physiology of the Nervous System. John Puntan.

Medical Standard, September.

- 53.—*The Family Physician and the Middle Ear. E. E. Clark.
- 54.—*Diagnosis and Clinical Course of Puerperal Eclampsia. Frank B. Earle.
- 55.—*The Technic of Local Anesthesia. Aime Paul Heineke.
- 56.—*Albuminuria—Its Clinical Significance. H. P. Wilson.
- 57.—*Suprarenal Extract in Ophthalmic, Aural and Allied Surgery. A. G. Aldrich.
- 58.—*A New Adjustable Abdominal Electrode. B. Y. Boyd.
- 59.—*Sulphocarbolates in Typhoid Fever. W. F. Church.
- 60.—*The Therapeutic Action of High Frequency Electric Currents in Arthritis. G. Apostoli.

Pediatrics (N. Y.), September 1.

- 61.—*Malaria in Children. Dr. Moncorvo.
- 62.—*Congenital Club-Foot—Equino-Varus. Henry Ling Taylor.
- 63.—*Morbus Cereulius. C. C. Mages.
- 64.—*Belladonna in the Bronchopneumonias of Children. D. A. Hodghead.

Journal of Scientific Medicine, August.

- 65.—The Worthlessness of Beef Extracts. John Madden.
- 66.—Report of a Case of Eclampsia. Victor F. Mueller.
- 67.—Alleged Dangers of Peroxid of Hydrogen in Surgery. Gustavus Blech.
- 68.—First Warnings of Glaucoma. W. H. Poole.

Memphis Medical Monthly, September.

- 69.—*Material Equivalents of Physical Action. Frank W. Vance.
- 70.—*Incipient Pulmonary Tuberculosis, with Special Reference to Treatment. G. W. Penn.
- 71.—*Cerebrospinal Meningitis vs. Fulminant Malaria—A Case in Point. Wm. Britt Burns.
- 72.—Report of Surgical Cases—Appendicitis with Hematoma of the Ovary; Suprapubic Lithotomy in a Child. Wm. D. Sumpter.
- 73.—*Albuminuria as a Diagnostic Symptom, with Report of Cases. Wm. P. Ball.
- 74.—Something Rare in Twins. John Tackett.
- 75.—A Case of Malarial Hematuria. J. W. McGeaha.

Southern Practitioner, September.

- 76.—Suggestive Therapeutics. J. T. McColgan.
- 77.—Mammary Abscess—Antepartum. J. L. Barton.

St. Paul Medical Journal, September.

- 78.—*Tuberculin as a Diagnostic Agent in Tuberculosis. George D. Head.
- 79.—*Drainage of the Bladder Through a Catheter in the Urethra. A. T. Cabot.
- 80.—*What Evidence Have we in Support of the Theory that Epilepsy is Due to Autointoxication? T. B. Fletcher.
- 81.—*Membranous Conjunctivitis. Thomas McDavitt.

New Orleans Medical and Surgical Journal, September.

- 82.—*Importance of Early Recognition and Treatment of Catarrhal Discharges. W. Schepperell.
- 83.—*Food Injunctives and Clinical Preservatives. Quitman Kolnke.
- 84.—*Lessons of Yellow Fever in New Orleans in 1879. Edmond Sonchon.
- 85.—*Calentura vs. Yellow Fever. C. H. Tebant, Jr.

New York Medical Journal, September 16.

- 86.—*Atypical Forms of Pneumonia. A Clinical Study. E. Palier.
- 87.—*Hysterical Blindness. Arthur T. Muzzy.
- 88.—*Seasickness. J. Carlisle De Vries.
- 89.—*Epiphyseal Separation of the Ends of the Humerus. Michael J. Collins.
- 90.—Clinical Report of an Epidemic of Infantile Diarrhea. Isaac J. Jones.
- 91.—*Epileptic Eye Strain. C. M. Capp.
- 92.—*Glaucoma Following Supraorbital Neuralgia Malarial Origin. Louis A. Bize.

Medical News (N. Y.), September 16.

- 93.—*Roentgen-Ray Examinations in Incipient Pulmonary Tuberculosis. Francis H. Williams.
- 94.—*Climate and Renal Diseases. J. B. Walker.
- 95.—*New Operation for Inguinal Hernia. Carl Beck.
- 96.—*Concerning Colorado. Samuel A. Fisk.
- 97.—*Occurrence of Cheyne-Stokes Respiration During Sleep, a Diagnostic Symptom in the Early Stages of Interstitial Nephritis. Charles O. Donovan.
- 98.—*Esophagotomy for Extraction of an Impacted Tooth-plate of Six Years and Four Months' Standing. G. G. Eitel.

Medical Record (N. Y.), September 16.

- 99.—*Floating Liver and its Clinical Significance. Max Einhorn.
- 100.—*Practical Treatment of Typhoid Fever. Basil M. Taylor.
- 101.—*Facts and Fallacies in Urinalysis. Theodore W. Schaefer.
- 102.—*Demonstration of Two Cases of Extrophy of the Bladder, with Suggestions for a New Operation. J. H. Brauth.

Boston Medical and Surgical Journal, September 14.

- 103.—*Intussusception. John C. Munro.
- 104.—*Growth and Extension of Carcinoma. W. T. Councilman.
- 105.—*Two Cases of Injury of the Cord Resulting from Fracture of the Spine. John Jenks Thomas.
- 106.—*Spine and Sociological Conditions. Arthur Macdonald.
- 107.—*An External Application in Scarlet Fever to Shorten the Period of Desquamation and Diminish the Danger From it. Francis H. Williams.

Maryland Medical Journal, September 16.

- 108.—*An Emergency Obstetric Case. Hugh H. Young.
- 109.—*A Visit to the Loomis Sanitarium. William B. Canfield.

Cincinnati Lancet-Clinic, September 16.

- 110.—*Some Observations on the Rocky Mountain Region. C. B. VanZant.
- 111.—*Suicide. H. V. Sweringen.
- 112.—*Ophthalmic Memoranda. David DeBeek.

Philadelphia Medical Journal, September 16.

- 113.—Cases of Fracture of the Skull Followed by Recovery. Dudley P. Allen.
- 114.—*Contagious Infections. Are They Synonymous? T. A. Grigg.
- 115.—*Nervous Hemorrhages: A Contribution to their Study. S. W. S. Williams.
- 116.—*Malnutrition in the Female Genito-Urinary System. L. Grant Baldwin.
- 117.—*Phenomena and Mechanism of Inheritance. Edwin G. Conklin.
- 118.—*Infantile Gonorrhoea; Hiccough; Earwax. W. Blair Stewart.

AMERICAN.

- 1.—See JOURNAL, June, 10, p. 1325.
- 2.—*Ibid.*, p. 1325.
3. **Care of the Insane at Farm Dwellings.**—Blumer reports his experience with the treatment of the insane in detached farm-houses at the Utica Asylum, and advocates the extension of this method.
4. **Psychology.**—The relation of psychology to the medical profession, especially as regards the field of hypnotism and other psychic symptoms, is treated by Dr. Sidis. He criticises the neurologist for neglecting this, and claims that the alienists have taken a step in advance in this regard.
6. **Puerperal Insanity.**—Tomlinson analyzes some 60 cases of puerperal insanity as regards their causation, symptoms, etc., the most important consideration, of course, being the prognosis, and he concludes as follows: The history of the cases recorded in this paper, and of one hundred and fifty others, from among which they were selected, would indicate that the prognosis in any given case of insanity connected with maternity was dependent upon the heredity of the patient; and further that those cases having a heredity of insanity alone are most likely to recover; while those having a heredity of consumption, alcoholism, syphilis or cancer, are the most certain to be the victims of progressive degenerative changes. Or to express the same conclusions in another way: The children of the insane are unstable, but the children of those suffering from somatic disease which seriously impairs vitality are defective.
7. **Wound Infection in Insanity.**—The subject of Hobbs' paper is the same as that of some other recent communications by him—the insanity connected with gynecologic conditions. He mentions, however, insanity from erysipelas infection, but the main part of his paper is based on 98 alleged puerperal cases admitted into the London Asylum since the year 1870. Twenty-three of these he has personally examined, and in 22 of them he found pelvic lesions. In 21 of these surgical interference was followed by recovery in 8 cases and improvement in 4. In the past four and a half years they have treated in the London institution 187 women and found lesions in 163. Eighty had inflammatory lesions of the pelvic organs that he thinks can be best credited to sepsis at the time of the puerperium. The surgical treatment of these 80 produced physical recovery in nearly all, mental recovery in 45 per cent., and mental improvement in 25 per cent. He concludes by emphasizing the importance of care on the part of the obstetrician in protecting his patients from septic infection, and of the necessity of removing pelvic lesions in the insane.
9. **Difficulties in the Retraction Theory.**—Worcester notices certain difficulties in the acceptance of the retraction theory of the terminal filaments of the neuraxones. The first is the rapidity of the movement that is required by the quickness of the mental action, which is not parallel with any physiologic condition. Next, the power of selection attributed to the nerve-cells seems to him hardly credible. He also notices a phenomenon which it seems to him impossible to explain by this hypothesis. When a patient affected with hysterical amblyopia is made to look into the apparatus of Flees for the detection of simulated blindness, in which, by an arrangement of mirrors, only one object can be seen by each eye, and that seen by the right appears to the left of that seen by the left eye, she sees only that which is visible to the amblyopic eye. Thus, if the right eye is the one affected, she will see only the object apparently situated to the left, which is, in fact, invisible to the left eye. It will be noted that, in such an experiment, the subject does not know whether she should see one object or more, or what the relative positions of the objects seen should be. On the supposition that there is an actual interruption of connections, the patient should see only one object, namely, that which is visible to the left eye, and, having nothing with which to compare its position, would have no reason to suppose that she saw it with the other eye. Why, under such circumstances, should there be a reversal of the connections and interruptions previously existing?
12. **Pseudo-Dementia Paralytica Uremica.**—Berkley reports a case which he considers as distinct from parietic dementia but due to uremic intoxication. The case is very elaborately reported with pathologic findings.

15. **Intrascapulo-Thoracic Amputation.**—The author of this paper finds ten different methods have been used for dealing with the hemorrhage in intrascapulo-thoracic amputation, and the last, disarticulation of the sternal end of the clavicle with ligation of the arteries and the veins, is the one adopted in the case he here reports. The operation was done for sarcoma involving the shoulder-joint. The method consisted in: 1. Incision from the sternal end of the clavicle along this bone to about its middle and curved downward to the anterior axillary fold. The skin and fascia are dissected up, exposing well the inner two-thirds of the clavicle. 2. Disarticulate the clavicle by severing the sternal attachment and the rhomboid ligament, cutting the attachment of the sternomastoid muscle close to the bone and separating the clavicular portion of the pectoralis major with the finger from the costal portion of the muscle of the anterior axillary fold. 3. The clavicle is now pulled outward and upward, and if the subclavian muscle does not readily strip off, its attachment to the first rib is divided. This exposes the pectoralis minor and it is divided and the coracoid portion reflected upward with the clavicle, thus exposing the axilla and the vessels. 4. The sheath of vessels is opened and the vein dissected away from the underlying artery. Two ligatures are tied around the artery. The arm is then held up to empty it of blood, while two ligatures are passed around the vein but not tied until the arm is blanched. This renders the use of an Esmarch bandage unnecessary. Unless the cephalic vein has joined the axillary below this ligature, a separate tying of this vessel is required. 5. The vessels are now severed, together with the brachial plexus of nerves and the costal portion of the pectoralis major, completing the division of the anterior attachment of the arm. 6. A posterior incision is made from some point on the anterior one, as near the tumor as advisable, directly downward and backward to the inferior angle of the scapula, and up again to the posterior axillary fold. The skin and superficial fascia are dissected up for a short distance—half an inch to an inch. 7. The trapezius is now severed and the transversalis colli or posterior scapular artery is secured. The omohyoid muscle is cut and the suprascapular artery is secured, and the muscles attached to the inner border of the scapula are rapidly divided close to the bone; then the serratus magnus and latissimus dorsi are cut, the latter at the posterior axillary fold. The arm is then held to the body by the skin of the axilla alone. If there is sufficient flap to cover the wound, the anterior and posterior incisions are joined through the axilla, but if more skin is needed, a flap may be raised from the under surface of the arm. The wound is then closed with suitable provisions for drainage. The advantages of this operation are summed up as follows: *a.* It gives the widest and fullest possible exposure of the vessels, and decreases the accidents of ligation to a minimum. *b.* The disarticulation of the clavicle is simpler, quicker and easier than the resection of the bone, and the danger of wounding important vessels is less, because these structures are well protected by the sternothyroid muscles. *c.* The elevation of the arm, after securing the artery and before the vein is tied, makes a practically bloodless amputation. *d.* The suprascapular and posterior scapular arteries—the only vessels that can bleed—are easily picked up before being cut. *e.* In malignant growths, where the outer end of the clavicle is involved, there is less risk of a return if the entire bone with its periosteum is removed. *f.* It removes everything in one piece, a more surgical procedure when dealt with malignant growths.

16. **Resection of the Liver.**—After referring to a former paper, Keen reports a third case of resection of the liver for a large tumor. The operation was done entirely with a Paquin cautery and the hemorrhage was comparatively slight. The packing was removed in 48 hours. There was no hemorrhage, but an escape of bile from the fourth to the twelfth day. In spite of this, if he should hereafter have to deal with a small charred surface after removing a hepatic tumor, Keen says that he will be sorely tempted to test the absorbent powers of the peritoneum by immediate closure of the wound without drainage. He analyzes the literature and appends a table of 17 cases, including the present one, making a total of 76 which he has collected. A pathologic report by Drs. Coplin and Tinker is appended. The tumor appears to have been a cylindrical cell cancer.

17. **Neoplasm of the Liver.**—Thompson reports a case of removal of a hepatic gumma and analyzes the literature on the treatment of hepatic neoplasms.

18. **Compound Fractures.**—LeBoutillier's paper is a critical analysis of 55 cases of compound fracture of the long bones treated at the J. Hood Wright Memorial Hospital during the three years ending Jan. 1, 1899. A number of the cases are reported in brief detail. He believes that the treatment most likely to give the best results is one with the least possible operative interference. Free incisions, immediate excision of tissues badly damaged, whether by violence or by soiling, drainage of pockets without packing of the wound, the removal of as little as possible of the fragmented bone, the suture of bone or muscle in clean wounds only and with the amplest drainage, may in appropriate cases supplement the most thorough and painstaking mechanical cleansing of the wound. He has not seen medicated solutions or dressings at this time followed by any better results than the use of sterile gauze. For irrigating he believes a physiologic salt solution to be as efficient as any other, and less liable to do further harm to bruised or partly devitalized tissue. What bacteria remain in the wound after thorough mechanical cleansing can not be reached by antiseptic solutions or dressings, for they are probably imbedded in tissues and inaccessible to germicides, without damaging viable tissue. The limb should be put in proper apparatus; that one being the best to use in the particular case, with which the operator is most familiar in simple fractures. During the next few hours and days careful watch for the occurrence of symptoms of inflammation should be kept up, and at their advent there should be no delay in inspecting the wound and taking what further measures the individual case may require. Where free incisions are made, at the primary dressing, the circulation of the wound is less embarrassed by the swelling so apt to occur as a result of traumatism, and the tissues are better able to protect themselves from the harmful influences of bacterial multiplication, as they are better nourished. Absorption of toxic products is also less likely to occur, and give rise to severe constitutional symptoms.

21. See abstract in *JOURNAL*, Sept. 9, p. 657.

23.—See *JOURNAL*, May 6, p. 101, p. 991.

25. **Alopecia Areata.**—Bowen describes two epidemics of alopecia areata that occurred in an asylum for girls in the city of Boston. In the first it seemed to start in one girl, but four months later it was found that 63 of the 69 children in the institution were more or less affected. Two months later the areas began to fill in, and at the end of six months a few patches only could be found. The girl in whom the affection was first observed left the institution and was away three years. It was not certainly known whether she perfectly recovered and it is not at all unlikely that some small areas of baldness existed. Six years after the epidemic she re-entered the school at the age of 17. There had been no cases during her absence. A month or six weeks later patches were observed on the head of one of the children and four or five months after her return 26 of the 45 children were found to have spots of baldness of the same dotted and angular character as those of the first epidemic. He has not seen reported any similar experience in this country, though there has been observed in France.

30. **Athletics in Their Relation to Genito-Urinary Organs.**—Several matters of importance in regard to athletics that are not altogether noticed as such as they should be are here referred to by Lydston. He believes that athletic exercises within physiologic limits are perfectly healthy and that they have frequently good effect on the sexual irritation in youth. As regards strain or friction on the groins, genitals and perineum, it is well known that they may set up irritation, and in this connection he speaks of bicycling, which is injurious in case of existing troubles of the urethra, prostate and bladder. He does not, however, believe that it can set them up in an originally healthy individual. As regards accidents, the professional athletes are safer than the amateur. In conclusion he calls attention to the possibility of deranging metabolism by training. In the case of uric acid diathesis, physical exercise may be necessary. When the systematic exercise is discontinued, however, the body can not care for the proteids, and a lithemic crisis may be induced. He can assure anyone who

contemplates entering active training that he will thereby acquire a physiologic habit that may be embarrassing in later life.

32. **Albumosuria.**—Benedict discusses the subject of albumosuria and its possible significance. Its test is so simple that it should be a matter of routine in urine examinations. His method is to float the suspected urine over the alkaline copper solution used in testing for sugar. On warming carefully a lilac band develops in the presence of albumose or pepton. He reports six cases, the first due to cystic trouble and the second probably; the third connected with a remote pathogenic process, and in the fourth a possible relation with the liver and abdominal viscera, but the diagnosis was obscure. In the fifth case the albumose was essentially renal, and in the last there was a tumor of the liver. He asks for criticism and suggestions on this subject in regard to which our knowledge is so imperfect.

33. **Movable Kidney.**—Halstead's paper is almost monographic on the subject of movable kidney and not easy to abstract.

34. **Fibrinous Peritonitis in a Child.**—Cumston and Hastings report a case of tubercular fibrinous peritonitis in a child two and one half years of age, which was operated upon with success except that a troublesome fistula was left. A second operation to close the fistula was attempted, but without good results, a second fistula being formed. The child survived the operation only a few weeks, dying from exhaustion. The case is of interest in the uncharacteristic development of the affection, the extent of the lesions and as showing how much the abdominal cavity of a child will stand in the way of operation.

35.—See *JOURNAL*, June 3, p. 1263.

36.—See *JOURNAL*, May 27, p. 1172.

37. **Reflex Symptoms from Rectal Disease.**—Watkins calls attention to the puzzling reflexes occasionally observed from ulceration of the rectum and which lead to serious gynecologic mistakes. He reports 3 cases and states that his object is only to put the general practitioner on his guard against advising ovariectomy, etc., in such cases.

38. **Prevention and Treatment of Tuberculosis.**—Brush's paper treats at length of the cause of consumption and methods of its prevention. Admitting it to be one of the most fatal diseases, and yet one that has been found to be curable in its early stages, the chief points to be borne in mind are: 1. That it is an infectious disease transmissible from person to person through the respiratory and digestive tracts or through wounds of the skin and mucous membranes. While all who come in contact with the disease may not develop it, no one can determine when the system is in a condition favorable to do so. It is reasonable, therefore, to apply all necessary precaution in any case. 2. Inasmuch as it can be conveyed through infected food, the present law for checking the disease in cattle should be enforced. It appears too that food displayed upon street stands is also a source of danger as not being protected from street dust, and some regulation requiring better security in this respect should be demanded. It having been shown that wherever intelligent measures of prevention have been adopted, the disease has decreased, it will be criminal for the state to neglect its duty in this regard. He also speaks of the necessity of prohibiting expectorations in street and public conveyances, and also of the danger of promiscuous kissing.

39. **The Metric System in Prescriptions.**—Bartley advocates the more universal use of the metric system in doctor's prescriptions. Calculation of doses has been the principal deterrent, and he suggests a simple rule to render this less troublesome. It is as follows: A dram of the two-ounce mixture will contain as many grains or minims of any ingredient as there are grams or c.c. of that ingredient in the whole two ounces. By keeping this rule in mind the calculation of doses becomes easy and simple.

41.—See *JOURNAL*, May 27, p. 1173.

42.—*Ibid.*, p. 1173.

43.—*Ibid.*, p. 1172.

44. **Atypic Malaria in Children.**—The irregular course of malaria in children is noticed by Engelmann, who reports a case that first suggested typhoid infection, but showed malarial origin after blood examination. The case was of interest from its unknown mode of infection; the irregular and masked course of the disease; the peculiar type of the protozoön; the

disappearing leucocytosis, and the existence of a limited area of lung consolidation with low temperature curve, pulse and respiratory ratio. The patient did well under quinin treatment for chronic malaria.

45. **Treatment of Chronic Malaria.**—Maxwell describes his method of treating malaria cases in special malaria regions, which is, for an adult, as follows:

- R. Hydrarg. chlor. mite.
 Sodii bicarb., $\bar{a}\bar{a}$gts. x
 M. S. At bedtime.
 R. Quinin sulph.....gts. xx
 Fiat capsula No. iv.

Sig. Two hours apart, the last dose 12 hours before chill time.

- Then
 R. Elix. quin. strych. et ferri..... \bar{v} iv

Sig. Spoonful three times daily. But it does not always do in practice. A certain per cent. of the patients will have chills while taking the medicine right along.

Finally he stumbled upon this, to be used as a tonic after the calomel and quinin had been given as above, and to his surprise and gratification he had no relapses.

- R. Quinin sulph..... \bar{v} i
 Acidi nit. dil..... \bar{v} ixiiss
 Spts. frumenti..... \bar{v} iv

M. Sig. Spoonful just before eating, three times daily.

He thinks the prescription given above containing the spirits is the best thing he has ever tried and that the patient can be assured in the most dogmatic manner that this medicine will cure him.

47. **Healing Frauds and Superstition.**—This article is of interest as being the publication of a sermon in a medical journal. The preacher's views are such as any physician can indorse, and it appears that in the locality where the sermon was delivered the ministers are generally up in arms against certain frauds which make their headquarters there.

53. **The Family Physician and the Middle Ear.**—The author of this paper writes to call attention to the great necessity of the general practitioner paying attention to ear troubles in their early stages, as in the treatment of these cases prevention is better than cure. In the beginning of tubal catarrh, great relief will result from inflation of the middle ear, and he describes the method. Many times a child suffering from earache can be immediately relieved by taking out the Politzer bag and inflating the middle ear, instead of dropping oils, extracts, etc., into the outer auditory canal.

55. **Local Anesthesia.**—Heiueck's paper gives the technic of full anesthesia in full detail, stated in such a manner that nearly the whole article would be required to be given in an abstract. The reader is referred to the original.

56. **Albuminuria.**—Wilson sums up his paper as follows: 1. We should know our tests and their fallacies so as to detect a true renal albuminuria. 2. If we have a true renal albuminuria we should by repeated microscopic examination of the sediment, well concentrated by gravity and the centrifuge, satisfy our minds that casts are or are not present. It may take several hours to attain this result. 3. True renal albuminurias, functional in nature, must be looked upon as cases of increased susceptibility to nephritis, though many of them are comparatively innocent. It would seem from the foregoing that with many of these cases it is largely a matter of degrees of the same condition and that many cases of incipient nephritis cure up under proper conditions, just as incipient tuberculosis frequently is overcome by a natural tendency toward recovery.

57. **Suprarenal Extract.**—The writer gives his experience with suprarenal extract, of the value of which he was at first skeptical. He usually precedes it with cocaine, though he can not affirm that it counteracts the poisonous effect of the latter as some have stated. He now never operates on pterygii without using it, and he finds it of great value in other minor operations, such as tenotomy. In the ear it has but a limited effect, but in all operations within the nasal cavity it is, next to cocaine, most valuable. In the throat the same conditions exist as in the nose only in a lessened degree. It aids in galvanocautery operations by enhancing the effect of cocaine, and the same may be said of it in tonsillotomy. He has not ob-

served that it materially lessens the hemorrhage. Aldrich sums up his experience with it as follows: 1. The extract of suprarenal capsule is one of the most powerful of vasoconstrictors, and is, in addition thereto, an erectile tissue contractor. 2. As such it allows a deeper and more perfect anesthetic action from the local use of cocaine, enabling the surgeon to have highly anesthetized surfaces and tissue for operation. 3. The ischemia from such action is so profound as to act as a prolonged hemostatic, giving thereby a clear field for operation, and preventing secondary hemorrhage. 4. Its action can be depended upon, in every case. It is in no way deleterious to tissues operated upon, nor does it interfere with aseptic healing.

59. **Sulphocarbolates in Typhoid.**—Remarking first that intestinal medication in typhoid fever has of late years been going apparently out of date to some extent, Church states that resort to drugs must be had in many cases where all the appliances and trained nurses are not at hand. It is often imperative that something must be given and he believes that we must do something to prevent a toxemia not directly due to the typhoid bacillus, which takes place if the bowels are not treated with antiseptics and kept in proper activity. He, himself, would use the sulphocarbolates were he the subject of the disease. There is nothing difficult in their administration. In cases with constipation he would give in the beginning small doses of calomel, frequently repeated until moderate catharsis has resulted, to be followed by 10 grains of sulphocarbolate of sodium every 2 to 4 hours, in the average cases. In ordinary cases with diarrhea the zinc salt is preferable on account of its strong astringency, and he speaks especially of the value of the administration of these drugs in reducing the offensiveness of the diarrhea. In diarrhea generally, especially those due to fermentation, in enteritis and in dysentery or any condition where intestinal antiseptics are required, these drugs are extremely valuable.

61. **Malaria in Children.**—Moncorvo continues his article on infantile malaria, noticing the bowel symptoms, the associated secondary infections, endocarditis, pericarditis, the abortive forms with neuralgic symptoms, irregular fever, vertigo, syncope, hicough, dermatoses noticed by Boiesoco and others, abdominal swelling, rectal prolapse, etc. He remarks on the diagnosis, the differentiation from various disorders like tuberculosis, etc., and he says that any fever of irregular course without noticeable antecedents to account for it in a young child must give rise to a suspicion of paludism, especially in a country where malaria exists. As regards prognosis, the practitioner must ever be on his guard when the disease has once obtained a foothold, no matter how mild it may appear. The younger the child, the more careful should we be, and it goes without saying that the need of an early diagnosis is imperative.

63. **Morbus Ceruleus.**—The comparative infrequency of blue disease and the lack of literature on the subject appear to have been the stimulus for the present article by Mapes. In it he goes over the literature quite thoroughly, using as a text a case recently reported by Gossett. The paper, as a whole, is a useful discussion of the subject, though not original.

64. **Belladonna in Infantile Bronchopneumonia.**—Beginning with the report of a case of a child in which other remedies had failed, and improvement rapidly followed the use of belladonna with calomel, Hodghead describes his experience with this remedy, covering 25 cases, and 5 cases observed in the practice of other physicians. He claims that belladonna has just such a physiologic action as is suitable for the disease for which it is here recommended. 1. In small doses it is mildly narcotic, producing a slightly sedative influence upon the nervous system, and having a tendency to make the child less irritable, and its condition less uncomfortable. 2. It is, in small doses, a heart tonic, raising the arterial tension, and increasing the circulation by stimulating the cardiac sympathetic, and in a corresponding manner depressing the pneumogastric, the inhibitory nerve. 3. It is a respiratory stimulant, influencing in some degree the diaphragm, but more especially does it affect the accessory respiratory muscles, although its action in this regard, it must be confessed, is not yet fully understood. 4. Belladonna produces a dilation of the superficial capillaries, and in a corresponding degree, and in the same manner, relieves the congested lungs. It might also be remarked that it produces an increased secretion of urine

and of bile. 5. The most important influence, however, which the drug exerts, and the one which bears directly upon the question at hand, is to diminish secretion in the bronchial tubes and pulmonary tissues. The water-logged condition of the lungs is overcome or prevented. Its effects, in such instances, seem almost mechanical, as well as marvelous. The superabundant and dangerous secretions are diminished in quantity, and the threatened asphyxia, which becomes completed when these secretions increase so abundantly that the child is unable to rid its lungs of them, is averted. He has found it necessary to give it in quite large doses every hour, or two hours, until the desired results are obtained. Children are not very susceptible to this drug and readily bear it. In the case reported he gave it in 1 and 2 drop doses every half hour. He says that if it will prove as effective in the hands of others as it has in his, where the mortality has been reduced from 60 to 80 per cent. to less than 10 per cent. it will be as useful as antitoxin has been in diphtheria.

70. Incipient Pulmonary Tuberculosis.—Considering consumption in its beginning as a curable disease, Penn believes that dissemination of information among the public is desirable. The best results in treatment, he thinks, will be obtained in a sanatorium. He is doubtful as to the value of operative methods like those of Murphy. Out-of-door life and elevated situation are desirable. He believes egg albumin to be one of the most efficient nutrients in this disorder. As regards drugs, the best to be relied on is strychnia; it should be carried to the limit of tolerance, and creosote given for the relief of cough and fever.

71. Cerebrospinal Meningitis vs. Malaria.—Burns reports a case with the symptoms of fulminant malaria, including the development of the estivo-autumnal parasite in the blood, with also some symptoms strongly suggesting cerebrospinal meningitis, and a tough, elastic secretion in the nose containing what was believed to be meningococci. Recovery.

78. Tuberculin as a Diagnostic Agent.—After noticing the defective measures formerly in use, and giving the facts of the tuberculin reaction as best understood at the present day. Head gives the results of 487 recorded cases of tuberculin injection given for diagnostic purposes, as collected by himself from the literature and elsewhere. Of the 487 cases, 54 per cent. reacted and 46 per cent. failed. In 136 cases 83, or 61 per cent. were demonstrated as tuberculous by operative, post-mortem and bacteriologic evidence. In 83 undoubtedly tuberculous cases, nearly 5 per cent. did not react, and this failure was due in at least one case to the small doses given and to the establishment of a tolerance. The tuberculous cases which failed to react were, so far as he could ascertain, far advanced in the disease. In 12 apparently healthy individuals, 1 reacted. In 64 supposedly non-tuberculous diseases, 18 per cent. reacted. From a study of these cases, Head thinks it probable that no pathologic state reacts to tuberculin in any marked per cent., if at all, except those caused by the tubercle bacilli, and that 92 per cent. of pulmonary tuberculosis shows the reaction. In 71 per cent. of the cases of enlarged cervical glands; in 88 per cent. of the cases of acute pleurisy; in 100 per cent. of the cases of chronic pleurisy; in 91 per cent. of the cases of tuberculosis of the joints; in 100 per cent. of the cases of tubercular peritonitis; in 100 per cent. of the cases of Addison's disease, and in 100 per cent. of the cases of lupus, the reaction occurred.

79. Bladder Drainage Through the Catheter.—The conditions in which Cabot has found catheter drainage of advantage may be classed as follows: 1. Injuries of the urethra, either the result of accident or of operation, in which it is desirable to conduct the urine past the seat of injury in order that it may not by its irritant qualities interfere with the process of healing, and to prevent the absorption and toxic effects of the urine. 2. Hemorrhages in the urethra, in which the catheter assists in checking the bleeding. 3. Obstructive lesions of the urethra, which lead to inflammatory conditions of the bladder and kidneys, and in which systematic catheterization does not bring relief. The action of the catheter after an operation on the urethra or any injury to its walls is twofold. 4. It acts as a core or stem around which the urethra re-forms itself, a very desirable effect. The more important action, however, is to protect the wounded surface from con-

tact with the urine and the dangers of its absorption. In order that this shall be satisfactorily effected, it is necessary that the outflow of urine shall be constant. The catheter should never be obstructed. He points out the value of this method also in cases of hypertrophied or obstructed prostate and the quick improvement of the urine under this method. It is useful also in cases where the gradual emptying of an overdistended and partially paralyzed bladder is required. If the urine is drawn off too rapidly, hemorrhagic cystitis may follow and extend itself to the kidneys. He thinks the soft red rubber catheter is the best. If it can not be introduced or the caliber is too small and a stiffer instrument is required, he thinks the English gum elastic catheter with wire stylet the most satisfactory. One thing of the greatest importance is that it shall be properly adjusted so as to produce constant drainage.

80. Auto-Intoxication and Epilepsy.—The title of Futeher's paper, "What Evidence Have We in Support of the Theory that Epilepsy is Due to an Auto-Intoxication?" indicates its scope. It is simply a statement of the theories on this subject without a positive expression of opinion.

81. Membranous Conjunctivitis.—McDavitt reports 4 cases in one family, of membranous conjunctivitis with more or less inflammatory symptoms and weakness, without detection of the diphtheric bacillus. Two, at least, of the cases were treated with antitoxin and these appeared to be the most profoundly affected systematically.

82. Early Recognition of Catarrhal Disorders.—The necessity of early recognition of catarrhal disorders in children is emphasized by Scheppegrell. The pathologic conditions most frequently found requiring attention are the enlargement of the pharyngeal tonsils and the various forms of rhinitis, and the earlier these can be treated when treatment is necessary, the better. Of course, not every case requires treatment and it may tax the judgment of the physician to decide. The condition which presents the greatest possibility of injurious after-effects in children is purulent rhinitis. The mucus secreted is often retained in the nasal passages and by its irritation, directly and indirectly by forming a culture-ground for pathogenic germs, it causes serious injury to the normal structure of the nasal passages. Scheppegrell holds that it is frequently a forerunner of atrophic rhinitis and similar conditions. Aural affections of insidious development are often started by these conditions and serious injury to the hearing may follow. While adenoids in the nasopharynx atrophy toward adult life, they can in the meantime produce irretrievable harm. Parents should be instructed as to the importance of this matter.

83.—See JOURNAL, August 26, page 548.

84. Yellow Fever in New Orleans.—Souheon reviews the past records of yellow fever in New Orleans and especially the management of the disease in 1879. Here begins the first period, with the exception of that from 1861 to 1865, when there was practically no intercourse with yellow fever regions, in which yellow fever was not endemic every summer in the city of New Orleans. From 1880 to 1884 outside intercourse was free, but yellow fever failed to appear. He asks: "Is it not just and reasonable to say that this result was the effect of sanitation, crude and primitive though it may have been?"

85.—See JOURNAL, August 26, p. 548.

86. Atypical Forms of Pneumonia.—The types of pneumonia that sometimes occur with symptoms that baffle the diagnosis of the experienced practitioner are discussed by Pailer. He considers them under six heads, illustrating each form by detailed cases: 1. As to gastric pneumonia, in almost every case of inflammation of the lungs there is more or less disturbance of the abdominal viscera, but in some few these are so prominent as to give the impression that the main trouble is situated lower down in the abdomen. The case reported is of interest on account of complications with empyema and the severe abdominal disturbances. Both of these complications are discussed at length, and the author remarks that when in some disorders the symptoms are out of proportion to the extent of lungs involved, as in this case, empyema may be thought of, and diagnosis by the hypodermic needle is advisable. As regards the abdominal disturbances, he suggests a theory that the involvement of the pneumogastric, through reflex irritation of the medullary centers, is responsible for both abdominal disturbances and

cardiac failure in pneumonia. He thinks this a more plausible theory than the toxic one, attributing the cardiac failure to toxins acting on the cardiac nerve-centers. 2. As to cerebral pneumonia, Palier remarks that there is not much new to be said on this subject, since cerebral symptoms have been described by various authors, but one of his cases resembled tubercular meningitis so closely that it could easily have led to a false diagnosis. 3. Under "wandering pneumonia," he mentions cases in which exacerbation of symptoms occurred after a crisis and a period of desiccation, the pulmonary inflammation passing over to a new region and starting a secondary attack. 4. Under the designation, abortive pneumonia, he refers to cases lasting only a few days and terminating in recovery before full manifestations of the physical signs. In only one case has he seen a fully developed pneumonia terminate on the third day, and he rather doubts the claims of those who specify any form of treatment that will abort the disease in that time. In these cases, the physical evidence not being sufficient, the diagnosis of pneumonia is often very uncertain and, as recovery is the rule, post-mortem verifications are out of the question. 5. Under the head of chronic pneumonia he refers to the croupous and catarrhal pneumonias, subacute from the onset and lasting for months and sometimes for years, and very frequently ending in recovery. Sometimes these cases are attended with hemoptysis, and they frequently simulate pulmonary tuberculosis so closely as to be mistaken for it by competent physicians. He reports two cases that he thinks must be regarded as subacute or chronic cases of croupous pneumonia of this type, and mentions others. The other points of difference between this subacute chronic croupous and catarrhal pneumonia and tuberculosis of the lungs is the emaciation which is always present in the latter and not well marked in the former. Microscopic examination of the sputum is required to make the diagnosis certain. He alludes also in connection with this condition to the unresolved acute pneumonia in which the resolution after the typical acute attack is sometimes delayed for weeks. 6. As to masked pneumonia, while ordinarily the physical signs in pneumonia do not appear until some time after the fever, there are cases in which they do not show themselves until after the crisis, and even then imperfectly. He reports a case in which all the appearances were those of the disease, so that even the women in the house recognized it, but careful and repeated examinations did not detect the physical signs until the seventh day, and the patient was well on the ninth. A case in which the physical signs appeared on the sixth day is reported by Francis Minot and then they were distinct. As regards prognosis, he takes a favorable view in children in whom most of his cases occurred. He believes that croupous pneumonia involving not more than two lobes of the same lung will naturally terminate in recovery if not too much interfered with. Considering that most of his patients lived in unhygienic surroundings, and were without the elaborate nursing that is sometimes considered necessary, this is a favorable showing. The duration of the disease in his ordinary cases was from six to ten days. The treatment was liq. am. acetatis combined with sweet spirits of nitre in minimum doses; no coal-tar antipyretics unless the temperature rose above 104 degrees, and then a few small doses of phenacetin to reduce it a degree or two; calomel in tablet form in small doses, for constipation; about the fifth day, if there was much prostration, small doses of tincture of nuxvomica repeated as required. In adults, tincture of strophanthus and digitalis may be added as needed. In delayed resolution and difficult cough, etc., carbonate of ammonium is given with the nuxvomica with advantage. Washing the body with alcohol and water frequently reduces the temperature without drugs. No local application was used on the chest and very little alcoholic stimulant except when prostration was great, and then with doubt as to its efficacy when used. The diet consisted of boiled milk, barley or oatmeal water, according to the condition of the alimentary canal. Palier believes that the golden rule in the treatment of pneumonia in children is to interfere as little as possible except when interference is absolutely necessary.

87. Hysterical Blindness.—Muzzy remarks, in commencing

his article, that he has found much difference of opinion as to the frequency of hysterical affections of the eye. Most writers say that young girls are the most frequent victims, but experience does not support such a statement. Two points, not mentioned by de Schweinitz, are the suddenness of the onset and the anesthesia of the conjunctiva and cornea. The most frequent form is concentric contraction of the visual field, and the next most frequent is disturbance of the color sense. Functional paralyses have been described, also diplopia and in a few cases hemianopsia. One author, Lagrange, elaborately describes hysterical binocular diplopia. This may occur in two ways, in most cases, from spasms of accommodation causing two images, of which in a few cases irritation of the visual centers is the cause. It must be remembered that hysterical manifestations may complicate actual organic diseases of the brain and embarrass the diagnosis. Treatment is generally unsatisfactory.

88. Seasickness.—Remarking that the amount of suffering from seasickness renders the subject one of some importance, DeVries says that it is clearly a functional disease of the nervous system due to shock produced by the motion of the ship. The common notion that it is beneficial is altogether wrong, as it is decidedly injurious. Vomiting is a symptom of concussion of the brain; seasickness is a series of mild concussions. One of the first symptoms mentioned by the author is not often described as such, namely, an inordinate appetite developed as soon as rough water is encountered, to be quickly followed by the different stages of seasickness. As regards treatment, in some slight cases a prolonged even inspiration as the vessel rises, followed by expiration during descent, thus controlling the movements of the diaphragm, is efficacious. He does not speak well of the bromid treatment recommended by Beard and others. The plan he recommends is thorough purging before embarking, followed by 20 grains of sodium bromid at 7 a.m. on the day of sailing, and repeated one hour before the vessel sails. Keep on deck during the voyage, except at meals and during sleep. Indulge freely in Vichy and Apollinaris water. In those who have not undergone this preliminary treatment, aromatic drinks, lemonade, champagne and ginger ale are of great value. The horizontal position is generally most agreeable. Substantial and succulent food easy of digestion, and stimulants, are indicated. Avoid cold food. Nitrite of amyl has been tried with success and should be given in full doses and repeated if necessary. He has not found cocaine beneficial, though it has been recommended. In very severe and obstinate cases, after everything else has been tried without success, the patient's very feeble condition and the constant vomiting call for morphia, but it must be administered with great care. The patient should be kept under its influence at least twenty-four hours.

89. Epiphyseal Separation of Ends of Humerus.—Lucid describes the condition of epiphyseal separation of the ends of the humerus, which is liable to occur in young people. After noticing the anatomy and mechanism of the displacement, he speaks of the diagnosis. The first symptom notable in separation of the upper epiphysis, and distinguishing it from fracture, is the abrupt projection about one inch beneath the coracoid process, caused by the upper end of the lower fragment of the bone. Next comes crepitus of a softer nature than in fracture. Thirdly, the end of the shaft is round and smooth, not sharp, having the form of a low cone. Again, there is the immediate recurrence of the deformity when the means employed for its reduction cease to be in operation. The most important practical point is that the accident is apt to be followed by arrest of development, if not properly reduced. The common error in treatment is the severe and protracted extension used to reduce the relaxation, which is effective only as long as it is maintained. The most effectual mode of reduction is by carrying, with moderate extension, the humerus forward and upward. The head will roll upon the glenoid surface in any motion of the arm until restrained by its capsule. Now, then, while the humerus is still back of the central line of the body, the head is rolled upward, and long before the humerus is brought up perpendicularly, the capsule at the lower border of the head has become tense, thus holding it firm; while the humerus, being thrown up

and restrained by its muscles, slides the diaphysis backward, producing a coaptation of the corresponding facets. In other words, the reduction is effected by carrying the arm forward and upward, using moderate extension to the perpendicular line with the body.

The retention is effected by moderate extension while bringing the arm down to the side, and maintaining this slight extension until dressings for the purpose of continuing it are applied. Moore's method, which consists of a wooden splint fastened to the outer side of the arm, resting its lower end in a strip of adhesive plaster, while the upper end projects two inches above the shoulder, with a notch through which a bandage is passed under the axilla for extension, fulfills easily and promptly the indications.

The diagnosis of separation of the epiphysis at the lower end of the humerus is easy on paper, but very difficult in practice, owing to the swelling. In this condition, the X-ray, when available, offers the most valuable aid in early diagnosis. Lucid recommends the use of an Esmarch bandage starting at the hand and going slowly but firmly up the forearm over the swollen elbow-joint to the arm-pit. Leave it on for ten or twelve minutes, and then gently remove it, beginning at the hand and leaving a few turns at the top still in place. The elbow thus exposed will be pale, bloodless and no longer swollen, and the diagnosis can be made with ease. The lower end of the upper fragment will be tilted forward and the elbow-joint pushed seemingly backward with limited flexion and extension of the forearm. The lower end of the upper fragment has greater width than any fracture at the base of the condyle, and the line of separation is nearer the end of the bone. For reduction, grasp the forearm and make extension with the knee in the bend of the elbow, adjusting the fragment with the free hand. Now remove the remaining bands of the Esmarch bandage and apply a posterior and anterior splint with pressure anteriorly over the seat of separation. Passive motion should be resorted to about the seventh or eighth day, by the surgeon himself, then about the twelfth day and after that every other day until the twentieth. The fragments should be held in apposition and motion made very cautiously. If after the twenty-second day complete fixation and extension can not be produced, the adhesion should be broken up under anesthesia. It is often advisable after provisional callus formations and the fragments are in position, to bandage the arm, one day extended and the next day flexed.

91. **Epileptic Eye Strain.**—Capps reports two cases of epilepsy relieved by the use of atropin and suitable glasses; no return of the epilepsy in one case for a year and in the other for five months at the date of writing. He insists on the importance of consulting an oculist in epilepsy in children.

93. **Roentgen Ray in Incipient Tuberculosis.**—Williams reports the results of examinations of 165 patients with incipient tuberculosis, by the Roentgen ray. The diagnosis of tuberculosis was confirmed by the discovery of the bacillus or the reaction of the tuberculin test. He groups his patients into two classes: those with slight physical signs but no rales, and those without physical signs. He reports cases of each. He thinks that the value of the Roentgen test is that it gives an early warning when other signs are not prominent, and in some cases it may correct a mistaken diagnosis of tuberculosis from apparent physical signs. It is also of value in cases of tuberculosis with pleurisy and effusion, with bronchitis and emphysema. In two cases the X-ray failed, though the other tests demonstrated the disease, but generally it is the most efficient means of diagnosis. The fluorescent screen is more reliable and convenient than photographs in these examinations.

94. **Climate in Renal Diseases.**—The causal condition that has been recognized in certain kidney troubles is here discussed by Walker, who finds that the principal element is soil dampness, and he suggests a residence in a dry sandy soil as one of the most valuable means of treatment.

95. **Inguinal Hernia, a New Operation.**—In spite of the excellent results of Bassini's method, it has occasional failures, and Beck here attempts to improve on it by still further fortifying the abdominal walls. His method is as follows:

The incision is made down to the internal surface of Poupart's ligament alongside the outer margin of the rectus muscle, exposing its lower third down to the shelving portion of Poupart's ligament. The sac is isolated from the cord, and ligated and cut off within the internal ring. While the cord is held away the cut aponeuroses are dissected backward and an oblique incision is made which divides the lateral fibers of the rectus muscle transversely, to the extent of about one-third of its width, a little below the lower third of the muscle. The incised fibers are then so far severed from the remainder of the muscle that their upper portion, when turned downward, will reach Poupart's ligament without any considerable tension. This turned flap is now fastened to the conjoined tendon at one side, and to Poupart's ligament on the other, with formalin catgut, after the cord has been placed on it so that the cord rides, as it were, on the muscular flap. The gap caused by the resection of the flap is now covered by uniting the outer margin of the rectus muscle with the broad abdominal muscles. Then the cut aponeuroses are united above the cord by a continuous suture, thus forming a very strong posterior muscular wall, which in large and direct hernias may be of importance. It may also be that the removal of the sac may thus be rendered unnecessary in small hernias.

In the cases in which he used this method the results have been exceedingly satisfactory. As he says, however, the real value can only become evident after more experience and observation. The question of the gap as well as that of the division of the nerves and of cutting off some of the blood-supply has been well considered, and the objections seem to be only theoretic.

96. **Concerning Colorado.**—The climate of Colorado, and its advantages in consumption, are very fully stated.

97. **Cheyne-Stokes Respiration.**—The value of Cheyne-Stokes respiration as a diagnostic sign of the early stages of interstitial nephritis is here pointed out by O'Donovan. He has records of three cases in which these symptoms occurred during sleep, at a time when there was no albumin in the urine, or other evidence of any departure from perfect health, and in all three interstitial nephritis was developed later. The phenomena occurred irregularly and only at night and were not influenced by any particular posture of the individual. He asks for observations in large hospitals for this symptom occurring in the early stage of disorders, as there night nurses have opportunity for observation.

99. **Floating Liver.**—Floating liver is defined by Einhorn as a liver that has fallen downward and can be replaced by manipulation. Its etiology is obscure. He discusses it at some length, reviewing various alleged causes. He thinks that an enlargement of the abdominal cavity is of great significance, but it must be combined with other causes. As to the frequency of the condition, he has found it in 30 out of 804 patients suffering from digestive disorders, or about 3.7 per cent. It appears to be more frequent among women than men, their percentage being about 5.6 to 2 per cent. for the male sex. The conditions of floating liver and floating kidney often coincide. In about one-half of his female patients this was true. As regards the symptomatology, he divides it into five groups: those in which no disturbances are noticed; dyspeptic cases with indefinite digestive symptoms and feeling of weakness and nervous symptoms; cases of hepatalgia with almost constant pains in the right side of the abdomen, often radiating toward the back and shoulder-blades, and sometimes subsiding with the recumbent position—sometimes drawing and tearing pains are felt; cases of hepatic colic with symptoms like those of gall-stones, but seldom jaundice; and lastly, asthmatic cases in which a feeling of fulness and constriction in the upper abdominal region associated with slight dyspnea is especially prominent. He reports cases of some of these different groups. The diagnosis by palpation is described in detail and the differential diagnosis discussed. The condition may be mistaken for renal tumor or hydronephrosis, or it may be diagnosed when the real disturbance is liver enlargement or other conditions filling up the abdominal cavity. It must be shown in the diagnosis that no intrathoracic organ is disordered so as to force the liver downward. The treatment resembles, on the whole, that of floating kidney; the use of well-fitting abdominal bandages

to support, gentle massage, diet, exercise, etc. He does not favor surgical treatment. In conclusion he speaks of the possibility of mistakes in the diagnosis from appendicitis, gallstones, etc., and states that the appropriate treatment is usually crowned with brilliant success.

100. Typhoid Fever.—The practical treatment of typhoid fever, according to Taylor, is: first of all, rest; avoidance of purgatives; care as to diet, none at all being given for the first twelve or twenty-four hours, especially if the patient is nauseated. After this feed three times a day with soft food. Never allow your patient to eat anything he is obliged to masticate. When the temperature rises above 101, he gives anti-febrin, and if restless at night, bromidia. If the tongue is dry, he gives for a day or two small doses of turpentin in capsules, or creosote and carbolic acid and tincture of iodine. He has the patient's mouth cleansed three or four times a day, and directs him to chew *tolu* an hour or two every day until the tongue becomes moist, and take as much water as his stomach can conveniently absorb. Use colon irrigation with warm sterilized water, or if diarrhea is present, add a little boric acid or permanganate of potassium. Sponge the patient's body once or twice a day with warm water, or if a bath-tub is available, immerse for ten to twenty minutes. He does not use cold water and fluids warm water sufficiently antipyretic. If not enough water is taken by the stomach, he gives an injection, into the colon, of about a pint of decinormal saline solution, after it has been irrigated. The above is for treatment of typhoid without complications. When it occurs in patients suffering from other troubles, the treatment is slightly modified, especially when gastric disturbances pre-exist. Digestion must be carefully watched. The food must be small in amount, easily digested, and slow to ferment. He thinks the white of an egg suits this class of cases better than any other food. Milk is inadvisable for patients with weak digestion. Antiferments may be given if necessary. If the stomach is irritable and there is hyperchlorhydria, give sedatives just before food. A cup of hot water and a large dose of bismuth will usually prove efficient. Colon irrigation and baths are used as in the former case. The author concludes as follows: By promoting digestion and preventing indigestion, and keeping the alimentary tract from the stomach to the anus free from absorbable toxins, we will have no necessity for an average temperature of over 100-101 F., and a pulse of 72 to 80 per minute. The sum total is, favor digestion, prevent absorption of toxins, and promote thorough elimination of the toxins unavoidably absorbed.

101. Facts and Fallacies of Urinalysis.—The fallacies pointed out by Schaefer are the dependence on the boiling test for albumin, which he gives reasons for believing misleading; the importance attributed to phosphoric and uric acid elimination, and also that of calcium oxalate. He also speaks of the difficulties of the sugar test and the need of skill in making it, and the overestimated significance of tube casts. Only the true casts, consisting of a uniform, transparent, gelatinous matrix, to which other elements, such as epithelial cells, red blood-corpuscles, leucocytes and crystalline or amorphous forms, may accidentally have been attached, should be regarded as of great diagnostic value. He agrees with von Jaksch that Ehrlich's diazo reaction has little clinical significance.

102. Intussusception.—After discussing the subject of intussusception and operation for its relief, of which he thinks dissuagination and reduction is the ideal operation and the one promising greatest success, Munro analyzes the reported cases of resection and reports two personal ones, in one of which recovery took place.

104. Carcinoma.—Councilman describes the mode of growth of carcinoma, and says that as regards its cause, we enter the domain of theory. The influence of trauma he rejects, as also the theory of Thiersch, that it is due to a degeneration of the connective tissue. Cohnheim's theory of its being due to embryonic residues included in the normal growths has more in its favor, but he evidently does not accept it fully, nor the parasitic theory which is now so much to the front. He points out the fallacies of statistics of carcinoma, from which its excessive increase has been inferred, and says that the more accurate statistics of life insurance do not give evidence of its

increase. It is not improbable that carcinoma may be due to parasites, but if so the invasion must take place in the latter half of life, in places least exposed to ordinary invasion. The parasite must enter every cell, causing it to proliferate, and must be carried with the cell to other parts of the body to repeat the process. He thinks this theory must be taken up and definitely proved by investigation, or set aside.

108. An Emergency Obstetric Case.—Young reports a case of pregnancy terminating in eleven months, the child's head being so large as to require symphysiotomy. The operation though done under difficulties, was a success.

110. The Rocky Mountain Region.—Van Zant sums up the advantages of the Rocky Mountain region for the treatment of tuberculosis, especially in its incipient stage. Cases where cavities have occurred are not well suited to this climate. He notices also the following other disturbances, as affected by the climatic conditions: "Inflammatory rheumatism is quite rare here, whereas muscular rheumatism and neuralgias are quite common. The latter are apparently due to the sudden changes of diurnal temperature. Malaria is never seen except in imported cases. Asthma, frequently though not by any means invariably, disappears as if by magic. Among those reclaimed from this dread disease are some of Denver's most prominent doctors. Pneumonia, while no more prevalent here than elsewhere, runs a much more rapid course, the crisis often being reached in two to four days. Gastrointestinal disorders among infants are very much less prevalent than at lower altitudes. Sunstrokes are unknown."

111. Suicide.—Sweringal notices the increase of suicide, and lays it to the social conditions, which he thinks should be reformed.

114. Contagion and Infection.—Grigg discusses the significance of these two terms, quoting various authorities as to their usage, and concludes that from his standpoint "an infectious disease is produced by a pathogenic micro-organism that lives and propagates in a suitable soil on the outside and independent of man, but when taken into the system and absorbed is capable of producing certain diseased conditions which are not directly transmissible from patient to host; while a contagious disease is produced by a pathogenic micro-organism that propagates in the afflicted patient and which, after escaping from said patient without undergoing further change and on being taken into the system of a prospective host and being absorbed, is capable of producing certain diseased conditions and is transmissible from patient to host either directly by contact or indirectly as by fomites." He thinks it is of some importance to make this distinction clear.

115. Nervous Hemorrhages.—Toms reports a case of a man 33 years of age, with neurotic antecedents, who had been injured by an assault and by accident, who suffered from attacks of hemorrhage, apparently originating somewhere in the buccal cavity. There were various nervous symptoms and there was a history of delirious spells in the past. There were hysterical stigmata. Physical examination was negative, as was also urinalysis. He reports the case as of interest on this account.

117. Inheritance.—Conklin discusses the subject of heredity from the point of view of a zoölogist, and maintains, in general, Weismann's theory that acquired peculiarities are not inherited.

FOREIGN.

Progres Medicales (Paris), August 10 and 26.

Nature of Acute Leukemia. F. RAMOND.—The present state of our knowledge in respect to acute leukemia is summarized by Ramond from the communications to recent congresses, etc., as follows: The infectious stamp of the syndrome of acute leukemia is apparent. Everything about it suggests an infection invading first the ganglia and then spreading rapidly to all the viscera. But on the other hand, the composition of the blood and the histologic lesions of the organs are not all like those observed in an infection in general. The changes in the blood have been frequently described. The hypertrophied ganglia are formed of a sort of hyperplasia of the normal reticulum with a multitude of small mononuclear cells in the meshes, associated or not with a few large mononuclears, with or without granulations, according to the variety of leukemia under consideration. The liver and kidneys have nothing of

the embryo infiltration so common in infections, but present more complex formations, recalling in every respect His' lymphoid tissue; small nodules with the structure of embryo lymphatic tissue, that is, a delicate reticulum with an infiltration of small cells in the interstices. This formation of lymphoid tissue, characteristic of lymphatic leukemia, is encountered in most of the viscera, also in the bone-marrow, subcutaneous cellular tissue, etc. Myelogenic leukemia differs by a few secondary peculiarities. These anatomic lesions bespeak a non-infectious origin, but we must not be too absolute, as it is possible that we are not yet acquainted with all the reactions to infection, and that certain micro-organisms may influence the organism in a special manner. Recent research on the sporozooses shows that besides the bacterial infections there are others, due to the invasion of the organism by sporozoa, which differ materially from the former. Cultures and inoculations in leukemia have resulted negatively or conflictingly. The writer himself experimented with aerobic and anaerobic cultures on every known medium and with every animal in the laboratory, colloidion-saes, etc., without any results suggesting the presence of a bacterium or sporozoon in any manner.

Septicemia of Otic Origin Without Thrombophlebitis of the Sinuses. STANCULEAUNE AND BAUP.—Two observations of suppurative otitis of the middle ear and mastoiditis terminating in fatal septicemia, are described in this communication, noticeable on account of the fact that trephining and évidement, and ligature of the jugular had no effect on the course of the infection unless perhaps to give it impetus. In both cases the liver showed degeneration, tumefaction of the cells and fatty degeneration of certain lobules. An extremely virulent streptococcus was found in the blood; no lesions in the venous system nor in any sinus. The cases suggest as etiology the possible passage of the microbes through the walls of venules or sinuses into the circulation, with a hepatic predisposition to infection.

Annales de l'Institut Pasteur (Paris), June.

Role of the Leucocytes in Immunization Against Arsenous Acid. BESLEDKA.—Rabbits can be immunized against fatal doses of arsenous acid by accustoming the leucocytes, which is accomplished by fractioning the fatal dose or by injecting a small dose of the poison twenty-four hours before the fatal dose. The serum of these animals has preventive and antitoxic properties against a dose of acid fatal in forty-eight hours. The antiarsenin is probably not an arsenical compound; the arsenic is not dialyzable. The antiarsenin acts on the toxin by the intermediation of the leucocyte system. Suppressing this, as when the poison is injected into the brain, the action of the antiarsenin is paralyzed.

La Parole (Paris), No. 6.

Practical Applications of Experimental Phonetics. ROTSELOT.—The movements of the tongue and larynx in speaking are registered by a simple apparatus consisting of a rubber olive held in the mouth, a tube, drum and an index. The subject can see for himself in what way his movements differ from normal, and corrects them with a little exercise. This method has proved extremely effective in overcoming defects in pronunciation, teaching languages, and curing stammering, paresis of the vocal chords, etc., combined with open-air life and the use of the spirometer to test and increase the breathing capacity. In pronouncing *tar* for instance, with the olive in the mouth, the index springs quite a distance, but does not move when *car* is pronounced. The larynx signal is a small sleigh-bell held by a weak spring against a thin metal plate, the bell tinkling when the plate is applied to a vibrating larynx. Another contrivance is a wire bent into the outline of a small hoe, which is placed over the under teeth to teach the pronunciation of the liquid *n* as in *onion*, the tongue kept in contact with it.

Revue Herb. de Laryngologie, etc. (Bordeaux), August 10.

Ozena and Sinusitis. P. JACQUES.—"Idiopathic ozena is a myth," the writer declares. Ozena is merely the secondary consequences of sinusitis of one or more of the nasal fossae. All therapeutic measures for ozena to date merely respond to the symptomatic indication to combat the atony resulting from sclerosis of the pituitary body due to irritation from sinus secretions. Moure has noted 32 cases of verified sinusitis in 114 of ozena and if we were able to examine the sphenoid

ethmoidal system as easily as the frontomaxillary, this coincidence would probably be found the rule. Each sinus should be minutely interrogated in turn, he concludes, in every case of ozena.

Annales de la Societe Med.-Chir. de Liege, June.

Autovaccination in Treatment of Pneumonia with Digitalis. G. CORIN.—Six years of successful experience leads Corin to affirm that "expectant treatment of pneumonia is illogical and dangerous when we have in digitoxin a safe, reliable specific to abort the disease." Digitalis is unreliable, but digitoxin, in spite of its formidable name, can be depended on to strengthen the heart and prevent stasis in the lung and thus check the morbid process. The reinforcement of the activity of the heart prevents any considerable absorption of the toxic products secreted by the pneumococcus, which thus dies poisoned by its own excretions. Or possibly the small amounts of the toxic products which the digitoxin allows to be absorbed vaccinate the subject from the focus of infection, while the pneumococcus culture becomes less and less virulent to final extinction. Corin compares the action of digitoxin to that of Pane's serotherapy and considers them probably identical in the autovaccination produced. Three milligrams of digitoxin is the dose he gives an adult, and the effect is not apparent for twenty-four, possibly thirty-six to forty-eight, hours, afterward. The fall of the pulse is the first expression of the action of the digitalis, and it precedes the fall of the temperature, the first expression of the action of the vaccin.

Berliner Klinische Wochenschrift, August 7, 14, 21.

Technic and Hardening of Sections of Brain. E. SIEMERLING.—With a microtome specially constructed Siemerling cuts series of sections in any direction and hardens with the Mueller-formol mixture; two parts of the 40 per cent. solution of formal to 100 parts Mueller. Study of sagittal sections throughout the entire brain shows great variation in the number of tangential and especially of horizontal fibers in the cortex. They are most numerous in the convolutions of the temporal lobe, and next in the central convolutions and the convolutions at the calcarine fissure. This fact should be borne in mind in studying fiber disappearance in paralysis.

Primary Retroperitoneal Echinococcus in the Abdomen. F. KAREWSKI.—In one of the two observations of this rare localization reported, obscure symptoms resembling lumbago had existed for years, and a tumor finally appeared during pregnancy, in the left kidney region, with evidences of catarrh of the bladder. Operation disclosed a suppurated echinococcus sac which had developed on the kidney and extended behind the descending colon. In the other case the sac had developed at the emerging point of the plexus ischio-cruralis and had been the cause of ischialgia during twenty-five years. Complete recovery in each followed after extirpation of the sac.

To What Extent Can We Sterilize Our Hands? GOTTSCHEN and BLUMBERG.—"Three years of tests and experiments have established that asepsis of the hands can only be realized in about 75 per cent. of the attempts, and that in tincture of soap we have the most effective disinfectant for the hands yet discovered." (See JOURNAL, July 8, p. 100.) Triclot gloves, frequently changed during aseptic operations, are the best guarantee of asepsis. They act as a filter, and frequently changing the filter removes the accumulated germs from within and without. Rubber gloves are too easily torn for general surgical operations but are indispensable in septic conditions.

New Method of Applying Long-Continued Powerful Galvanic Currents Without Injury to the Skin. FRANKENHAUSER.—This is a preliminary communication from Senator's clinic, and describes a method by which the current can be applied to the tissues with none of the cauterizing effect which has been such a disadvantage hitherto in long-continued applications of electricity. The corrosive substances are washed away as they are generated, by a continuous stream of physiologic salt solution. A still simpler method is to have a sodium solution at the anode and a hydrochloric acid solution at the cathode, or any sodium or chlorine salt respectively, in which case no corroding ions are generated. Metallic electrodes are discarded on account of their chemical action and sheets of a prepared felt are used. By this means with an electrode of twenty square centimeters 580 coulombs can be applied at one sitting.

[*Deutsche Medicinische Wochenschrift (Berlin)*, August 17, 24 and 31.

Rheumatic Mental Disturbances with Acute Rheumatic Chorea and Study of Choric Movements. M. JASTROWITZ.—In the two extremely severe cases studied in detail, it was evident that the agent causing the disease had directly attacked the portion of the nervous system to which Jastrovitz ascribes the various forms of choric movements, that is, the entire motor part of the central nervous system, weakening and irritating it. In one, the cortex was first affected (first stages of the psychosis), then the joints, and then the motor centers and tracts (chorea), and the clinical phenomena varied as the various regions became involved in turn. In the second case the course was more rapid and violent, and there was mixed infection with the streptococcus pyogenes, which may possibly have favorably influenced the psychosis and chorea, but induced malignant endocarditis and thrombosis of the femoral artery. Both recovered. He also ascribes the choric movements in idiocy to a "weak brain life," a general condition affecting the motility.

Extirpation of Cancerous Rectum and Sigmoid Flexure. K. SCHUCHARDT.—The coccyx method followed by our Stettin confrère allows the complete extirpation of all the parasacral tissue with its possibly infected lymphatic glands along with the rectum, to the promontorium and beyond. The patient being on his back in a modified, exaggerated Trendelenburg position, buttocks extremely elevated, legs drawn up and fastened, the coccyx is divided with a Gigli saw and the rectum mobilized and excised with ease and no hemorrhage proceeding as for a hysterectomy, after a circular incision. With a ring carcinoma he makes a lumbar colotomy a few weeks previously. Not until the entire field has been inspected, drain inserted and small gauze tampon left in the sacral space does he cut into the rectum and suture the central end to the skin. He does not attempt to save the sphincter, and in case the vagina is involved he proceeds to a bilateral paravaginal incision such as he advocates for hysterectomy, extending it through the musculus levator ani on both sides as high as required. In one case he succeeded in mobilizing 40 cm. of the rectum, extirpating 30.

Dyspepsia From Motor Insufficiency of the Urinary Apparatus. O. ROSENBACH.—In these days of specialism there is danger of attributing to the organ which appears most affected disturbances which are primarily due to an insidious morbid process elsewhere. This is especially liable to occur with the dyspepsia which careful observation will trace to a motor insufficiency of the urinary apparatus—nokinetic dyspepsia—as Rosenbach establishes in this study concluded from the two preceding numbers. The cases are always men at the end of the fifties or in the sixties. Disturbances in the digestion appear at intervals, first noticed as a distaste for meat, a disagreeable, stale taste in the mouth, frequent pyrosis or eructations of odorless gases, efforts to vomit, an uncomfortable sensation in the jaws and salivary glands, sometimes involving the head. There is usually lassitude and great weakness in the lower extremities, progressive debility and emaciation from lack of nourishment. In some cases chills are noted at irregular intervals, usually in the evenings; temperature low, no fever except in advanced stages; frequent desires to urinate, especially during the night. Some complain of a sensation of oppression in the lower abdomen, desires for, and incomplete, defecation. The tongue is seldom coated, usually only in severe cases, when there is a blackish discoloration at the rear of the tongue and slight fever. Subjects who used to smoke much have a distaste for tobacco and liquor. Salivary secretion is diminished and gums are dry. Stomach contents are negative; there is occasionally absence of free HCl. Palpation discloses nothing abnormal, except that occasionally in certain positions, the bladder is noted reaching to the navel, long and tapering. The urine contains no albumin and has merely the slightly darker color and higher specific gravity usual in digestive disturbances. But a special characteristic is that it decomposes with exceptional rapidity and disengages ammonia with a strong odor. Also, as the urine stands, quantities of mucus are deposited in the sediment, and the microscope shows a remarkable abundance of white corpuscles. The subject finds it impossible to retain urine long and even when the bladder reaches to the navel, the amount contained is not over 200 to 300 c.c. The prostate is usually enlarged

at this age; the essence of the affection is a paresis of the motor system of the urinary apparatus. An important point in the differentiation is that catheterization is easy and painless. The bladder disturbances are so slight that patients never even refer to them. If neglected and long continued, serious nephritic complications may appear, but in the early stages, when the sphincter is alone involved, treatment is invariably successful. It consists in a general tonic and kidney-resting régime, warm baths, rest in bed, refraining from liquids and light, cautious massage of the abdomen, ureters and bladder region. Faradization and ice-bags, nau vomica or ergotin have also proved useful. Beer and sour wines must be strictly avoided.

Zeitschrift f. Geburtshilfe u. Gynäkologie (Stuttgart), xii, 1.

Etiology of Paralysis of the Upper Arm From Injury at Birth. J. SCHIEMAKER.—Experimentation on infants' cadavers has demonstrated that "Erb's point"—the emerging point of the sixth cervical nerve between the scapula, where the roots of the brachial plexus lie—can be directly injured by compression with the forceps, and also by traction on the head or on the lifted arm during version, indicating the necessity of special caution.

Wiener Klinische Wochenschrift, August 17.

Molluscum Fibrosum. P. MERKEN.—The argument in favor of the congenital nature of this affection, advanced by Merken, is based on the facts that seventeen cases are on record which are known to be congenital and that the influence of heredity is unmistakably apparent in many others; also that by far the largest number develop in youth and especially in early childhood; also its frequent coincidence with pigmented patches. He calls attention to the frequency of coexistent mental disturbances. In his opinion it is a deformity similar to nevus in many respects, but differing by its progressive character, which stamps it as a neogrowth—generally benign but with a tendency to malignancy—the congenital deformity consisting in the tendency of the connective tissue to unlimited proliferation.

Centralblatt f. Nervenheilk. u. Psych., No. 1.

Continuous Baths for the Insane. E. BEYER.—The experience at Heidelberg has been very favorable to these baths or water-beds, transferring the patient from bed in the morning to the bath—temperature, 23 K.—and from the tub to bed again at night, with no other procedures or examinations. It is especially beneficial for the rapid curing of decubitus, phlegmons, etc., and is indicated for all uncleanly, restless, destructive or menstruating patients. It has proved invariably successful in mania. No mechanical means are used, but a dose of hyoscin at first may be found useful. Each ward should have its separate bath-room with tub and attendant to each two or three patients. Cells and isolating-rooms will then be found unnecessary.

Zeitschrift f. Hygiene u. Inf. (Leipzig), xxxi, 1.

Ray Forms of Tubercle-Forming Organisms. LUBARSCH and SCHULTZE.—Research in respect to the "modified tubercle fungi," streptothrix, etc., has demonstrated that the actinomycetes forms which until recently have been considered peculiar to and characteristic of a certain distinct species of disease germs, in reality belong to a long list of fungi of the streptothrix group. The ray and club shapes are not the expression of degeneracy but are rather deformed specimens, due to arrested development. This group of micro-organisms should not be classed with the schizomycetes nor the hyphomycetes, but should be considered independent transitional forms between these two forms. The principal cause of the formation of radiating foci is the reaction of the living tissue, the barrier formed around the invading bacilli by the leucocytes; the bacilli can only spread at the weakest points of the encircling barrier. Comparing this actinomycetotic form of the tubercle bacillus with the actinomycetes, he observes that the analogies are greater than the differences that separate them.

Bacteriologic Enzymes as the Cause of Acquired Immunity. EXNERICH and LÖW.—"The substance resembling an enzyme, secreted by bacilli, not only destroys its own bacilli in time but is also bactericidal to certain other species and neutralizes their toxins." Experiments with the enzyme derived from the bacillus pyocyaneus—"pyocyanase"—proved that not a single culture would develop after two hours, out of

nearly five millions of anthrax bacilli to which the pyocyanose had been added *in vitro*. Tests on animals were still more conclusive; pyocyanose given with over a fatal dose of anthrax cultures or five hours later, saved the animals and no bacilli could be found in the blood.

The Anthrax Bacillus Does Not Form Toxins. CONRAD.—“We have no evidence to prove the general assumption that the anthrax bacillus generates a toxin. On the contrary everything tends to indicate that the anthrax bacillus is a typical infectious micro-organism.”

Clinica Medica Italiana (Geneva), March.

Pernanganate of Potassium an Antidote for Nux Vomica. E. PARATORE.—Drinking a solution of fifty centigrams of potassium permanganate in one liter of water will transform the strychnin in the stomach into a harmless compound. Follow with lavage of the stomach with the same at 1/5000; chloroform if convulsions have appeared.

Importance of Local Reaction in Genesis of Immunity. G. CASTRIGNUOVO.—Extensive experimental tests have demonstrated that immunity to intoxication with abrin or ricinin can be secured in animals, and that it is more certain and more extensive in proportion as the primary local reaction is intense and lasting. The gradual disappearance of the local alterations is an index of the degree of immunity attained. Animals immunized against one are partially immunized against the other. If the local reaction is very energetic and lasting it can, *per se*, produce a considerable degree of immunity. It was also established that an intense local reaction produced by cantharidin confers a greater resistance to intoxication with bacterial toxins—Koch's tuberculin or diphtheria toxin—or analogous toxalbumins (abrin), but never sufficient to arrest the fatal course of tuberculosis.

Revista Medica de S. Paulo, June and July.

Liver and Spleen in Ankylostomiasis. P. MAGALHAES.—Hypertrophy of these organs in this disease is usually ascribed to malarial infection, but Magalhaes describes three observations in detail out of a large experience, in which the liver and spleen were much enlarged but no evidences of malarial infection could be discovered in the anamnesis nor blood, not even a trace of melanic pigment. The red corpuscles were diminished in number and varied from extremely large to extremely small, with some deformed specimens. In one case the leucocytes contained no trace of melanic granules. The leucocytes were diminished in number in all, and only one eosinophile was found in all the preparations.

Revista Medica de Bogota, March and April.

Hysterical Pseudotypoid Fever. ALGANDONA AND CALDERON.—Suggestion proved the only means to control and cure the case described in this communication: a hysterical young woman who for six weeks presented the clinical picture of severe typhoid fever, utterly rebellious to baths and therapeutic measures, with several peculiar features, such as the exacerbations every seventh day, frequent abrupt rise and fall of the temperature and pulse, convulsions, discordance between and alternate occurrence of dyspnea and tympanism, fetal pulse and enterorrhagia, evidently aberrant menstruation. With suggestion, the temperature dropped two degrees and the pulse from 132 to 120 in five minutes, at one time. It also controlled and arrested the convulsions every time. The writers mention the difficulty encountered in the countersuggestion of the family.

Revista Medica (Mexico), August 1.

New Syndrome Consecutive to Wound of Spinal Cord. URRUELA.—The symptoms produced by Mott by hemisection of the spinal cord in monkeys were typically reproduced in a case of stab-wound of the spine, that evidently severed the cord as in his experiments. The tip of the knife must also have injured the pyramidal tract beyond on the other—left—side, as lax paraplegia occurred at once, with the hemiparaplegia on the right side. During the two years since, the right side has regained its function, but the left only partially, and the left limb is much contracted. There were no vasomotor nor trophic disturbances at any time. Rectal and bladder functions were regular after three days of retention.

Societies.

COMING MEETINGS.

American Association of Military Surgeons of the United States, Kansas City, Mo., September 27-29.
Mississippi Valley Medical Association, Chicago, October 3-6.
Idaho State Medical Society, Lewiston, October 5-8.
Utah State Medical Society, Salt Lake City, October 6-7.
Wyoming State Medical Society, Laramie City, October 10.
American Academy of Railway Surgeons, Omaha, Neb., October 12-13.
Vermont State Medical Society, Burlington, October 12-13.
Medical Society of Virginia, Richmond, October 15.
Tri-State Medical Society of Alabama, Georgia and Tennessee, Chattanooga, October 24-26.
New York State Medical Association, New York City, October 24.
American Public Health Association, Minneapolis, Minn., October 31.

Idaho State Medical Society.—The annual meeting of the Idaho State Medical Society will be held at Lewiston, October 5 and 6, postponement from September 5 and 6 having been made to accommodate the State Board of Medical Examiners.

Douglas County Medical Society.—This Wisconsin society elected officers at its recent meeting, as follows: President, J. A. Rene; Vice-President, Dr. Saunders; Secretary, H. J. O'Brien; Treasurer, H. J. Orchard; Censors, Drs. Sheehan, Ground and McGill.

Kankakee Valley District Medical Society.—Twenty-two physicians met at North Judson, Ind., September 12 and completed the organization of this Society (see JOURNAL, August 26, p. 544) by the adoption of a constitution and by-laws and the election of the following officers: President, I. B. Washburn, Rensselaer; Vice-Presidents, W. A. Noland, North Judson, and R. B. Short, Union Mills; Secretary, N. W. Cody, Logansport; Assistant Secretary, H. B. Hill, Logansport; Treasurer, Wm. Kelsey, Monterey. After the organization was completed, Dr. Geo. W. Thompson read a paper on "Anesthesia," which was discussed by Drs. Short, Kelsey, Davis, W. H. Thompson, Thomas and others. The next meeting will be held in North Judson, Dec. 5, 1899.

Mississippi Valley Medical Association.—The next meeting of this Association will be held in Chicago, October 3 to 5. The general sessions will be held in Handel Hall, 40 Randolph Street; the Section meetings in the lodge rooms on the eighth floor of the Masonic Temple, and the exhibits in Commandery Hall, same floor. The following is the program:

GENERAL SESSIONS.

Address of the President. Dr. Duncan Eve, Nashville, Tenn.
Address in Medicine—"Typhoid Fever." Dr. J. A. Witherston, Nashville, Tenn.
Address in Surgery. Dr. Lewis McMurtry, Louisville, Ky.

MEDICAL SECTION.

1. Enzymes and Immunity. Chas. T. McClintock, Detroit, Mich.
2. Recent Physicochemical Researches as to the Physiologic Action of Lecithin and Other Organic Phosphorus Compounds. L. H. Warner, Brooklyn, N. Y.
3. Communal Hygiene. Ernest B. Sangree, Nashville, Tenn.
4. Some Phases of Malaria—Quinin in. Wm. Britt Burns, Deekerville, Ark.
5. The Treatment of Cystitis. M. F. Lee, Columbus, Ohio.
6. Diabetes and Its Constitutional Treatment. Elmore S. Pettyjohn, Alma, Mich.
7. The Treatment of Pulmonary Tuberculosis by Inhalation of Antiseptic Nebulae. Homer M. Thomas, Chicago, Ill.
8. The Management of Cases of Pulmonary Phthisis at Health Resorts. Charles F. McGahan, Aiken, S. C.
9. The Treatment of Acute Lobar Pneumonia. Ramon F. Garcin, Richmond, Va.
10. The Art of Diagnosis. E. L. Larkins, Terre Haute, Ind.
11. The Successful Treatment of a Case of Graves' Disease as an Antidote. Charles L. Minor, Asheville, N. C.
12. Do We Need to Think? Wm. O'Neill Mendenhall, Richmond, Ind.
13. The Evils; Their Causes, and the Remedy That Will Edify Medicine in the United States. A. M. Osnes, Dayton, Ohio.
14. Two Cases of Typhoid Fever with Unusual Complications in Very Young Children. E. B. Montgomery, Quincy, Ill.
15. Further Observations on the Treatment of the Abdominal Viscera Through the Colon. Fenton B. Turek, Chicago, Ill.
16. Report of a Case of Complete Hernia of the Pregnant Uterus. W. V. Anderson, Toledo, Ohio.

17. Leptomeningitis. Frank Parsons Norbury, Jacksonville, Ill.
 18. Pathogenesis of Functional Nerve Diseases and Its Prophylactic Indications. John Puntun, Kansas City, Mo.

SURGICAL SECTION.

1. Vesico-Rectal Anastomosis. J. Frank, Chicago, Ill.
 2. Intercostal Ulceration of the Rectum, with Report of Five Cases. Sterling B. Taylor, Columbus, Ohio.
 3. Modern Surgical Treatment of Hemorrhoids. Gustavus M. Blech, Chicago, Ill.
 4. Hemorrhage from the Rectum and Its Varied Importance As a Symptom. Leon Straus, St. Louis, Mo.
 5. Treatment of Certain Ocular Diseases by Excision of the Cervical Sympathetic Ganglia. James Moores Ball, St. Louis, Mo.
 6. Urethral Endoscopy. W. R. Blue, Louisville, Ky.
 7. Inflammation of the Vermontanum. J. Rilus Eastman, Indianapolis, Ind.
 8. The Technic of Abdominal Incision, Peritoneal and Extra-Peritoneal. S. E. Milliken, Dallas, Tex.
 9. Mammoth Ovarian Cysts. Reports of a Tumor Weighing 245 Pounds. Jas. B. Bullitt, Louisville Ky.
 10. Some Causes of Death After Abdominal Section. Louis Frank, Louisville, Ky.
 11. The Value of Prostatic Examination. J. Leland Boogher, St. Louis, Mo.

12. Intestinal Obstruction from Gall-Stones. J. Wesley Bovée, Washington, D. C.

13. Obstructive Growths of the Pylorus, with Report of a Successful Case of Pylorotomy. J. E. Allaben, Rockford, Ill.
 14. What Becomes of the Medicinally Treated Cases of Appendicitis? Louis Schooler, Des Moines, Iowa.

15. Appendicitis from a Medical Standpoint. I. N. Love, St. Louis, Mo.

16. A Plea for Early Operation in Appendicitis. A. M. Hayden, Evansville, Ind.

17. Surgical Features of Appendicitis. Hal. C. Wyman, Detroit, Mich.

18. A Study of Twenty-seven Cases of Appendicitis. Frank T. Merriwether, Asheville, N. C.

19. Certain Special Features in Hernia of the Female. T. H. Manley, New York.
 20. Surgery of the Turbinate Bones. J. A. Stucky, Lexington, Ky.

21. Nasal Stenosis Due to Defective Septa and Its Treatment, With or Without Thickening of the Convex Side. John J. Kyle, Indianapolis, Ind.

22. Mastoid Operation, With Report of Cases. Geo. F. Keiper, Lafayette, Ind.

23. Beta-Eucain As an Anesthetic in Eye Surgery. W. H. Poole, Detroit, Mich.

24. The Surgical Treatment of Chronic Frontal Sinusitis. Richmond McKinney, Memphis, Tenn.

25. Observations on Surgery of the Brain, Based on Clinical and Experimental Evidence. Geo. W. Crile, Cleveland, Ohio.

26. Removal of Cervical Sympathetic for Epilepsy, Exophthalmic Goiter and Glaucoma. Emory Lanphear, St. Louis, Mo.

27. An Arm Saved After Being Run Over by a Railway Locomotive and Crushed. S. L. Kilmer, South Bend, Ind.

28. Suture Materials in Surgery. Jos. Price, Philadelphia, Pa.

29. The General Treatment of Patients Before, During and After Surgical Operations. Fenton B. Turek, Chicago, Ill.

30. The Modern Small-Bore Projectile. Aug. Schachner, Louisville, Ky.

31. The Effects of the Automatic Mauser Pistol. J. D. Griffith, Kansas City, Mo.

32. Surgical Tolerance and Results. F. F. Bryan, Georgetown, Ky.

33. The Treatment of Gonorrhoea in the Female. A. Ravogli, Cincinnati, O.

Cincinnati Academy of Medicine.

Sept. 2, 1899.

LICHEN RUBER PLANUS.

DR. MEYER HELDINGSFELD presented a case of this disease with a universal distribution, of only seven weeks' duration. The eruption began on the flexor surface of the forearms, and extending over the arms, trunk and lower extremities. The papules were small, polygonal and waxy, aggregated here and there into plaques, purplish red in color, sharply defined and accompanied with pruritus. Papules were also present on the mucous membrane of lips, cheeks and palate. Two weeks of arsenic treatment had already induced reparative changes, and many of the large plaques showed central atrophy and a sepia-brown dis-

coloration. The sister of this patient was also presented and showed a lichen ruber eruption of three years' duration, on the lower extremities, and of the verrucosus type.

SPLENYMYELOGENOUS LEUKEMIA.

DR. MARK BROWN presented a patient afflicted with this disease. The patient was a man 40 years of age, and, as far as he was able to state, his trouble had begun suddenly about fifteen months previously with sharp lancinating pain in the splenic region. This pain had resisted treatment for nine months. He had noticed no enlargement of the abdomen until New Year's day, 1898, but the tumor mass had steadily increased in size since that time. He absolutely denied venereal disease and had never had an attack of malaria. He has lost about forty pounds in weight since the onset of his disease, but has regained a little, since the institution of treatment about a month ago. On examination, the patient did not appear to be very anemic, but he was considerably emaciated, this condition contrasting greatly with the protruding abdomen. The heart revealed a basic hemie murmur, which became lost toward the apex. The apex-beat was pushed slightly upward. The liver was enlarged to between two and three inches below the costal border. The most important point was the enlargement of the spleen, which extended as far downward as the anterior superior spine of the ilium and laterally several inches beyond the umbilicus. The splenic notch could be readily detected. The tumor was firm and hard, painless on palpation, and without nodules on its surface. There was some enlargement of the submaxillary and inguinal glands, but no others were involved. There had not been swelling of the feet at any time. The only signs of anemia that had been present were a general weakness and shortness of breath on slight exertion. Ophthalmoscopic examination was negative aside from pallor of the discs. The red and white corpuscles were counted in the same pipette, Toisson's solution—1 to 200—being the diluent. dilution reds were 3,300,000; whites, 400,000; the hemoglobin was not estimated, as the test is not very reliable, the presence of the large number of leucocytes altering the color to such an extent that the resulting color becomes untrustworthy for comparison. Differential count; small lymphocytes 10 per cent.; large lymphocytes 6 per cent.; polymorphonuclear leucocytes 35 per cent.; eosinophiles 6 per cent.; and myelocytes 43 per cent. The myelocytes at 43 per cent. would count up about 175,000 corpuscles per cubic mm.

It has been claimed that the myelocytes were not distinctive of this disease as was once thought. This was admitted, but the claim was made that the greatest number of myelocytes found in any other disease was far less than the least number found in any case of splenomyelogenous leukemia. In addition the blood showed marked irregularity, both in the size and shape of the red corpuscles, numerous nucleated reds, both normoblasts and megaloblasts, and a few "mast" cells. It was difficult in many instances to distinguish a large lymphocyte from a myelocyte, and the personal equation had often to be relied on. The speaker thought that, on account of the similarity of the two leucocytes, the myelocyte was derived from the large lymphocyte in this disease at least. A stained specimen of blood was shown under the microscope and the field chosen demonstrated large and small lymphocytes, neutrophiles, eosinophiles, nucleated red corpuscles, and the great irregularity of the reds. The treatment consisted entirely of arsenic, administered as Fowler's solution, commencing with three drops three times a day. He has been taking this medicine, gradually increased, for about a month, until now he is taking nine drops three times a day, without any toxic manifestations. Patient stated that he has gained several pounds in weight during that time and that he thinks the swelling in his abdomen has somewhat diminished. In response to a question the speaker stated that excision of a leukemic spleen has been performed twenty-four times with but one recovery: out of 105 splenectomies there had been 48 deaths; 16 of these latter cases were of floating spleen, of which 15 recovered.

INTOXICATION.

DR. OPIEUS EVERTS presented this, the paper of the evening. It dealt entirely with alcohol, and its defense in small quantities as a food. The writer's enormous experience enabled him to deal authoritatively with the question as to what part this drug plays in the etiology of nervous diseases, and he decided

that less than 10 per cent. could be assigned to this cause. He cited other statistics to this effect. The paper was discussed by Drs. Langdon, Taylor Mitchell and the essayist.

September 11, 1899.

SPECIMEN OF APPENDIX.

DR. EDWIN RICKETTS presented a specimen of an appendix taken from a boy, aged 17, who had had four attacks of appendicitis within the past year. On opening the abdomen he had twice punctured the superficial epigastric vein. The operation was somewhat difficult on account of the numerous and strong adhesions that existed. He was also compelled to remove a large piece of omentum to get at the appendix. The latter was found in about its normal position, but subperitoneal. The appendix was found to be doubled on itself.

DR. C. A. L. REED was interested in the statement that the appendix was subperitoneal. He himself had had a number of cases in which the membrane had seemed to be peritoneum, but was afterward found to be adventitious membrane.

DYSPNEA FROM GLANDS IN LARYNX.

DR. S. E. ALLEN reported the case of a boy 4 years of age, who had been brought to the Cincinnati Hospital the latter part of March. For four months previously the child, whenever handled or irritated, had suddenly developed severe attacks of dyspnea. Examination of the larynx was negative. An esophageal bougie passed readily into the stomach. A tracheotomy was done, but nothing found. The wound healed readily and the child was sent home in practically the same condition as when it entered. He died suddenly about one month later. Post-mortem examination showed a large mass of glands about the trachea, one of which had greatly softened and had ulcerated into the trachea.

MASTOID DISEASE.

The second case reported by Dr. Allen was one of mastoid disease. The patient, an adult male, gave a history of a discharge from the ear since infancy. Eight months ago facial paralysis developed. There were no mental symptoms. On opening the mastoid he had found this bone necrotic, the entire top of the tympanic cavity and of the antrum wanting, so that a probe could be passed upward in the cerebral cavity for a considerable distance. Anteriorly the necrosis continued as far as the sheath of the carotid, which was opened. Bleeding was readily controlled by a small piece of gauze. The man died four days after the operation.

GUMMA.

DR. ED. SHIELDS presented a girl about 11 years of age, with a small tumor formation at the left sternoclavicular junction. The patient had just come under his observation that day. Four years before he had treated the mother for serpinginous syphilide. He thought that the tumor was a gumma. At any rate, he proposed to treat the child on that line and will report the result to the Academy at some future meeting. He intends giving 1 gr. of blue ointment in capsules three times daily.

DR. ALBERT FRIEBERG some years ago encountered a similar condition, but on operating found a tubercular caries which had necessitated removing a considerable portion of the clavicle.

AMPUTATIONS IN THE VERY AGED.

DR. J. C. OLIVER read the paper of the evening. Several cases were reported. The first, aged 80, had met with an injury to her left shoulder, supposed to be a dislocation. Six weeks later spontaneous fracture of the upper third of the humerus occurred, and on examination a tumor was found which was diagnosed as an osteosarcoma. Chloroform was used and the patient to all intents and purposes withstood its effects as well as a much younger person would have done. Amputation of the arm and of a considerable portion of the shoulder was made, with good recovery.

The second patient was aged 88, and was afflicted with gangrene of the great toe of the right foot. Gradually the gangrene spread to the other toes of the foot and was soon followed by a line of demarcation. Amputation at the metatarsophalangeal joint was made under 2 per cent. cocaine anesthesia, and the stump closed perfectly after seven months. The essayist was inclined to the view that "a man is as old as his arteries," and believed these patients to be much younger physiologically than was determined by their years of life.

Cleveland Medical Society.

September 8, 1899.

COMBINED SARCOMA AND EPITHELIOMA.

DR. O. T. TROTMAN exhibited a specimen which had been diagnosed before operation as epithelioma of the cervix with fibroid uterus. Microscopic examination of the cervix, after hysterotomy, showed combined sarcoma and epithelioma, a very rare condition. The body of the organ contained an adenocarcinoma in the endometrium, and within the walls an almost pure myoma which showed beginning sarcomatous degeneration. He exhibited one other specimen which had before operation been diagnosed from its softness and rapid growth as possible sarcoma, but which proved to be almost pure myoma.

DR. W. H. HUMISTON gave the history of the case from which the last-mentioned tumor was removed. There had been metrorrhagia for the previous nine months, together with symptoms of a tumor. Abdominal hysterotomy was performed, practically bloodlessly, by means of clamping the ovarian and uterine vessels. There was no shock and recovery was prompt. He thought these tumors should be removed as soon as they attained perceptible size, because of the risk of malignant degeneration.

DISTENDED STOMACH.

DR. C. F. HOOVER reported a case of a man, aged 19 years, who suffered from pain in the cecal region and vomiting. Diagnosis of appendicitis was made, but after four or five days in bed the tenderness diminished and the fever disappeared. However, severe thirst persisted, the tongue was very dry and he vomited large quantities of thin green fluid. There was abdominal distension, more marked on the left side, with considerable prominence of the hypogastrium. The prominence on the left side was dull on percussion, and by pressure a very distinct succussion sound could be elicited. A day later the symptoms became very much worse and death occurred. At the necropsy the tumor was found to be simply a distended stomach which practically filled the whole abdominal cavity. The appendix had sloughed off and lay up behind the cecum. There was no free pus in the peritoneum, but some along the ascending colon. No anatomic basis for the dilation of the stomach was found. A few cases of acute dilation of the stomach without apparent cause have been reported.

DR. R. J. WENNER remarked that Dr. Hoover's case furnished a strong argument for operation in appendicitis within twenty-four hours after the diagnosis was made. He reported a case of dilation of the stomach in a young man who had been shot through the dorsal region of the spine, and two other cases which followed directly on an attack of typhoid and in which stenosis of the pylorus existed.

DR. H. L. SPENCE quoted a recent report of a case of acute dilation of the stomach without apparent cause, which was followed in a few days, in spite of all treatment, by death in collapse. No mechanical cause could be found.

DR. C. F. HOOVER remarked that stomachs are generally contracted in typhoid, and that he had never seen dilation mentioned as a sequel of that disease. He also noted a case in which the patient died of collapse a short time after the passage of a stomach-tube, and said that it was perfectly clear that a stomach-tube should never be passed without some clear indication, as the sudden inhibition of the vagus may cause death.

RUPTURED ECOTIC GESTATION.

DR. CHARLES TANNER of Wilkoughby reported a typical case of ruptured ectopic gestation with sudden death.

DR. HUMISTON gave it as his opinion that it was never too late to operate in such cases, and reported a grave case in which a successful outcome was possible by immediately finding and clamping the ruptured tube just as soon as incision was completed.

HIP DISLOCATIONS.

DR. C. A. HAMANN presented a case of a boy, 8 years old, who had fallen from a wagon, striking on his hip. He was able to walk after the accident, but in a day or two went to bed because of severe pain. When seen at the end of two weeks the leg was held in a flexed position, with the arch of the lumbar spine that is seen with coxitis. There was considerable fever and emaciation. The leg was extended with weights, and allowed to remain in this position for five or six days. There was no

improvement and the temperature still rose in the evenings. An abscess then formed in Scarpa's triangle. The pus was not that of a cold abscess. The case was found to be one of acute osteomyelitis of the inferior spine of the ilium and of the pubis. There was no evidence of hip-joint disease. After curettement the abscess rapidly closed. Staphylococci were found in the pus, but no tubercle bacilli.

Dr. W. E. WITT remarked that hip-joint disease could be eliminated from the diagnosis of this case because of the complete flexion of the limb. Even if the joint had been affected the opening of the capsule would not have been justifiable, because of the danger of fresh infection of the joint.

Dr. C. A. HAMANN also showed a case of dislocation upward of the outer end of the clavicle, caused by a fall from a freight train, the man striking on his head and shoulder. He noted that, while this dislocation is easily reduced, it is difficult to retain in position, and considerable deformity usually results. The best treatment is to apply a compress and then strips of adhesive plaster firmly bound over the chest anteriorly and posteriorly, covered by a posterior figure-of-eight bandage.

Dr. C. J. ALLBRIGHT had had poor results in treating these dislocations. He noted that the chief feature in the deformity was contraction of the trapezius muscle and that placing the patient prone on his back relaxed this muscle entirely and aided in securing a good result.

Dr. WERT reported four instances illustrating the necessity of making a complete examination in every case. The first had been referred to him as one of infantile paralysis, but on examination proved to be congenital dislocation of the left hip. Another supposed case of spinal disease proved to be congenital dislocation of both hips. The third case of supposed Pott's disease was found to have the same condition. In these cases, where there exists an acetabulum and a head of the femur, a good result can be obtained, but in many cases these structures are absent and cure is practically impossible.

RENAL CALCULUS.

Dr. L. B. TUCKERMAN reported a case of removal of a renal calculus (when determination of the organ affected had been made by the ureteral catheter).

Dr. R. J. WENNER noted that the segregator would probably have performed the same service equally well without danger of infecting the sound kidney.

Detroit Medical and Library Association.

Sept 8, 1899.

SURGICAL TREATMENT OF INTERNAL HEMORRHOIDS.

Dr. W. F. METCALF, in a paper on this subject, said in part: The surgical treatment of internal hemorrhoids is satisfactory, but to secure the best results all abnormal conditions of the genito-urinary organs and of the whole digestive tract must be corrected, and in many cases the habits of living must be changed; hemorrhoids are frequently an important etiologic factor in disease, and the methods advocated by many authors are unnecessarily painful. The objections to the method of ligation en masse are that sloughing is produced, that the subsequent pain is too great, that it is unnecessary. The following method in uncomplicated cases is preferable: Thorough physic two days before, and a gentle physic the day before operation should be given, also a high enema the night before and an ordinary one the morning of operation. The patient should be thoroughly anesthetized and placed in the dorsal position, when any genito-urinary work required may be done before the rectum is touched.

The author favors the Pratt speculum. After adjusting the speculum so that a pile tumor presents between the separated blades, the mucous membrane covering the dilated vein extremities is removed with a sharp-pointed scissors curved upon the flat. These vein extremities are then clipped off. If there be but a small amount of fibrous tissue, this is all that is necessary. If the tumor contains much fibrous tissue, it should be cut off smoothly from the surface of the muscle. If a vessel spurts, an artery forceps is placed on it. The other tumors are treated in the same manner. All forceps are now removed, the sphincters gently but thoroughly dilated and the denuded surfaces examined for arterial bleeding. If any points are found they are again secured by fine-pointed artery forceps, and ligated with fine catgut. This ligation is seldom necessary

as the artery freed from the fibrous tissue retracts, and its intima being wounded by the forceps, its lumen is closed. The tags of redundant skin about the anus are then clipped off. A plug of iodoform gauze or of wool covered with silk and dusted with iodoform or other antiseptic powder is inserted. This plug should be removed as soon as the patient is conscious of any pain. Its presence lessens capillary hemorrhage and its removal clears away any small clots which may have formed. Sterile gauze wrung out of water as hot as can be borne should be pressed against the anus until the patient is comfortable, when a larger compress should be secured firmly by a T-bandage. If the patient be a woman, morphin is seldom required after this operation. This method leaves strips of membrane longitudinal to the gut, attached to the skin margin and to the membrane above. From these strips new membrane will develop to cover the entire circumference in about a week. After the first day comfort and cleanliness are ensured by letting a stream of a saturated solution of boric acid play on the parts, the patient being placed on the side, on a rubber pad, and instructed to strain down slightly. Water need not be thrown within the sphincters. It is better not to pass anything into the rectum, until healing is well nigh complete, unless colic is troublesome, which may and should be relieved by passing a sterilized rectal tube. Stool is forced on the fifth day. When this is desired three ounces of carbolized sweet-oil is thrown into the rectum, a seditiv powder given at the same time, and two hours later an enema of a saturated boracic solution. Any irritable tags found around the anal margin at this time should be clipped off after injecting cocaine solution. Where the whole circumference of the rectum is diseased and prolapses, amputation of the redundant mucous membrane by the American modification of the Whitehead operation is advisable. The points necessary to be observed in the operation are: 1. Thorough dilatation of rectal sphincters. 2. Removal of all diseased tissue. 3. Line of incision at skin margin at such a point that mucous surface will not be exposed or skin drawn within the grasp of the external sphincter when healing is complete. 4. Cutting of longitudinal fibers of membrane to be brought down. 5. Freeing and pushing upon the circular fibers which form the internal sphincter. 6. Sutures of catgut which do not pierce the epidermal layer of skin, thus lessening tendency to spasm of underlying muscles. 7. Avoidance of crushing of edge of membrane to be attached to the skin. 8. Dilatation subsequent to complete healing. Observance of these points will insure a satisfactory result.

Methylene Blue As a Sedative in Insanity.

The history of the use of methylene blue in general therapeutics is similar in many respects to that of other auiline compounds. Early reports, backed by commercial interests, were indicative of its value as a general panacea for many of the ills of the flesh, but of recent years it has found an established though restricted field in a limited number of affections. Its value in malaria admits of little doubt and in migraine and other nervous affections evidence is slowly accumulating that will give it a recognized position among the hypnotics.

Recent studies by P. Bodoni of the University of Genoa (*Klinische Therapeutische Wochenschrift*, No. 21, 1899, p. 666) seem to show its wide applicability as a sedative in excited mental states. He reports some fourteen cases in which the remedy was tried; these included such conditions as simple acute mania, mania with furor, periodic mania, chronic mania, and the mania of chronic alcoholism, periodic melancholia, paranoia with delirium, hysteroclepsy, and puerperal mania. In all of these cases the remedy was administered by hypodermic injection into the gluteal muscles, in amount varying from one to one and one-half grains. Its sedative action became manifest within from three to six hours and usually persisted a day or, in some of the cases, even for three to four days. The quieting action was not attended by any narcotic effect and there were no unpleasant after-symptoms observed.

The cause for its action is not definitely understood. By analogy, bearing in mind the use of this substance in technical microscopy by reason of its affinity for nerve tissue (methods of Ehrlich, Nissl, etc.), it would appear that it has a specific action on these tissues during life. This, however, has been denied by some observers who are inclined to class the drug with the blood poisons, acetanilid, etc., and thus explain its pharmacologic action. The author believes that it should take its place with others of the hypnotics, such as chloral, amphenhydrate, trional, and even hyoscyamus.—*Medical News*.

THE

Journal of the American Medical Association

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance	\$ 5.00
Foreign Postage	00
Single Copies	10 Cents

In requesting change of address, give old as well as new location

Subscriptions may begin at any time and be sent to

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

No. 61 Market Street, Chicago, Illinois.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, 100 Washington St., Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting, of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

Those new members of the Association should send their annual subscription direct to the Treasurer, Dr. Henry P. Newman.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the Editor, and all communications relative to the business of the JOURNAL, proof-sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 61 Market Street Chicago.

Original communications are accepted with the understanding that they are exclusively contributed to this JOURNAL.

SATURDAY, SEPT. 23, 1899.

THE MANNER OF INFECTION IN BUBONIC PLAGUE.

The occurrence of epidemics of the plague in various places and the possibility that it may reach our own shores—a contingency which may come to pass at any day—shows clearly enough that this disease has much more than only a historical significance even for us.

Since the recent appearance of plague in India and China, the opportunities presented for thorough and scientific study of the disease have been used to exceedingly good advantage. We know that bubonic plague is caused by a bacillus which is pathogenic for animals, and that some of these animals, especially the rat, play an essential rôle in the local spread of this terribly fatal disease. While it is the accepted opinion that the disease is carried long distances by man himself, either in the person of patients or in infected articles of various kinds, yet the manner of extension in the epidemics thus started does not depend so much on direct contagion as on the intervention of certain of the lower animals.

According to the investigations of Hankin and of Simond¹ the rat certainly is the carrier of infection. The irregular extension in the cities and villages of India can not be explained as due to infection through the air and water. Cases will appear in houses both far and near from original centers of infection, and at the height of epidemics the spread is very capricious. In certain parts of Africa the onset of an epidemic is foretold by the natives from the death of large numbers of rats which then occurs, and when these animals begin to die the natives leave their huts. In Formosa the term "bubonic plague" literally means a disease of rats.

The identity of the disease in rats and in man in such cases has been established bacteriologically. Simond has found that in two cases plague developed in men after epidemics among rats on board ship. Simond also hopes that the recrudescences characteristic of plague epidemics depend on the appearance of new generations of rats.

The next question is: How does the disease spread from rat to rat and from rat to man? While an absolutely satisfactory explanation can not be given at the present time, there are a number of facts which speak in favor of the flea being the principal direct agent of infection. According to Simond, fleas abound on rats sick with plague; bacilli, like the bacillus of plague, have been found in the intestinal contents of such fleas; and the disease has been communicated experimentally to healthy rats through fleas from plague-stricken rats. The flea theory explains satisfactorily the partiality of plague for the inhabitants of the most unhygienic parts of cities, and also the manner in which infection may be carried in wearing apparel.

While this seems to be the usual mode of infection there are also other possibilities to be considered. It has been shown by suitable experiments that infection may occur through the digestive tract, although not readily. But the plague bacillus does not live long in water, and Childs² shows that the mesenteric glands are not enlarged in cases of plague in man. These facts argue against the digestive tract as the usual seat of infection. In the so-called plague pneumonia the infection is generally held to occur through inhalation, because of the principal localization of the bacillus in the lungs, but it has also been shown that the bacillus is readily destroyed on exposure to the air. Hence, it may be concluded that, in the vast majority of cases, infection with the plague bacillus takes place through the skin, the flea and possibly other insects being the most likely immediate carrier of the infection.

Viewed in the light of our present knowledge of the manner of infection it is quite apparent that certain districts of our cities, especially the larger, offer favorable conditions for the spread and maintenance of the plague should it ever be introduced. The preventive measures are to be directed against rats, parasites, and man. Simond recommends that ships should be fumigated so as to asphyxiate the rats, which should be treated with boiling water before removal and then other familiar methods of disinfection should be thoroughly employed.

INSUFFICIENCY OF THE LIVER.

The results of recent investigation would seem to indicate that the metabolic function of the liver is far more important than its secretory function—to make a literal rather than a scientific distinction. The pancreatic juice, in conjunction with the gastric and the intestinal juices, seems fully capable of satisfactorily

¹ Annales de l'Institut Pasteur, 1898, xii.² British Med. Jour., 1898.

affecting the processes of digestion without the aid of the bile, but failure in the metabolic activity of the liver results at once in the development of symptoms of intoxication. These disturbances are, as a rule, unattended with appreciable anatomic alterations, and are thus beyond actual demonstrative proof. In addition to the secretion of bile, the liver stores up glycogen, takes an active part in the formation of urea, and removes or neutralizes poisons contained in the portal blood and largely derived from the gastro-intestinal tract.

In a suggestive communication on hepatic insufficiency, Pick¹ discusses four states that he considers dependent on this condition: catarrhal jaundice, cholelithiasis, the uric acid diathesis and diabetes.

With regard to catarrhal jaundice, it has been assumed that functionally deranged liver-cells may return to the blood biliary constituents that they had previously secreted, and it has been thought that such a state of affairs might be brought about by either abnormal irritation of the secretory nerves of the liver or the presence in the circulating blood of toxic substances derived from without or generated by intestinal or pathogenic bacteria.

The formation of biliary calculi, which consist principally of cholesterin and biliary coloring matter in combination with calcium carbonate, is attributed to secretory disturbances, as it has been experimentally found that such concretions can—on long exposure to the action of the bile—be dissolved in the gall-bladder of dogs after ligation of the cystic duct.

Many cases of the uric acid diathesis may be viewed as an expression of hepatic insufficiency, from failure of conversion by the liver-cells of ammonium carbamate into urea, in consequence of the presence in the portal blood of toxic substances, derived from the intestinal tract. This explanation, also, may be applicable to many cases of neurasthenia attended with increased elimination of uric acid; and to the transitory or alimentary glycosuria and even mild diabetes occurring under like conditions, and attributable to failure on the part of the liver to retain its glycogen. Cases of diabetes in which the amount of sugar in the urine increases on a nitrogenous diet, with restriction of carbohydrates, may be looked on as dependent on hepatic insufficiency.

It is thought that hepatic insufficiency may be congenital or acquired, and that in the development of the latter variety intoxication from the intestinal tract plays a most important part. The ability of the liver to neutralize this intoxication is limited, and will vary with the character and the amount of the poisons generated. Insufficiency of the liver may be due also to organic disease. When due to intoxications from the intestinal tract and manifested by catarrhal jaundice, cholelithiasis, diabetes and the uric acid diathesis, alkalies yield most useful therapeutic results, and among these sodium salicylate has especially proved of service. Mineral waters may be taken with advantage, and further in-

toxication is to be prevented by making the diet a mixed one and restricting proteids in favor of carbohydrates, and increasing the motor activity of the intestine by mechanical and chemical means.

EOSINOPHILOUS BRONCHITIS.

The establishment of an eosinophilous bronchitis, by Hoffmann of Leipzig, rests on the occurrence of a bronchial catarrh in which the sputum is exceptionally rich in eosinophilous cells. The condition is now described somewhat more fully as a more or less distinct disease, by Teichmüller¹. Nothing is as yet known concerning its pathologic anatomy, because the disease is not fatal, and opportunity to study the morbid changes can only be secured through some accident. The real cause and the exact nature of this disease, as well as that of asthma, are unknown. The disease is a form of chronic bronchitis which, when undisturbed by treatment, is characterized by intermissions of good health; the patients do not suffer very acutely, and consequently they do not as a rule seek the aid of a physician until some time after the beginning of the symptoms. The complaints then made resemble wholly some of those characteristic mild degrees of asthma and of emphysema, or of any other form of bronchitis. There may be a more or less well-marked dyspnea. Whistling rhonchi associated with prolonged expiration are said to be frequently present over both lungs. Cough is rarely absent. The expectorate is transparent, slimy, rather thin and it does not resemble the thick, viscid asthmatic mucus. The especially characteristic peculiarity of the sputum is the presence of numerous eosinophilous cells, not only in but also between the little masses of mucus which have been spread out on the slide. In suitably stained preparations (0.5 per cent. alcoholic solution of eosin and saturated solution of methylene blue) these cells may be so numerous as to form red foci which are visible under very slight magnification; the only other disease in which they occur in such numbers is asthma. Typical Curschmann's spirals are not present, but rudimentary spirals without the central thread are occasionally observed. Fever is rarely present. The patients commonly complain of general weakness.

The diagnosis is easy for the physician who is in the habit of examining the sputum of all patients who present symptoms pointing to the respiratory tract. He who has no time for examining the sputum can not with certainty diagnose eosinophilous bronchitis; such cases, as well as cases of beginning tuberculosis will often pass through his hands under an erroneous diagnosis. The differential diagnosis between eosinophilous bronchitis and asthma is not difficult provided the conception of asthma be limited to attacks of dyspnea with peculiar expectoration and emphysematous distension of the lungs.

The prognosis is good in all cases that live under reasonably good hygienic conditions. Gymnastic and

¹ Wiener Klin. Wochn., April 8, p. 697.

¹ Deutsche Arch. f. Klin. Med., 1899, 63, 444.

hydrotherapeutic directions suffice for treatment. Short, cold douches or warm baths followed by cold sheets must be used. The only drug to be used is iodid of potassium in those cases in which there is reason to believe that the bronchitis in some way rests on a luetic basis. Teichmüller emphasizes the necessity of measures to improve the general physical condition of the patients.

UNIFORM MEDICAL LEGISLATION.

Last June the Wayne County Medical Society—Detroit, Mich.—appointed a committee for the purpose of initiating a movement looking to the creation of a national board of health or, in some way, to secure uniform legislation in every state. The committee made its report on September 14, and in its report says that it sent circulars to fifty-one states and territories, in which replies were asked to seven questions—the most important of these being as follows:

“Would you be inclined to favorably consider the plan of entering into a state of reciprocity with other states which have practically the same requirements for the license of practicing medicine as your state has?”

“Would you join in the efforts in working out a memorandum to be presented to the legislative bodies of the different states with the view of introducing a bill as to the subject-matter, and would your secretary co-operate with us?”

The committee received answers from thirty-six states and three territories. Thirty-four of the answers were favorable, showing almost unanimity. The unfavorable answers were accompanied by explanations which made it not at all impossible to overcome the difficulty. While the committee recognizes the existence of the National Confederation of State Medical and Examining Boards, it believes that the state medical societies of the country ought to act separately, at least at the beginning. As the committee was instructed to continue, we hope it may be able to accomplish its object so that all states shall have like medical laws, with reciprocity. There is certainly a need of a different system of licensure for the control of medical practice than the unequal one that now exists in the different states. It seems hardly just to compel a physician who desires to move from one part of his own country to another, to pass an examination when that move happens to carry him into another state. Few men, no matter how well qualified, are able to pass a fairly good examination in all the fundamental branches. A technical knowledge—that which can be expressed in words—of all such fundamental branches as anatomy, physiology, chemistry, etc., is held by but few men. Men in special lines of work are more decidedly liable to get rusty in other branches, and would make sorry work of passing an examination that would have been easy in their early professional life. The possibility of doing away with this anomaly in our system of regulating the practice of medicine is not hopeless. It must come, however, through concerted action on the part of the different

states, national legislation on the subject being probably unattainable. To accomplish this reform a central body must be created, through which the different state bodies shall act, and this central body must be created by the states themselves. The first thing to be done, therefore, is to get each state to take action, and this, as we understand it, is what the Wayne County Medical Society is attempting to do. One thing must be recognized at the beginning, however, and that is that the united action of the states will only come by raising the standard in those states that have now too lax a law, and not by a retrograde movement on the part of any. It might be well to here call attention to a resolution adopted by the AMERICAN MEDICAL ASSOCIATION at its meeting in 1894, viz.: “That we request the state societies to unite in establishing a uniform standard of professional requirement for admission to the practice of medicine, and to aid, as far as possible, in advancing the scientific status of the same by the appointment of state examining boards independent of the teaching faculties of medical colleges.”

BOVINE VS. HUMAN TUBERCULOSIS.

Dr. Edward Moore, a prominent veterinary surgeon of Albany, N. Y., published in the last two issues of the *N. Y. Medical Journal*, a rather long article on human and bovine tuberculosis. In this he takes a position directly in opposition to that of leading sanitarians of the day, in that he holds that bovine tuberculosis is not transmittable to men, and vice versa, and that the bacillus has become so modified by habitat as to become specifically distinct. In support of this view, besides his own experience and observation for many years, he quotes Dr. Theobald Smith, certainly no mean authority, who has expressed himself as recognizing, at least provisionally, a distinction between the respective germs of human and bovine tuberculosis. Dr. Moore denies that there has been any positive or satisfactory evidence of the transmission of bovine tuberculosis to man, or from man to cattle. Dr. Cooper Curtice, in 1897, examined some 210 cattle in the vicinity of the Saranac Lake Sanitarium, feeding in the pastures where the aggregated consumptives took their exercise, and found no tuberculosis. He also published letters from various persons of wide experience and observation, including the veterinarian of the Massachusetts Agricultural College and the director of the New Jersey Agricultural Experiment Station, who testify in accordance with his views. Dr. Moore's publication is likely to call attention to the need of more thorough study of this subject, and to the fact, if it is such, that satisfactory evidence of intraspecific transmission of tuberculosis between man and cattle is still lacking. It is surprising, indeed, if this is so, since physicians and public health authorities have been acting constantly and consistently as if the reverse were true.

HOW SHALL THE NEW REMEDY BE RECEIVED.

The new remedy, to be of value to the busy practitioner, must be accompanied by the report of careful

studies as to its mode of action and its therapeutic indications. Who shall furnish this? The pharmacologists alone after painstaking experiment may authoritatively report on the physiologic action of the new product. These are not numerous, and, excepting a few now finding a place in the schools, can hardly thrive beyond the confines of the laboratories of the great manufacturing pharmacists. As a rule the profession may safely rely for pharmacologic information on the reports of the experimenters employed by the large manufacturers. In the future, however, the laboratories of the schools will contribute largely to unbiased pharmacology. The physician with an extensive hospital service is best able to effectively determine the therapeutic value of the new drug. It is the rule to look askance on the laudatory clinical report from the unknown practitioner of the small village. This is not because the small place has a monopoly on cupidity, for it is well known that the venal of all ranks tend strongly to congregate in the cities, but unfortunately because experience teaches that the majority of these testimonials come from obscurity. At times this is due to the non-existence of the accredited writer, again to the overwhelming need of some who are not overscrupulous, and again to the vanity of the would-be shining light. Obscurity nearly always indicates lack of adequate opportunity to render judgment of value, even when the requisite ability to draw valid conclusions from well-established observations is not lacking. Hence, the only reports of the properties of new remedies to which the physician should give heed are those emanating from pharmacologists of established reputation and from clinicians of known wide opportunity and unquestioned probity. By adhering to this rule the profession will compel the manufacturer to produce such evidence and the common and outworn testimonial will be condemned to well-merited oblivion.

THE PRESENCE OF DIPHTHERIA BACILLI IN HEALTHY PERSONS.

The statement that a micro-organism can be regarded as the cause of a definite disease only when it is found exclusively in the disease in question, which must then be present, has long ago been modified. We know that the presence of the cause of a disease does not necessarily mean development of the disease, because there are conditions which prevent this. A bacterium may therefore be regarded as the cause of a certain disease when it is constantly found in connection with the disease, and as a rule only in this disease. It is assumed that the occurrence of the bacterium without the development of the corresponding disease is relatively rare. This question has rapidly come to the fore in connection with diphtheria. We know that the bacillus of diphtheria is found in the bodies of patients free from diphtheria, as well as in absolutely healthy persons. Recently Kober¹ reviewed the literature bearing on the distribution of the diphtheria bacillus on the mucous membrane of the mouth and pharynx of healthy persons. The facts reported in the literature show that the dip-

theria bacillus has been found in persons who have not come in contact with diphtheria patients—in 7 per cent. in the investigated cases. Kober studied 600 persons and found the diphtheria bacillus present in 2.5 per cent. In 15 of these, close examination revealed that the persons had come in more or less intimate contact with diphtheria patients, so that the occurrence of diphtheria bacilli in the oral cavity of individuals who have not come into contact with diphtheria patients is reduced to 0.83 per cent. All the cultures from the first set of cases were pathogenic to animals, none of the last set were. The observations recorded in the literature would indicate that diphtheria bacilli occur in the oral cavity of 18.8 per cent. of persons associated with diphtheria patients. Kober carefully investigated 123 persons who were in more or less close relation to the disease, and found the bacillus only ten times, that is to say, in 8 per cent.

PUBLIC ACCUSATIONS AGAINST HOSPITALS.

A medical officer in New York City has recently made a public accusation against the surgical staff of the local hospitals, that operations are needlessly and carelessly performed in these institutions. The charge has naturally been resented, not only by the accused surgeons but by at least one of the leading lay papers, which editorially takes up the gauntlet in favor of the hospital staffs. The accusation appears to have been a general one, though, so far as stated, it is based on the coroner's physicians' interpretation of a case where he claims the diagnosis was wrong and the operation unnecessary, and another where he charges neglect in a case of fractured skull. It would seem, at least, an inconsiderate act for a physician holding an official position to offer general criticism involving, as it were, the professional character of men whose standing in the profession is certainly higher than his own, without ample proof to support his assertions. There does not appear to be any very adequate grounds so far as the facts have been published for even suggesting any mistake, much less any needless recklessness on the part of the operating surgeon. If the criticism is aimed at the regular visiting staff of the great hospitals of a medical center like New York City it has of itself little weight, for it is the condemnation by a comparatively obscure medical man of the leaders of the profession. Much more than his mere assertion will be needed to give it credence. If it is aimed at the house staffs, the same is true, for they are under the direct supervision of these leaders, and a derogation of the one implies that of the other also. The apparently wholesale character of the accusation also makes it really undeserving of serious consideration, except in so far as it is likely to have the effect of impairing public confidence in the public and private charitable institutions. Where these are not demoralized by the political control, one may naturally question the unfavorable opinions of a political appointee in regard to them. It is, as Dr. Shradz says in a published interview, not only unprofessional but also against public policy that the confidence in our hospitals and in the ability of the hospital attendants should

¹ Zft. f. Hygiene und Infektionskrankheiten, 1896, xxxi.

be inconsiderately questioned. In no other country is it so common to exaggerate faults and "wash dirty linen" in public as it is here, and there are some, we regret to say, that appear to consider it meritorious to besmirch and defile, in order, it would seem, only to exploit their own self-righteousness. Reckless accusations, generally applied, can sometimes be thus best interpreted.

QUARANTINE OF THE TUBERCULOUS.

The California State Board of Health has, it is stated, unanimously passed a resolution to the effect that it consider the propriety of quarantining against the entry of human beings or domestic animals suffering with tuberculosis. It is to be hoped that this consideration will be thorough and deliberate, and that no hasty action will be taken. At the present time many of us can hardly be said to be in a judicial state of mind on the subject of tuberculosis. The pendulum has swung nearly or quite to the extreme in one direction, as shown by the statements made in the lay and medical publications of the day, in regard to the excessive contagiousness of the disease and the ratio of deaths from this cause in the general mortality. We have repeatedly seen it stated that consumption is the most contagious of diseases, that it is responsible for one-third of all deaths from all causes, that it did not exist in various regions until carried there by health-seekers, that trained nurses would rather care for smallpox patients than for consumptives, with other still more extreme utterances given out from time to time. The result is a sort of medical panic which is being transmitted to the public, and the consequences of which may be serious injustice and hardship to an already afflicted class. So far as we have been able to ascertain, consumption is not in the proper sense of the word *highly* contagious. We find that in most civilized countries its mortality does not exceed from 9 to 12 per cent. of the total, and, considering all things, more nearly the smaller than the larger figures; that it has existed more or less in nearly all regions; that its increasing death-rate in health resorts is largely due to the immigration of diseased individuals, and would be mostly confined to them if ordinary reasonable precautions were observed, and we have never yet met a nurse who preferred the contagion of smallpox to that of tuberculosis, even though protected by vaccination. Consumption does not spread from well conducted sanatoria, as is shown by experience. Why should the residents in a climate like that of California, where those infected with tuberculosis go to recover, suffer unduly from the disorder unless they neglect the needed precautions? And if this be so, why should they deny the benefit of it to those to whom it is supposed to be physical salvation? The resolution is not in the line of medical progress or philanthropy, nor do we believe it to be in the line of true sanitation. To make an effective quarantine against tuberculosis, not only the openly manifest cases of tuberculosis must be excluded, but the incipient and latent ones also, and this would be a task beyond the abilities of any state authorities. It would be more effective as well as humane to regulate unsanitary habits and conditions, prevent indiscriminate expectorations in public conveyances and rooms, use proper methods of disinfection,

where needed, and instruct the public as to the proper care of themselves, than to create a panic by proposing wholesale quarantine and exaggerating the danger and contagiousness of the disease. We have learned that it is contagious or infectious, or both, to a certain degree, but we have also learned that its contagion or infection is ineffective in nine cases out of ten, or we should all be its victims. Perhaps we should better say it is ineffective in 999 cases out of 1000, for we must all be almost daily exposed to it in our large centers of population. Under such circumstances, while doing everything that is reasonable to check the scourge, why should we excite exaggerated fears and call for inconsiderate and panicky legislation. If California is really becoming dangerously infected with tuberculosis, its authorities can publish the fact and save the expense of quarantine: the publication would be just as effective as the other. Heretofore it has only disseminated far and wide the accounts of its glorious climate for pulmonary invalids, and the course now suggested will, if adopted, seem to the world a surprising change of front.

Medical News.

THE HEALTH Board of Detroit, Mich., is endeavoring to suppress faith healers in that city.

THE SPANISH *Illustracion* suggests supplementing the military cordon around Oporto with a cordon of cats.

PROFESSORS Froesch and Kossel of Berlin have been sent by the German Government to study the plague at Oporto.

THE EVANSTON (Ill.) hospital has established a training school for nurses in connection with the regular work of the institution.

DR. A. RAVOGLI, Italian Consul for Cincinnati, Ohio, has just returned from Europe. While abroad he was knighted by King Humbert.

It is reported that the managers of the Chester County (Pa.) Hospital have started a movement for the erection of a home for nurses, to cost \$5000.

BY THE will of Philip Gruner, whose death recently occurred in Germany, a provisional bequest of \$1000 has been left the German Hospital of Philadelphia.

THE NEW chapel of the St. Joseph's Hospital, Bloomington, Ill., was formally dedicated September 14. The cost of the building with its furnishings was \$9,000.

THE AUTUMN maneuvers of the French army have been omitted this year on account of a serious epizootic of foot and mouth disease prevailing in the regions selected.

DR. JOHN C. WISE, fleet surgeon to the command under Admiral George Dewey, will be the guest of honor at the eighth annual convention of army surgeons, Kansas City, September 27-28.

DR. L. M. ALLEN, for the past six years connected with the Maryland University Lying-In-Hospital, has been appointed associate professor of obstetrics in the University of Maryland School of Science.

OWING to the resignation of Dr. Charles B. Penrose, as professor of gynecology in the University of Pennsylvania, last spring, this chair is still vacant. There are said to be sixteen applicants for the position.

A GERMAN daily states that Professor Quincke of Kiel sent in his resignation as chief of the medical clinic.

because the faculties and accommodations are so inadequate and his repeated protests have been persistently ignored.

THE **FREDERICK DOUGLASS** Memorial Hospital—colored—Philadelphia, has issued an appeal for subscriptions looking toward the purchase of a site and the erection of a larger and modern hospital building. The sum asked for is \$75,000.

UNIFORM nomenclature of the causes of death was one of the subjects exhaustively discussed at the Biennial International Congress of Statistics, which opened at Christiania, September 4. The chief address on the subject was by Bertillon.

A **DESPATCH** states that Ambassador Choate has advised the State Department that Her Majesty's Secretary of State for War has accepted the invitation of the Military Surgeons of the United States, and has deputed Mr. McWaters, R.A.M. Corps, to attend.

A SINGULAR case of death, illustrative of the danger of keeping household pets in living rooms, is reported from Washington, D. C. A parrot of mischief-making proclivities removed the lava tip from a gas burner and as a result caused the asphyxiation of a young woman of 23 years.

THE **MEXICAN** Academy of Medicine has offered a prize of \$500 for the best work on either exploratory laparotomy or tuberculosis, or both. Competing articles must be in Spanish, and be received by the secretary, L. T. Alcalá, Cuadrante de Santa Catalina, 12, before October, 1900.

A SUITE of rooms has just been completed at the University of Pennsylvania Hospital, specially constructed and equipped with all the modern apparatus necessary for operations. The suite consists of an operating-room proper, a recovery-room, and one exclusively for the surgeon's use.

THE **NEFF** Home for Convalescents, situated at Price Hill, Cincinnati, Ohio, has just been opened. The accommodations are limited to twenty. It is purposed to carry out the principles of the Weir-Mitchell rest cure. Dr. Frank Hendley, late superintendent of the Cincinnati Hospital, will be in charge.

WE NOTE that *El Progreso Medico* of Havana, Cuba, speaks most enthusiastically of the great work accomplished by Dr. C. K. Furbusch of the American army, in reorganizing the hospitals of Havana and founding a training-school for nurses, in the short space of three months before he was transferred to Manila.

DR. DANIEL R. BROWER of Chicago addressed the Buffalo (N. Y.) Academy of Medicine, September 12, by invitation, on the "Medical Aspect of Crime." There were present, as guests of the Academy, a number of prominent lawyers and clergymen. The doctor urged the asexualizing of the habitual criminal.

PROF. SIMON FLEXNER, who recently severed his connection with the Johns Hopkins to assume the chair of pathology in the University of Pennsylvania, as noted in the *JOURNAL* at that time, and who for the past few months has been studying tropical diseases in the Philippines, has returned to Philadelphia to assume his duties at the opening session.

BY THE WILL of the late Judge Richard Prendergast, Chicago, a "rest-cure home" will be founded for the benefit of persons suffering from nervous disorders. The institution will occupy the former summer residence of the donor, consisting of 150 acres at Wheaton, Ill., and will be in charge of a community of Sisters of Char-

ity. It will be known as St. Winifred's Rest, in honor of the wife of the testator.

TO ESCAPE the strict quarantine measures, the captain of the *Albertville*, arriving at Antwerp from the Congo, had a couple of negroes suffering from smallpox thrown overboard. A passenger reported the occurrence to the authorities, but the captain managed to escape to England. The Belgian Government has requested his arrest.

THE SIXTH annual meeting of the Detroit (Mich.) Physicians' Protective Association was held September 12, and reports submitted showing the organization in a very satisfactory condition. Officers were elected as follows: President, Guy L. Kiefer; vice-president, D. L. Walmsley; secretary, A. P. Bidde; treasurer, S. H. Knight.

THE EIGHTEENTH annual session of the College of Physicians and Surgeons, Chicago—Medical Department of the University of Illinois—opened September 19. Other medical institutions which have begun their winter's work are the Kansas City Medical College, and the University Medical College, Kansas City, Mo., and the Medico-Chirurgical College of Philadelphia.

DR. JOHN G. REED, Cincinnati, Ohio, has issued a letter to the Cincinnati and Hamilton County medical fraternity, calling on physicians to band together and demand representation in the legislature, declaring that there should be one doctor elected to the legislature for every lawyer sent there. Dr. Reed advocates a political-medical organization with the hope of securing to the profession and the people the wise legislation so long contended for by the leading physicians of the state.

A BOLD robbery took place at the St. Joseph's Hospital, Philadelphia, during the past week. Owing to great improvements now going on at that institution, and the large number of employees about a burglar gained entrance to the office during the noon hour, broke open the office desk, and appropriated \$45. The man was seen entering the building and told one of the employees that should anyone inquire as to his whereabouts, he could be found on the roof, and so passed as an employee.

A PRELIMINARY meeting has been held and officers elected, the purpose of which is to form an association having for its object the erection of a hospital for orthodox Jews in Philadelphia. The initial meeting was composed for the most part of contributors to an orphan asylum now in existence in the lower section of the city, in which locality the proposed building will be erected. It is now proposed to hold a mass-meeting for the purpose of bringing the subject more properly before those who sanction the movement.

IN AN address before the recent German-speaking congress of anthropology, Virchow called attention to the dangers of substituting the "traditions of opinions" for the "traditions of facts," observing that they are especially misleading in anthropology and the sciences to which it is the handmaid. He ridiculed the way in which anthropology seems to have concentrated and restricted its attention to the skeleton, as if there were no nobler parts of the organism: "mutability of the type is far more important in respect to the brain and muscles than to the skeleton," adding that pathology is merely physiology under difficult circumstances.

DR. BRANDETH SYMONDS, medical examiner of the Mutual Life Insurance Company of New York, suggests that a course of six lectures be given in medical

colleges on "Instruction In Life Assurance Medicine," as follows: 1. Some instruction in vital statistics and the fundamentals of life insurance. 2. The relation of the examiner to the company and the applicant. 3. The facts concerning each disease, which are of importance from a life insurance standpoint. 4. Habits, occupations and employment. 5. The family record and heredity. 6. The physical examination, particularly with reference to the distinction between essentials and non-essentials. 7. The relations of examiner to the agent. 8. Frauds and fraudulent practices.

A MOVEMENT has been started among Philadelphia women, the aim of which is to wage war on disease, and its prevention by practical rules of hygiene. A meeting has been held, organization effected and a charter applied for. The organization will be known as the "Woman's Sanitary League of Pennsylvania." Its purpose is the advancement of sanitary science, the promotion of public health and good government, and the forming of country and local auxiliaries to extend the beneficial work. It is stated that the action of the St. Louis Board of Health in requiring the disinfection of all such materials as second-hand books and clothing is the precedent with which the committee presents its plan to the Philadelphia authorities. The subject of schools and school children, expectation, and the summer diseases of childhood will all come in for their share of consideration.

AS A RESULT of a series of experiments on dogs, turtles and frogs, Dr. Richard H. Cunningham of the Vanderbilt Clinic, New York City, has, it is said, come to the conclusion that death in the case of the electrocuted is not due to paralysis of the heart, but to fibrillary contraction of that organ, which results in collapse of the nervous system. In all cases of this character, it is claimed, death is preceded by a period of consciousness, during which the recipient of the shock feels, but without the sensation of pain. In seemingly sudden death from shock due to powerful currents, it is stated that the thorax in the case of the lower animals has been opened and the heart found still beating. From these experiments one would be led to the belief that persons coming in contact with charged electric wires might be resuscitated by appropriate remedies, "such as creating artificially a temporary circulation of a fluid capable of sustaining the heart and the nervous system until the heart has recovered sufficiently to maintain the circulation in the normal manner."

ACCORDING to the *Gazette Médicale de Paris*, Dr. Jorge, the director of the bacteriologic institute at Oporto, reported to the government early in July what he believed to be cases of the plague, and officially informed the authorities of the existence of the plague in Oporto, the 28th, but the epidemic was not announced by the government until August 15. Telegrams despatched by Spanish physicians resident in Oporto were not received by the addressees, and it is supposed they were detained by the authorities. The schools have been closed and all the navy medical officers who have had experience with the plague have been ordered to Oporto. The merchants and populace are furious against Dr. Jorge, and he has been obliged to be protected by a military escort when he appears on the street; several persons have been wounded in the manifestations against him. He has received more than fifty threatening letters. Dr. Heppenitz has been sent from Russia, by the Russian Plague Preventive Society, with 2000 vials of plague serum, and offers to establish a "serum fac-

tory." Despatches from St. Petersburg also announce that the plague has broken out in Samara, in south-eastern Russia, and the town of Tsarytzine has been surrounded by a military cordon.

Correspondence.

The Third International Periodical Congress of Obstetrics and Gynecology.

(Delayed Correspondence.)

AMSTERDAM, Aug. 16, 1899.

This delightful metropolis of the land of the sea has been the scene of interesting events to those who, during last week, were attendants on the Third International Periodical Congress of Gynecology and Obstetrics—a stately title, and one which everybody of course immediately contracts into "the Gynecology Congress," as it should be in this age of telegraphic brevity. But stately and solemn-sounding as was its title many came from many lands. It was interesting here, as in all similar international events, to see Kieff and Chicago, Tokio and Toulouse, Manchester and Madrid, Helsingfors and Rome, Stockholm and Nice, Paris and New York, Bucharest and Brussels, to say nothing of Barcelona and Cincinnati exchanging greetings with each other, and thus widening that amity which places the great profession of medicine above personal and political considerations. It was pleasant to feel that the civilized world as represented by the most advanced nations exemplified this lofty conception—and yet Germany was not there. Germany, the next-door-neighbor, sat on the fence and made faces while the splendid procession was marching to the tune of progress. Amsterdam and Griefswald did not exchange greetings. It seems that some time some Germans had been selected to fill some vacancies in some universities in Holland. Then some more Germans became candidates. Then some Dutchman had the temerity to intimate something about the propriety of Dutch professors for Dutch universities. This seemed to be very offensive to German professors, who could not understand why, if German interests so demanded, every professor of every other nationality should not quietly and smilingly remove himself from the face of the earth. Well, it so happened that the Dutchman who said something about Dutch professors for Dutch universities was selected by a Dutch committee on organization, to an important official position in a congress to be held in the Dutch metropolis. *Voilà!* Germany was in a huff. Everybody in Germany was personally offended. What would appease this righteous wrath? Could it be done? Yes, and easily. Holland might retain the congress and pay the expenses, but the Holland Committee on Organization and the Holland president would kindly efface themselves and Germany would confer on the *Paye Bas* the great distinction of furnishing the entire official personnel of the congress. It was about this time that a few of the corpuscles—good red blood-corpuscles of William of Orange—were found floating around in the little kingdom of the beautiful Wilhelmina, and Holland went on with the task herself, laboring all the while under the freezing frown of German disfavor. Well, never did a country extend to a scientific gathering such hospitality; never were better papers presented or more thoroughly discussed; never was there more enthusiasm; never were absentees missed so little.

The Congress was opened in the classic halls of the Ancient University of Amsterdam, with a scholarly address delivered in French, German, English, and Italian, by the learned president, Professor Treub, the trend of whose remarks was in the direction of conservatism. The audience was made up of representative men from practically every advanced country in the world. There were numerous representatives from the United States, among whom I noticed Drs. A. and E. A. Vander

Veer, Albany, N. Y.; Janovin, New York City; H. Gordon, Portland; A. Palmer Dudley, New York City; J. H. Carstens, Detroit, Mich.; J. M. Baldy, Philadelphia; G. J. Engelman, Boston; E. P. Davis, Philadelphia; L. H. Dunning, Indianapolis, Ind.; Clinton Cushing, Washington, D.C.; J. M. Withrow, Cincinnati, Ohio; A. F. A. King, Washington, D.C.; A. Goldspohn, Chicago; Geo. M. Edebohls, New York City; Henry D. Fry, Washington, D.C.; Ernest Laplace, Philadelphia, and H. Tuholsek, St. Louis, Mo. It is doubtful whether any other country outside of Holland and France had a larger delegation or a more interested one.

ALEXANDER'S OPERATION.

It is not within the purpose of a letter, such as this, to give a detailed account of the proceedings of the Congress, or to anticipate the publication of any of the valuable papers by giving a résumé of their contents. It may not be improper, however, to state that one of the earliest events of interest was the discussion of the paper by Dr. Goldspohn, in the course of which there was a free debate as to the present status of the Alexander operation. The special point of interest was the personal participation of Dr. Alexander himself in the debate. Tall, unostentatious, frank and commanding, this splendid type of the honest professional man quite captured the convention, by stating in effect that Alexander's operation was devised at a time when opening the peritoneal cavity was a more serious matter than at present, and that, therefore, much of the reason for its performance had passed away. He stated further that it ought not to be performed in irreducible retrodisplacements of the uterus, nor in those cases in which clearly reducible displacements are complicated with organic disease of the uterine appendages. In cases that fall within these limitations the comparatively simple operation is quite sufficient to effect a cure. It is needless to say that this clear statement of the purposes and limitations of the operation by its author served to place it on a more definite footing than it has heretofore enjoyed. I can not recall any person who has so much excuse as Dr. Alexander to plead for rescue from his friends, particularly from inconsiderate imitators in America, who are daily perpetrating a misapplication of his principles while they and the world are naturally holding him responsible for the unfortunate results.

OVARIAN PREGNANCY.

A very interesting report on the much-disputed ovarian pregnancy was presented by Mlle. Catherine van Tusschenbroek of Amsterdam, who also demonstrated a specimen which she had procured from the clinic of Professor Kouwer of Utrecht. The operation had followed rupture, with extensive hemorrhage into the peritoneal cavity, which occurred six weeks after the patient's last menstruation. At the time of the operation the uterus was found enlarged, the left ovary and tube normal, while at the right ovary was found a tumor as large as a walnut, to which blood-clots adhered. The right ovary and tube were removed. The tube was quite normal; the fimbriae were somewhat conglutinated, but the lumen was free. Pathologic adhesions between the ovary and the tube did not exist. The tumor and the ovary showed, near the top, the place of rupture, from which a ruddy fringe came forth. After being hardened the specimen was opened by a median section going through the fringed opening. By this section the gestation sac in the tumor was cut in two halves and an embryo appeared of about 12 mm. in length, fixed by a short and thick umbilical cord. Macroscopic inspection left no doubt that the case was one of ovarian pregnancy. Microscopic investigation showed that the impregnated ovum had developed within a Graafian follicle. That was proved by the fact that the wall of maternal tissue which surrounded the ovum showed the structure of the ruptured Graafian follicle—the well-known corpus luteum. Decidual transformation of the connective tissues in the ovisac was nowhere to be found. The fetal ele-

ments were quite the same as in normal uterine placentation. The fetal villi showed the plump and irregular forms which belonged to this early stage of pregnancy. Their epithelial investment consisted of two layers—Langhans' cells and the syncytium. The latter was in many places ciliated. The conclusions which Mlle. van Tusschenbroek came to were as follows: 1. Ovarian pregnancy was a fact. 2. Ovarian pregnancy meant pregnancy in a Graafian follicle. 3. The wall of the pregnant Graafian follicle not being transformed into decidual tissue they must conclude that for the implantation of the ovum Webster's decidual reaction was not a *conditio sine qua non*. 4. One piece showing a regular development of characteristic syncytium, they had a new and incontestable proof that syncytium had nothing to do with uterine or tubal epithelium and was an offspring of the fetal ectoblast.

FIBROMYOMATA, ETC.

The questions formally discussed were fibromyomata, antiseptics and technic, influence of posture on the size of the pelvis, and comparative indications for symphyseotomy, Cesarean section and artificial delivery. None of the Germans were present to read their promised addresses, but the gaps thus caused were easily bridged. There was a general chorus in favor of the abdominal route for operations, except for incipient cervical cancerous lesions, etc. Symphyseotomy found several champions. Doyen delivered one of the addresses on the surgical treatment of fibromyomata. He considers phlebitis, albuminuria, intestinal occlusion and malignant degeneration of the fibromatous uterus, imperious indications to operate. He restricts the vaginal route to a mobile uterus in multiparæ or extremely obese subjects. Since he has been using his crushers and substituted ligatures for forceps he has performed hysterectomy 52 times for fibromyomata: 27 vaginal, all recovered; 25 abdominal, all recovered but one, with complicating phlebitis of the limbs and calculus appendicitis. Schauta restricts the vaginal route to tumors which do not extend beyond the umbilicus and can be pushed down into the small pelvis. He operates only after failure of all other means to arrest accidents due to the tumors, and discountenances all curteting, supravaginal amputation and ovarian castration for fibromyomata. Delagenière reported five cases effectively relieved by the simple process of ligating the uterine arteries: no recurrence of the tumors during the three to one year since. The tendency of the Americans, Baldy, Carstens, and Tuholsek seemed to be in favor of supravaginal amputation in certain conditions, in which Treub and others concurred. Gordon expressed his disapproval of myomectomy as an insufficient operation. Treub reported a number of successes attained with injections of ergotin and electricity alone, which he advocates for more general adoption. He considers supravaginal ablation with a buried elastic ligature, the chosen method, and has followed it in 31 cases, with three failures.

POSTURE.

The addresses on posture were by Pinzini, Bué, and Walcher. The latter claims to have been the first who ever noted the influence of position on the size of the pelvis, and especially in the position with the legs hanging, or hyperextension. But Bué traces the first study of the subject to Crouzat. Pinzini reported tests with 102 parturient women, which established that assuming, in turn, the lithotomy position and then hyperextension, the promonto-subpubic diameter increased from 2 to 17 mm., averaging 7.5. Changing from the lithotomy to the obstetric position, the increase was 0 to 5 mm., and from the latter to hyperextension, the increase was from 2 to 12. The increase in the conjugate diameter from the obstetric to hyperextension, is larger with a deformed pelvis, averaging 8.7. The coccygo-pubic diameter in cadavers decreases 5.6 mm. on an average, changing from the first to the second position, and 9.2 from the second to hyperextension, a total of 9 to 26 mm. Pinard's experience has been that in 10 per cent. hyperextension does not enlarge the pelvis, and that in the rest the average

increase in the diameter is but 3 mm. Pestalozza observed that the small average of 5 mm. increase attained by hyperextension in his experience does not account for the undeniable clinical benefit derived from it, and he suggests that possibly the lowering of the symphysis, which he measured on cadavers and found averaged 3 cm., may be a factor in the result attained.

TECHNIC AND ANTISEPSIS.

In the discussion of technic, Doyen stated that after operations when he anticipated infection, he covered the patient with ice from the nipples to the pubis. He disinfects the region with very hot water, soap, sublimate and phenol at 2.5 per cent., and now uses glutol exclusively for his dusting powder. Richelet used to ascribe certain deaths, he stated, to "lack of resistance of the subject," but he now rejects this excuse and considers them all due to infection.

SYMPHYSEOTOMY, ETC.

The several addresses on symphyseotomy, etc., were by Pinard, Pestalozza, and Fancourt Barnes—the last-named not being present. The former observed that the most numerous cases of contracted pelvis are those with a promonto-pubic diameter not less than 6.5, and in these circumstances he prefers symphyseotomy as less dangerous than opening the abdomen and uterus, citing a case in which it was successfully performed on an open country road. He utterly rejects premature artificial delivery, embryotomy of a living child and any use of forceps or version involving a struggle between the fetal head and bony resistance. "Since antiseptics has come in, all these procedures should be abandoned." Pestalozza allowed certain conditions in private practice justifying premature artificial delivery, especially in young primiparæ. Symphyseotomy, on the other hand, he considers counterindicated in private practice, and that it should be reserved for multiparæ. With a pelvis under 7 cm. the dangers rapidly increase for mother and child. Between 8 and 8.5 it should only be preferred when the fetal head is rigid and forceps repeatedly used in vain. Under 7 cm., Cesarean section and embryotomy are the only operations to be considered, and the indications for the latter are becoming constantly more restricted, although in private practice it is at times still advisable, and also in case of fever, albuminuria, hematuria and eclampsia. Treub and Nijhoff consider symphyseotomy more dangerous than section, on account of the difficulty of keeping the region aseptic. Stijn Parve asserted that he had had only four fetuses die in fifty artificial deliveries, between the thirty-fourth and thirty-eighth week. Fancourt Barnes, in his communicated address, mentioned the extreme rarity of contracted or deformed pelvis at London, and declared that surgeons now lauding symphyseotomy would probably abandon it later. Jouin recommended, as an effective palliative operation for cancer of the uterus, singeing—"flaming"—the cancerous surfaces with alcohol for thirty to ninety seconds after curetting and thermocauterizing them, the vaginal walls protected with a thick coating of vaselin. Rapin called attention to a method of preventing threatening asphyxia of the child during difficult labor by introducing 500 to 600 c.c. of air filtered through cotton, into the amniotic cavity, through a rubber tube or urethral sound. In the three cases thus treated the child was born without any mucous accumulations or amniotic fluid in the respiratory passages, and he urges general adoption of the method, possibly using oxygen. The uterus is so protected at the time that he does not think there can be any danger of embolism. Van de Velde confirmed the value of subcutaneous injections of methylene blue in eclampsia and albuminuria, for both diagnosis and prognosis. Duret reported three cases of *inversio uteri* successfully operated on by his method (described in the *JOURNAL*, xxxii, p. 132). Doumer also confirmed the benefits derived from high-frequency and high-tension currents in congestive hyperplasia of the uterus, in which they promote resolution to a marked extent in addition to their action on the pains and amenorrhea.

LAPLACE FORCEPS IN INTESTINAL ANASTOMOSIS.

Dr. LaPlace of Philadelphia made a hit with his ingenious forceps for intestinal anastomosis. It is difficult to describe this device, which its inventor, with the assistance of Doyen, demonstrated to the open session of the Congress, and, during the succeeding days, privately to all who were interested, which seemed to include everybody.

OVARIAN TRANSPLANTATION.

Another American paper that attracted a vast amount of attention, but no discussion, was offered by Palmer Dudley of New York. It was short and consisted in the report of a case in which he had transplanted and implanted an ovary, not merely with the object of perpetuating the menstrual menses, but the fecundity of the patient. The procedure consisted in opening the fundus of the uterus and implanting into the incision thus made the normal ovary, which had been removed from its original site. This implantation was carried so deeply as to permit a zone of the ovary to project into the uterine cavity, the idea being that ovulation occurring from this disc of ovarian surface would subserve the purposes of fecundation. The sequel of the case has not yet been told, but there is every evidence that the surgical procedure is a *fait accompli*. The world will look forward with interest to the outcome of this meritorious experiment, and the hope that it may be the means of preserving the prospect of maternity of the unfortunate victims of destructive tubal disease.

It is impossible to even allude to all the valuable work presented at the memorable meeting—contributions that will enrich the literature of gynecology and abdominal surgery for more than a day.

The question of the next place of meeting was left in the hands of a committee. Bucharest's invitation was presented by Dr. Jonnesco, Barcelona's by Dr. Zargas, London's by Dr. Jessett, and that of the United States by Drs. Engelman and Reed. It seemed impracticable to settle the question at the time. The *ad interim* organization of the Congress in the United States, as determined by the Executive Body of Founders at Amsterdam, consists of Geo. F. Engelman, L. S. McMurtry, J. Whitridge Williams and Charles A. L. Reed, committee, and A. Palmer Dudley of New York City as secretary.

A serious question relating to the future character of the Congress is under advisement by the various national committees, and is to be disposed of by an *ad interim* international conference. It is practically a question of an open or a closed-door policy, and embraces a plan for the more definite organization of the Congress. The matter is in the hands of judicious men, and will be disposed of in accordance with the best interests of the Congress and of the status of gynecology and abdominal surgery in the scientific world. The splendid fruition that has been reaped at the three congresses already held leads to the hope of subsequent harvests.

CHARLES A. L. REED, M.D.

London.

(From Our Regular Correspondent.)

LONDON, ENG., Sept. 4, 1899.

SANITARY CONGRESS.

An interesting and valuable organization has just closed its session at Southampton. This is the annual congress organized by the Sanitary Institute—the great semi-official representative body of popular sanitary interest and progress. It has established a small museum of hygienic and sanitary apparatus, named in honor of the great sanitarian, the Parkes Museum, in London, where courses of lectures and demonstrations on hygienic subjects are given and examinations held to qualify for the post of sanitary inspector. As the guileless Neapolitan yearns for a fruit-stall, so almost every professional or semi-professional organization in England, medical, legal, commercial and educational, hankers after the control of some "pass"

public service examination—and the fees attaching thereto. One or two most prominent organizations might be mentioned both medical and educational, which, organized originally for the good of the profession, now regard the profession as existing chiefly for their benefit and exploit it accordingly. And the Sanitary Institute, invaluable as it is as a means of popular education in hygiene, seems to have fallen somewhat into this rut, if one may judge by the strong “permanent official” flavor of crudity and superficiality about some of its courses of lectures and of the speeches and discussions in the recent congress.

Some of the papers and the discussions following were admirably adapted to increase an intelligent public interest in sanitary measures, notably those of Prof. Percy Frankland, on water-supply; Dr. Arthur Newsholme, on the prevention of consumption, and a symposium on the re-housing of the poor displaced by the destruction of London slums.

LONDON'S WATER-SUPPLY.

But there were a few things which were crude to the verge of rankness. The address of the president, Sir William Preese, for example, began by alleging that Moses was not only the originator of all sanitary legislation, but one of the ablest and most advanced sanitarians the world had ever seen! Indeed, he doubted whether all our boasted progress had succeeded in bringing us up to his level. And, as a triumphant illustration, he declared that Moses directed garbage to be burned outside of the camp, and our most modern garbage crematory was only a tardy and incomplete fulfilment of this.

After asserting that Moses “invented” the idea of pure water, he took up the burning question of the water-supply of London, and calmly announced that the Thames would furnish an abundant supply of the purest water for fifty years to come. On what ground he bases this astonishing statement, other than that Moses did not forbid a city of 5,000,000 inhabitants—as his gift of prophesy would have easily enabled him to do if it had been necessary—to take its water-supply from a thirty-seven-inch trout-stream, does not appear in his address.

The man who will say this will say anything. The Thames valley is already practically one continuous village for thirty miles above London, and during the past month the water companies actually drew out of the river between one-half and two-thirds of the total flow of the stream. The water, by the mercy of Heaven and the luck of the British army, has remained fairly pure so far, but a simple sewage “leak” from some river town, village or even farm-house might at any moment escape the vigilance of the authorities and poison the metropolis before it was discovered, and even waiving all this, if a river has to be sucked half-dry to-day to supply a rapidly growing city, what will become of it fifty years hence? It is a simple problem in arithmetic. After this we are barely even surprised to find Sir William throwing contempt on the London County Council's masterly scheme for a supply from the Welsh Mountains, by an idiotic piece of clap-trap about “robbing gallant little Wales of her water.”

MEAT INSPECTION.

One of the papers in the Section of State Medicine, at the recent Portsmouth meeting of the British Medical Association, was an admirable review of the questions and methods of meat inspection, by Dr. Manby, health officer of Liverpool. He strongly urges the total abolition of the private slaughter-house, and instanced the German regulations as a model of their kind. In place of the original public slaughter-house, divided into small rooms or stalls, each of which was rented to a separate butcher at a fixed sum, the most modern arrangement is now to have one large hall in which all the slaughtering is done, each butcher simply using the space which happens to be vacant at the time. All this work is under the immediate supervision of a single official, any possible trickery is avoided, and the ventilation and cleansing arrangements are immensely simplified and

approved. The feature which at first would strike both English and American consumers somewhat strangely is the establishment of a “Freibank” or municipal meat market, to which is sent all meat which is distinctly inferior in general quality, on account, say, of the age of the animal, leanness or non-essential defects of that description, but which is not so dangerous to health as to require its absolute condemnation. The method is said to have worked extremely well and furnished a supply of sound and unobjectionable meat to the poorer classes at barely half the market price. To prevent any possible re-selling of the meat, not more than six pounds will be issued to any one person.

INSPECTION OF SCHOOLS.

Another excellent proposition made in this Section was that of Dr. Sydney Marsden, that all schools, not only public but private, should be placed under the control of the medical officer of health for inspection as to ventilation, air space, drainage arrangements, etc., in just the same way as factories. He pointed out that while a certain amount of supervision was now exercised over the public schools, there was practically none, except by purely voluntary arrangement, over the private schools, many of which being held in private houses and in rooms extremely ill-adapted for the continuous occupation of large classes of children were serious offenders in this regard. In Germany these schools are under state supervision and regulation, not only in these but in many other regards precisely as the state schools.

MEMORIALS.

A most excellent custom in respect to memorials is about to be followed at Newcastle, in memory of the late Dr. Nesham, who for many years occupied the chair of midwifery in the University of Durham. The form to be taken by the memorial will probably be a new hospital or the addition of a pavilion to the present building. The action is taken by the governors of the Hospital and some of the leading men of Newcastle, and is an excellent precedent for future extension. As a rule memorials to members of our hard-worked profession exist either in the hearts and memories of their patients or in the form of some chair, lectureship or ward for which they themselves have been devoted enough to furnish the funds. When the laity begin erecting monuments to us, it really looks as if our day is at last coming.

MEDICAL ATTENDANCE OF THE POOR.

A curious condition of affairs, of some practical interest to the profession, exists in regard to the medical attendance of the poor in Whitechapel. Some years ago the local guardians, in consequence of a scandal arising from grave delay in obtaining the services of the district medical officer, passed a regulation permitting any urgent case, which was unable to secure the services of the officer, to call in any practitioner in the neighborhood and send the bill for his visit to the Board of Guardians; accompanied by a statement of their previous call on the regular officer. This looks like a reasonable and even liberal arrangement, and the Guardians make a pompous report to the effect that it has worked admirably, has been “of immense advantage to the poor and no abuse has been made of it.”

LEAD-POISONING.

A curious survival of an ancient, but we had supposed practically extinct, cause of lead-poisoning, has recently put in an appearance in Paris. Symptoms of mild plumbism have been rather common and wide-spread of late in the French capital, and for some time the profession was quite at a loss as to either the character or cause. A few, however, proved so strikingly characteristic, that an energetic investigation was set on foot as to the source of the lead salts, and it was found that the bakers of the city were in the habit of using old building timber, floors, etc., for the purpose of heating their great ovens, and by the persistent use of large quantities of this sort of dust-containing material it is believed not merely lead but also copper and creosote has found its way into the in-

terior of the ovens. Loaves which are then placed in the ovens manage to rub off enough of these deposited materials from the floor and walls to, by long-continued ingestion, set up accumulation poisonings in those who eat them. The older form of this sort of contamination, it will be remembered, used to be the ancient Dutch oven, where the fire was lighted in the oven itself, and then after a sufficient heat had been obtained, the ashes swept out and the loaves put in their place. In this way much larger amounts of lead and copper were introduced and some of the poisonings were very severe, so much so that the use of such fuel was forbidden by law in many Continental cities. The regulation has now been revived by the Paris Council and extended to the use of such wood or boards anywhere about ovens or furnaces.

Canada.

(From *Gaz. Regular Correspondent.*)

TORONTO, Sept. 16, 1899.

TO STUDY BERI-BERI.

It is said that Dr. Hamilton K. Wright—McGill '95—has received through Mr. Chamberlain, Colonial Secretary, an appointment as pathologist to the Straits Settlements, with specific instructions to more especially study beri-beri. Shortly after graduation, Dr. Wright received the appointment of medical registrar at the Royal Victoria Hospital, and in 1897 gained one of the exhibitor's grants of the British Medical Association for his researches on the pathology of the nervous system. He also obtained, in the same year, the John Lucas Walker exhibition in pathology, at the University of Cambridge. With the assistance of these, he further undertook valuable researches in the nervous system in Cambridge and Heidelberg, and in the following year received the appointment as pathologist to the Claybury Asylum in Essex, England, the largest institution of its kind in Great Britain, if not in the world. His work in that institution and its good results brought him to the attention of the medical advisers of the colonial office, who recommended him for his recent appointment.

MEDICAL COMMISSION IN CAPITAL CRIME AND INSANITY.

Dr. James Russell, medical superintendent of the Insane Asylum, Hamilton, Ont., contends for the appointment of such a commission, in a recent article, read before the Ontario Medical Association, on "The Plea of Insanity in Medical Jurisprudence." This is the outcome of long thought and a careful study of the whole subject and an experience extending over a considerable number of years in giving expert evidence in these cases. This commission should be composed of men of high standing and long experience in their profession, appointed by the Crown, for the purpose of examining all prisoners charged with a capital offense, and for whom the plea of insanity has been entered. Dr. Russell also thinks that when insanity is alleged, a sufficient period of time should be allowed to elapse between the perpetration of the criminal act and the trial of the accused, so that the examiners may be enabled to study the nature and progress of the case, on which to base conclusions that will not be subject to any doubt. Were these suggestions followed up, all unseemly conflict of medical evidence would be abolished; and the public mind would be satisfied that justice had been done and the law vindicated. There is a growing feeling in the public mind of Canada, that too many of these criminals escape merited punishment by the successful manner in which the insanity plea is urged in court, and any measure such as the appointment of a medical commission of this character and scope that would tend to increase confidence in the integrity of our courts, should receive all due consideration.

OVERCROWDING OF THE INSANE IN PRINCE EDWARD ISLAND.

Both the professional and lay minds in this staunch little province are being considerably agitated over the construction

of an "annex" to the Provincial Asylum for the Insane. Some 7½ years ago, the grand jury of that Province, directed attention to the overcrowded state of the asylum building, but the government did nothing until about four years thereafter when it placed a number of the inmates of the poorhouse under the same roof with the insane. Very recently tenders were called for the erection of an "annex," but the authorities move so slowly in the matter of awarding the contract that the people are very much incensed at their dilatoriness and at the fact that the poor lunatics are to be left in the conditions described by the grand jury of Queen's County, to endure the rigors of another winter, huddled together, sleeping ten in a room, quartered in the attic, cold and shivering. This is the treatment meted out to these helpless and unfortunate ones by the representatives—or as one writer describes them—by the misrepresentatives of a Christian people. Pressure ought to be brought to bear on the governments of the different provinces at once, where these conditions of affairs exist—as Prince Edward Island is not alone in this matter—other provinces being known to be notoriously negligent in the same regard, in order that this crying evil be speedily remedied.

PRESCRIPTIONS WITH SCRIPTURAL QUOTATIONS.

The newly-appointed detective of the Ontario Medical Council, is rapidly getting into harness. From St. Thomas, Ont., comes the report that he has instituted proceedings against the "Rev." J. G. Evans, "M. D.," whose professional card bears the following: "The Nazarene," Medical Mission, Jericho, Syria. In writing his prescriptions, the pseudo-practitioner is alleged to have issued the following scriptural injunctions, which were printed on the top of his prescription blanks: "And He sent them to preach the kingdom of God and to heal the sick." "And heal the sick that are therein, and say unto them the kingdom of God has come nigh unto you." "Heal the sick, cleanse the lepers, raise the dead, cast out devils: freely ye have received, freely give." Following the written prescription, no doubt as an adjunct "signature," appearing in bold strong type was: "Ask the Lord to bless this as you take it." Subsequent information from Detective McPherson has elicited the fact that the "divine healer" has decamped; probably he has gone to Jericho.

Deaths and Obituaries.

ROBERT B. CRUCE, M.D., Philadelphia, while making a professional call, September 15, died suddenly, at the age of 61 years. He was born in Ireland, came to this country in 1850, and was graduated from the University of Pennsylvania in 1859. In July, 1861, he was appointed assistant-surgeon to the 38th Regiment, Pennsylvania Vols., and later, with the 12th Cavalry, at the battle of Chancellorsville, he was taken prisoner, but subsequently escaped and joined his command. Owing to an injury received by the fall of a horse, he was retired from the army in 1863, and in September of that year was appointed house surgeon to St. Joseph's Hospital, Philadelphia; in 1867 he became physician and surgeon in charge. In 1875 he was elected visiting surgeon, and, on the death of Dr. William V. Keating, in 1894, succeeded him as president of the medical staff. At the time of his death he was a member of the College of Physicians of Philadelphia, of the Philadelphia County Medical Society, the Philadelphia Medical Club, and the AMERICAN MEDICAL ASSOCIATION.

CHARLES THOMAS ROBINSON, M.D., Columbia University, N. Y., 1895, died from cardiac disease, at his home in New York City, September 11, aged 26 years. He spent a year as house surgeon in St. Catharine's Hospital, Brooklyn, N. Y., after which he began practice in Harlem, New York City.

THOMAS C. WORTHINGTON, M.D., died at Laurel, Md., September 15, after a month's illness. He was 80 years of age, and

a widower without children. He was graduated from the medical department of the University of Maryland in 1840.

ALFRED BROWN, M.D., HELLERTOWN, Pa., died in that city on September 11, aged 34 years. He was graduated from the University of Pennsylvania in 1871, and had practiced in Hellertown for the past twenty-seven years.

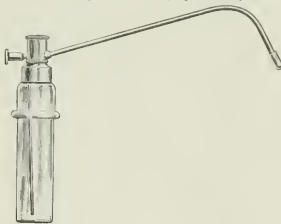
J. H. Cook, M.D., Dardanelle, Ark., died September 14. . . . R. H. Culbertson, M.D., Brazil, Ind., September 12, aged 69. . . . Hosea A. Little, M.D., Linton, Ind., September 9, aged 30. . . . M. D. Raiford, M.D., Waller, Texas, September 30.

New Appliances.

An Instrument for Intratracheal Medication.

BY ALBERT C. HEATH, M.D.
ST. PAUL, MINN.

The only excuses for offering this instrument are simplicity and efficiency, two essentials which are not always found in medical and surgical appliances. I have used it for the past two years, and find it suits its purpose, i. e., to inject solutions into the trachea and bronchus. The instrument consists of an ordinary Davidson oil atomizer bottle and cap, but having in place of the ordinary atomizing canula a much longer one without the small inner tubing which delivers an unbroken stream: this canula is so curved that one can easily bring its point over the opening to the larynx, or even between the vocal cords, if necessary. I use this instrument with a Davidson cut-off under about twenty pounds air-pressure, and am in the habit of using it in the following way: Under illumination with the laryngoscope in position, the tip of the instrument being placed within the oropharynx vertically over the opening to the larynx in its axial plane, having previously observed the



rhythm of the breathing, injection is made with the inspiratory effort. After a little practice one can gauge the amount of the medicine to be injected by the touch of the thumb on the cut-off. Intratracheal medication can be accomplished without touching the tissues, and with no discomfort to the patient except that which the medicine produces after it is in the trachea. Intratracheal injections can be given even without the use of the laryngoscope, by placing the tip of the instrument in the oropharynx just above and posterior to the epiglottis, then at the same time with forced inspiration the injection is made. This can be done with the most intractable patient. This instrument is made by the Davidson Rubber Co., Boston, Mass.
140 Lowry Arcade.

Suggestions for an Antiseptic Suit.

BY JESSE HAWES, M.D.
GREELEY, COLO.

The antiseptic suit is usually made of common blue denim. Seven yards is enough for the average person. Stretch the cloth from the floor up one side of the person, loosely over the crown of the head, and down to the floor on the opposite side. Cut arm-holes opposite the shoulders. Pin the whole width of the cloth about the legs, from the floor to the perineum.

Sew the edges as pinned. This forms the legs of the suit. Sew double thicknesses of denim over the lower end of the pants legs. Lap the two front edges over the chest and abdomen, six or eight inches, and pin in this position. Pin the denim from the back of the head to the nates. Remove surplus cloth. Leave enough cloth in the suit to loosely envelop the person, when wearing an ordinary suit of clothes. Gather the front edge down, over the forehead, level with the eyebrows, and pin. Place a flap 5x10 inches, across the face below the eyes. Sew one end of the flap, and fasten the other with strap and buckle. Sew in loose sleeves, fasten with strap with buckle around the sleeve at wrist. Attach two rows of buttons, eight inches apart, down the right side of the front: one row should be just at the edge, the other eight inches to the right of the edge.



Dr. Hawes' Antiseptic Suit for use in Contagious Diseases.

Fasten a belt with buckle, around the hips. Sew a pocket on the left breast for handkerchief and thermometer. When the suit is complete, soak it, a pair of cotton gloves, and pocket handkerchief in breast pocket, in a 1 to 500 bichlorid solution.

Lay the suit away for use when needed. When called to a recognized case of contagious disease, dampen the suit lightly all over with any clean water on leaving your office. Put on the dampened suit at the door of the patient; remove it on coming out of the room; wipe the face with the bichlorated handkerchief. Roll up the suit and put it under the buggy seat loosely, or in a little cloth bag. Every germ that has come in contact with the damp suit will be destroyed. Remember that the corrosive salt does not leave the suit, nor grow weak with age. The suit is ready for use at any time, by being lightly dampened with clean water.

An occasional dampening with the 1 to 500 solution, while almost unnecessary, will render the suit more strongly antiseptic. Cost of material for suit, less than \$1.00.

Parrots and Psittacosis.—A French navigation company, the *Compagnie des Chargeurs-Renais*, has forbidden the transportation of parrots on its vessels, as a preventive measure against psittacosis.

Miscellany.

Delivery of Association Buttons.—Owing to the great demand for the A. M. A. buttons during the past week, we have been unable to fill all orders, but as soon as a new consignment is received from the manufacturers, probably within a few days, orders will be filled.

The American Association of Obstetricians and Gynecologists met this week at Indianapolis. The following officers were elected for the ensuing year: President, Rufus B. Hall, (Cincinnati); Vice-Presidents, L. H. Dunning, Indianapolis, and T. J. Crofford, Memphis; Secretary, W. W. Potter, Buffalo, and Treasurer, X. O. Werder, Pittsburg, were re-elected. The next meeting will be held in Memphis, Tenn.

Preservation of Meat.—A Danish zoölogist, Fjelstrup, has suggested a method of preserving meat, founded on the principle that the decomposition of the blood is the cause of the putrefaction. At the moment the animal is slaughtered the heart is exposed and a ventricle opened for the complete evacuation of the blood, after which the venous system is injected with a solution of salt through the intact ventricle. The experience of three months has been very favorable.—*Magasin Pit.*, July 1.

Fedoroff's Extracapsular Abdominal Hysterectomy.—The special features of this method are that the uterus is extirpated with its peritoneal covering—hence the term extracapsular—and that the posterior and anterior cul-de-sac are in turn exposed and reached through the abdomen and opened with the scissors. Forceps are then introduced through the vagina and these openings to clamp the broad ligaments. The bottom of the pelvic cavity is not sutured nor separated from the vagina. Four observations of cases thus treated are described in the *Medicinske Obozrenje*, v. 51, the results justifying the recommendations of the author.

Serotaxis with Solutions of Caustic Potash, a New Method of Diagnosis.—The fact that caustic potash dissolves the tissue with the production of a clear serous fluid, suggested to Frickenhaus that this outward stream of serum might sweep bacteria out with it and ensure a correct diagnosis. In cases of lupus he was thus able to derive tubercle bacilli, and in lupus erythematosus a hitherto undescribed micro-organism. He also applies a 1 to 3 per cent. solution of caustic potash to lupus nodules, painting the surface every second or third day, and finds that the nodules heal well under this treatment. He urges further research with "serotaxis" in favus and trichophytosis.—*Derm. Zbl.*, August.

Queries and Minor Notes.

COMMERCIALISM.

WAUSEON, OHIO, Sept. 12, 1899.

To the Editor—Enclosed I send you a circular letter which I received from your city. I use you are speaking of commercialism. What do you think of this one?

P. J. L.

ANSWER:—This time it is a woman who offers to divide her fees with the doctor who will send her cases. She "cures cancers." Her circular is made up of "hogwash," self-laudation and brag. She uses the old-time humbug about the "busy practitioner" who has no time to study the "etiology, pathology or the latest or best methods of treatment of such maladies" (cancer). Being a specialist, she tells us she has made a deep study of all these, and also of the latest methods of treatment: "In cancer I have a method of treatment which is wholly original with me, and known only to me." But she is not as liberal as some evidently are, judging from a letter we published three weeks ago: "I shall give you fifteen per cent. for all cases sent me amounting to \$300 or less, for all over that amount twenty-five per cent." However, she evidently has her eyes open to the necessity of "cash down" policy for she instructs her patrons to let the patients know they must be prepared to pay cash in advance. "and then your fee as well as mine will be secure." And then here is another wise soteeche: "When you are sure that a patient has fully made up his mind to come for treatment, kindly tell me how much he is able to pay, and about what he is safely considered worth." But for brazen assurance, this is hard to beat: "It would be well to inform the persons who have the bills to pay, that the treatment, of necessity, must come high, as I am the only one anywhere who does the work by this method."

We would not have our readers imagine that the sender of this circular

is among the reputable physicians of this city, her name not being in the list of members of any of the societies, but she evidently does belong to those who believe in this phase of "commercialism" in medicine. Further, her name is not in the list of practitioners as published by the Illinois State Board of Health, while Polk's "Med. and Surg. Register of the United States and Canada" gives Missouri Medical College as her alma mater. The 1898 "Chicago Medical Blue Book" gives St. Louis Medical College, while the 1899 Blue Book puts her down as "ecclectic, no information"; and Connor's "Medical Directory" has her credited to Hahnemann Medical College, Chicago, 1884. Possibly she has forgotten where she did graduate.

NURSE AS ANESTHETIZER.

JOLIET, ILL., Sept. 7, 1899.

To the Editor—Kindly inform me whether certificates or diplomas issued by the State Board to graduate nurses allow them to administer anesthetics, or does their training-school diploma cover that? The case is this: One of our graduate nurses here has taken a special course in the administration of anesthetics, and has become very proficient, and wishes to announce her ability in this respect on her cards, etc., she wishes to know whether she would be allowed to do so, or would a certificate issued to her by the physician under whom she has been studying be recognized and protect her?

J. H. W.

ANSWER:—The Illinois medical practice act apparently makes no provision for anesthetizers other than qualified medical practitioners who have obtained certificates from the State Board of Health. This is obtained only by passing an examination, and the wording of the act is: "No person shall hereafter (after July 1, 1899) begin the practice of medicine or any of the branches thereof or midwifery, in the state, without first applying for and obtaining a license from the State Board of Health to do so." A training-school diploma carries with it no legal rights to practice, it is simply the statement that the holder has passed through the course, and a statement of fitness to act as a nurse under a physician's direction. A certificate from a physician would have no more value. The printing and circulation of such a card as mentioned by our correspondent would, therefore, not be advisable.

The Public Service.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., to and including Sept. 14, 1899:

James A. Alexander, acting asst.-surgeon, from the Department of the Province of Havana and Pinar del Rio to Monroe, La., for assignment of contract.

Frank E. Artand, captain and asst.-surgeon, from New York City to join his regiment, the 45th Inf. Vols., at Fort Snelling, Minn.

Edward G. Benson, lieutenant and asst.-surgeon, 39th Inf. Vols., from recruiting duty at Des Moines, Ia., to Vancouver Barracks, Wash., for duty with his regiment.

Joseph L. Bell, lieutenant and asst.-surgeon, Vols., assigned to the 34th Inf. Vols.

Frank S. Bouras, major and surgeon, Vols., resignation accepted, to take effect Sept. 30, 1899.

Alfred E. Bradley, major and surgeon, Vols. (captain and asst.-surgeon U. S. A.), resignation of volunteer commission accepted to take effect Oct. 1, 1899.

Louis Brechemin, major and surgeon U. S. A., sick leave extended.

Julius M. Cabell, major and surgeon, Vols., from San Francisco, Cal., to Washington, D. C., for instructions.

Charles A. Cattermole, acting asst.-surgeon, to duty with troops en route from San Francisco, Cal., to Manila, P. I.

Walter Cox, lieutenant and asst.-surgeon, U. S. A., from the Department of Porto Rico to post duty at Fort Leavenworth, Kans.

Charles F. Craig, acting asst.-surgeon, from Camp Columbia, Cuba, to temporary duty at Fort Hamilton, N. Y.

Thomas E. Evans, appointed major and surgeon Vols., Sept. 9, 1899, and assigned to the 49th Inf. Vols., at Jefferson Barracks, Mo.

John J. Gihluey, acting asst.-surgeon, to duty with troops en route from San Francisco, Cal., to Manila, P. I.

Charles S. Grant, appointed captain and asst.-surgeon, Vols., Sept. 9, 1899, and assigned to the 49th Inf. Vols., at Jefferson Barracks, Mo.

Howard A. Grube, captain and asst.-surgeon, Vols., to join his regiment, the 48th Inf. Vols., at Fort Thomas, Ky.

Charles F. Kieffer, major and surgeon, Vols., to join his regiment, the 48th Inf. Vols., at Fort Thomas, Ky.

Henry S. Killeen, major and surgeon, U. S. A., to inspect the transport "Patrick J. McKeogh," Pa.

Charles E. Marrow, lieutenant and asst.-surgeon, U. S. A., sick leave extended.

Donald P. McCord, acting asst.-surgeon, from the Department of the Province of Havana and Pinar del Rio, Cuba, to report at Washington, D. C., to the surgeon-general.

Patrick J. McKeogh, lieutenant and asst.-surgeon 34th Inf. Vols., resignation accepted to take effect Sept. 8, 1899.

Franklin A. Meacham, major and surgeon, Vols., from New York City, to duty in the Department of California.

William Grey Miller, acting asst.-surgeon, to duty with troops en route from San Francisco, Cal., to Manila, P. I.

Thomas K. Mullins, acting asst.-surgeon, from Troy, Ala., to duty in the Department of California.

Fred W. Palmer, acting asst.-surgeon, from Jackson, Mich., to the Department of California.

William W. Purcell, appointed lieutenant and asst.-surgeon, Vols., Sept. 9, 1899, and assigned to the 15th Inf. Vols., at Fort Thomas, Ky.

Edward A. Romig, captain and asst.-surgeon, Vois., to join his regiment, the 40th Inf. Vois., at Fort Riley, Kan.

William E. de Salazar, acting asst.-surgeon, from duty in the Department of the Province of Havana and Pinar del Rio, Cuba, to report for annulment of contract.

Hugh L. Taylor, acting asst.-surgeon, from the Department of the Province of Havana and Pinar del Rio to report to the surgeon-general at Washington, D. C.

James S. Wilson, lieutenant and asst.-surgeon, U. S. A., now under orders for Manila to report on arrival for examination for promotion.

William H. Wilson, captain and asst.-surgeon U. S. A., from duty with recruits at the Presidio of San Francisco, Cal., to Angel Island, Cal., for post duty and to command the company of instruction to be established there.

Movements of Navy Medical Officers.—Changes in the medical corps of the U. S. Navy for the week ending Sept. 16, 1899:

Surgeon M. H. Crawford, detached from the marine recruiting rendezvous, Chicago, Ill., and ordered to the marine recruiting rendezvous, New York City.

P. A. Surgeon E. S. Bogert, detached from the marine recruiting rendezvous, New York City, and ordered home and to wait orders; directed to be ready for orders to sea duty.

Surgeon C. M. Moore, detached from the *Vermont* and ordered to the marine recruiting rendezvous, Chicago.

Asst.-Surgeon M. S. Elliott, detached from the marine recruiting rendezvous New York City and ordered to the *Vermont*.

Asst.-Surgeon W. M. Garton, detached from the *Franklin* and ordered to the Washington navy yard.

Surgeon P. A. Lovering, ordered to duty at the recruiting rendezvous, Honolulu, N. Y.

P. A. Surgeon W. F. Arnold, ordered to the Pensacola navy yard.

P. A. Surgeon H. N. T. Harris, detached from the Pensacola navy yard and ordered home to wait orders.

Asst.-Surgeon J. S. Chaffee, resignation accepted.

Medical Director J. R. Tryon, detached from duty as general inspector of naval hospitals and ordered home and to wait orders.

Asst.-Surgeon E. C. Parker, detached from the *Penwood* and ordered to the *Harford*.

Medical Director J. R. Tryon, retired September 21.

P. A. Surgeon L. L. Von Wedekind, granted sick leave for three months, when discharged from naval hospital, Mare Island, Cal.

Marine-Hospital Changes.—Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the U. S. Marine-Hospital Service, for the 21 days ended Sept. 14, 1899.

Surgeon J. H. White, directed to proceed to National Soldiers' Home, Va., for special temporary duty.

Surgeon G. M. Magruder, to proceed to Port Tampa, Florida, for special temporary duty.

P. A. Surgeon C. P. Wertenberger, granted leave of absence for fourteen days on account of sickness.

P. A. Surgeon A. C. Smith, to proceed to Tortugas Quarantine, for special temporary duty.

P. A. Surgeon Charles H. Gardner, granted leave of absence for one day.

P. A. Surgeon H. W. Wickes, leave of absence extended four days.

Asst.-Surgeon L. D. Fricks, to proceed to Key West, Fla., for special temporary duty.

Asst.-Surgeon G. M. Corput, relieved from duty at Egmont Key Detention Camp, Fla., and granted leave of absence for 30 days on account of sickness.

Asst.-Surgeon Walter W. King, relieved from duty at Reedy Island Quarantine, and directed to New Orleans, La., and report to the commanding officer for duty and assignment to quarters.

Asst.-Surgeon F. J. Thornbury, relieved from duty at Baltimore, Md., and directed to proceed to the Immigration Depot, New York, and report to the commanding officer for duty.

Asst.-Surgeon F. E. Trotter, relieved from duty at Immigration Depot, New York, and directed to proceed to Mullet Key Detention Camp, Florida, and assume command.

Acting Asst.-Surgeon L. C. Bean, granted leave of absence for one day.

Acting Asst.-Surgeon B. J. Brown, Jr., granted leave of absence for three days.

Acting Asst.-Surgeon Francis Duffy, granted leave of absence for two days.

Acting Asst.-Surgeon B. W. Goldsborough, granted leave of absence for one day.

Acting Asst.-Surgeon A. W. Smith, relieved from duty at Cape Charles Quarantine, and directed to rejoin station at Baltimore, Md.

Hospital Steward F. H. Peck, relieved from duty at Hampton, Va., and directed to proceed to Mullet Key Detention Camp, Fla., for special temporary duty.

Hospital Steward E. T. Olsen, to proceed to Tortugas Quarantine for special temporary duty.

Surgeon H. K. Carter, to proceed to Key West, Fla., for special temporary duty, thence to New Orleans, La., and assume charge of service matters.

Surgeon G. M. Magruder, to proceed to New Orleans, La., for special temporary duty.

P. A. Surgeon T. B. Perry, relieved from duty at San Francisco, Cal., and directed to proceed to Stapleton, N. Y., and report to the commanding officer for duty and assignment to quarters.

P. A. Surgeon J. M. Eager, to proceed to Saginaw, Mich., as inspector.

P. A. Surgeon M. J. Rosenau, detailed as temporary quarantine officer at Havana, Cuba.

P. A. Surgeon J. A. Nydegger, relieved from duty at Marine Hospital, New Orleans, La., and directed to report to Surgeon Magruder for special temporary duty.

P. A. Surgeon Rupert Blue, granted leave of absence for one month and eight days from Oct. 6, 1899.

Asst.-Surgeon J. McMullen, to proceed to Memphis, Tenn., for special temporary duty.

Asst.-Surgeon R. H. von Ezdorf, relieved from duty at Hampton, Va., and directed to rejoin station at New Orleans, La.

Acting Asst.-Surgeon F. B. Adams, granted leave of absence for ten days.

APPOINTMENTS.

Edward J. Agnewly of New York, to be junior hospital steward.

BOARD CONVENED.

Board convened to meet at New York, Oct. 4, 1899, for the examination of candidates for appointment as assistant-surgeon in the service and officers for promotion. Detail for the board: Surgeon H. W. Austin, chairman; Surgeon G. W. Stoner; Surgeon C. E. Banks, recorder.

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the surgeon-general of the U. S. Marine-Hospital Service, during the week ended Sept. 15, 1899:

SMALLPOX—UNITED STATES.

Florida: Jacksonville, September 2, 1 case.
Massachusetts: Fall River, September 2 to 9, 1 case.
Ohio: Cincinnati, August 25 to September 1, 6 cases; Cleveland, September 1 to 8, 4 cases.

Pennsylvania: Philadelphia, September 9, 1 death.
Texas: San Antonio, August 31, 1 case, 1 death; Sixteen places, August 5 to September 2, 76 cases, 4 deaths.

Virginia: Portsmouth, September 9, 1 case.

SMALLPOX—FOREIGN.

Belgium: Antwerp, August 29, 3 cases.

Brazil: Rio de Janeiro, July 28, 54 cases, 34 deaths.

Cuba: Casilda, August 1 to 31, 1 death.
Greece: Athens, August 25 to 28, 11 cases, 2 deaths.

India: Bombay, August 15, 11 deaths.

Mexico: Chihuahua, September 4, 4 deaths; Mexico, August 20 to September 7, 9 cases, 6 deaths; Tuxpan, September 4, 2 deaths.

Russia: Moscow, August 12 to 23, 1 case, 1 death; Odessa, August 19 to 26, 1 case, 1 death; Orel, August 19 to 26, 1 case, 1 death.

Spain: Valencian, August 25 to 29, 4 cases, 5 deaths.

Turkey: Erzeroum, August 2 to 12, 2 cases; Smyrna, August 13 to 20, 1 death.

YELLOW FEVER—UNITED STATES.

Florida: Key West, September 9 to 12, 92 cases, 3 deaths; Port Tampa City, September 11, 1 death.

Louisiana: New Orleans, from outbreak to September 11, 7 cases, 2 deaths.

Mississippi: Jackson, September 10, 1 case; Mississippi City, September 10, 1 case.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, July 28, 5 cases, 2 deaths.

Cuba: Havana, August 24 to September 3, 5 deaths.

Colombia: Barranquilla, August 20, 1 case, 1 death; Colon, September 4, 1 case, 1 death.

Mexico: Orizaba, August 15 to 26, 6 deaths; Tuxpan, September 4, 2 deaths; Vera Cruz, August 24 to 31, 16 cases, 11 deaths.

CHOLERA.

India: Bombay, August 15 to 17, 1 death; Calcutta, August 15 to 17, 27 deaths.

Japan: Yokohama, July 16 to 29, 2 cases, 2 deaths.

China: Karachi, August 12, 14 cases, 17 deaths.

PLAGUE.

China: Karachi, August 12, 1 case, 2 deaths.

Egypt: Alexandria, August 20, 2 cases, 1 death.

India: Bombay, August 15 to 17, 71 deaths; Calcutta, August 15 to 17, 25 deaths.

CHANGE OF ADDRESS.

Arons, W. C., from Detroit, Mich., to 82 3d St., Fond du Lac, Wis.

Becker, B. A., from Silver Lake, Wis., to 2612 W. Main St., Louisville, Ky.

Blackbear, E., from Jocassee Valley, S. C. to 624 Green St., Augusta, Ga.

Bennett, F. R., from Urbana, Ohio, to Dayton, Fla.

Boyd, D. A., from Platt to Whittier, N. C.

Beem, E. D., from 1301 E. 8th to 705 Main St., Kansas City, Mo.

Covington, J. M., from Rockingham to Wadesboro, N. C.

Cotton, G. E., from Park, N. C. to 1606 Eutaw Pl., Baltimore, Md.

Cono, C., from Green Park, N. C. to 1616 Eutaw Pl., Baltimore, Md.

Clements, J., from 1113 to 915 W. 17th St., Kansas City, Mo.

Curtis, W. H., from Columbus to 528 S. 2d St., Lafayette, Ind.

Drummond, P. B., from Chillicothe, Ohio, to York, Neb.

Engstedt, A. B., from Omaha, Neb., to 2319 Broadway, Galveston, Texas.

Fuson, A. N., from Lapaz, Ind., to Stockton, Cal.

Giffin, C. W., from Waterloo to Iowa.

Hopkins, E. G., from Richmond to Glen Allen, Va.

Hardy, J. A., from Kilmarnock, Va. to Welch, W. Va.

Horton, R. W., from Waxahatchie, Texas to Wynne Wood, I. T.

Halley, J. J., from Benton City, Mo., to Fort Collins, Col.

Harris, G. D., from Columbus to Indianola, Miss.

Hackett, R. K., from 1318 Washington St. to Carrollton Ave. and Elm St., New Orleans, La.

Jones, G. E., from Connorsville to 1003 1st Ave., Evansville, Ind.

Kaumlheimer, G., from 508 to 577 3d St., Milwaukee, Wis.

Ruhn, B. F., from North Webster to Elkhart, Ind.

Lyster, T. C., from Ann Arbor, Mich. to Chief Surgeon's office, Div. of Cuba, A. A. Surg., Havana, Cuba.

McDuggall, G. T., from Eau Claire to 284 Washington St., Milwaukee, Wis.

McMasters, H., from Memphis, Tenn., to Pryorsburg, Ky.

Munford, from 507 to 504 Penn Ave., Pittsburg, Pa.

McJahan, C. F., from Bethlehem, N. H., to Aiken, S. C.

Motter, M. G., from Lake Park, Md. to 2144 Conn. Ave., N.W., Washington, D. C.

Medill, O. E., from Persia to Defiance, Iowa.

Paulin, N. O., from 1232 Euclid Ave. to Box 42, Station B, Cleveland, O.

Post, H. H., from Shappano, N. H., to 306 Adams Ave. St. Louis, Mo.

Rummond, W. B., from Mt. Pleasant, Mich. to Brazil, Ind.

Sessums, J. R., from Duffan to Carlton, Hamilton Co., Texas.

Short, J. L., from 214 W. 15th to 116 Holmes St., Kansas City, Mo.

Shlars, A., from Roseport to Ruston, La.

Smith, F. C., from Rowan to Waterloo, Iowa.

Woodward, J. H., from Long Lake, N. Y., to Brandon, Vt.

Werner, C. A., from St. Paul, Minn. to Box 62, Marathon, Iowa.

Wright, H. G., from Marshalltown to care Drake Unit, Des Moines, Ia.

The Journal of the American Medical Association

VOL. XXXIII

CHICAGO, ILLINOIS, SEPTEMBER 30, 1899.

No. 14

Original Articles.

SURGICAL TREATMENT OF ABSCESS OF THE LUNGS.

BY D. S. FAIRCHILD, M.D.
CHIEF SURGEON ST. JOSEPH'S HOSPITAL,
CLINTON, IOWA.

Pulmonary abscess is said by Osler to be easy of recognition, but for my own part I have to confess that I have met with cases in which grave doubts existed in my own mind as to the question of differential diagnosis between abscess of the lung and encysted empyema. I have also met with cases in consultation in which the attending physician was in error touching the existence of any abscess at all. It is no doubt true that an abscess discharging through a bronchial tube may be recognized without much difficulty, but previous to this time I am quite certain it may be easily overlooked.

Pneumonia is now generally recognized to be an infectious inflammation of the lungs, due in the majority of cases to the influence of the diplococcus pneumoniae of Fraenkel. The disease generally pursues a well-defined course marked by certain pathologic changes; once in about fifty cases it is said the pathologic changes result in the formation of an abscess. The consolidation which results from the inflammation appears to impair the resistance of the lung to a degree which, under favorable conditions of infection, may lead to the formation of pus, and the extension of the infection leads to an accumulation of pus to the extent of forming an abscess of greater or less size, or to more than a single abscess. In view of the fact that pneumonia is a disease due to a microbe which sometimes has the faculty of setting up pyogenic processes, it is quite a matter of surprise that in this disease abscesses of the lungs do not more frequently occur. A considerable number of conditions may lead to the formation of pus in pulmonary tissue, but the most frequent causes are pneumonia and tuberculosis. The complicated character of abscesses or cavities in tuberculosis or other diseases of the lungs than pneumonia, or the inflammation following injuries or foreign bodies renders surgical procedures of doubtful utility, except in rare cases. My experience being confined entirely to abscesses following pneumonia renders it hazardous for me to go outside of pus accumulations arising from this cause.

In a case of pneumonia, if after the end of two or three weeks there is still fever and absence of improvement in the respiratory murmur, or if marked improvement in the general condition of the patient has taken place at the usual period of convalescence, together with an improvement in the respiratory condition of the affected lung, the fever reappears, and the area of consolidation extends, it may be assumed that some complica-

tion exists. Among the complications may be found consolidation of the lung, hydrothorax, empyema or abscess. Which of these conditions we have to deal with I am confident can not always be determined. If bacteriologic investigations show the tubercle bacillus, it is of course significant. The absence of bacilli is not conclusive. The usual symptoms of fluid in the pleural cavity may be looked for, and if discovered the nature of it can be determined by the use of the aspirator needle. It is usually possible, however, to determine the nature of the fluid by the clinical symptoms; the presence of chills, morning and evening temperatures, rapid pulse, and the general symptoms of septic infection are significant, but it is best not to rely on this alone, for in some cases the presence of pus may not be revealed in this way and the exploring trocar should be used to determine the facts absolutely.

Encysted empyema will not reveal itself by the ordinary symptoms of fluid in the chest cavity and it is often difficult to distinguish between this and an abscess in the lung. An examination of the lung may show that the air enters the anterior or posterior surface—more particularly the anterior in my practice—while the opposite surface is solid, showing an entire absence of vesicular or bronchial respiration. While the air may enter the anterior or posterior surface, the respiratory murmur is abnormally feeble. I have a patient on whom I operated some time ago, where well-marked but rather feeble respiratory sounds were found on the anterior surface of the right lung, but the posterior was absolutely solid; this condition had existed for about eight months, large quantities of pus being discharged through the bronchial tubes every morning. This differed from an abscess of the lung only in the absence of an offensive odor and the absence of a cavity. The diagnosis was confirmed by the introduction of an aspirating trocar between the ribs at the lower border of the scapula. A portion of rib was resected and the cavity drained. An exploration of the cavity by the finger revealed the encysted empyema.

An abscess of the lung is a much more serious condition than an empyema, on account of the difficulty of surgical drainage. In an abscess of the lung, after discharge through a bronchial tube has taken place, the drainage is frequently so unsatisfactory that after the first discharge of pus, it continues to partially fill and discharge for a considerable length of time or until the patient is exhausted. In cases where it is possible to drain by surgical means better results may be obtained. It will sometimes be observed in abscesses of the lung that a single abscess forms, discharges, the cavity gradually contracts, and finally the patient is cured. In other cases several abscesses form and discharge at different times; this will occur when several foci of pus infection appear in a lobe which has been damaged by the intensity of the inflammatory process, even in cases which are not of embolic origin. These cases are no doubt more serious than where a single abscess forms.

*Presented to the Section on Surgery and Anatomy, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

The remainder of the products of inflammation are removed by absorption or by expectoration, but the case is more protracted.

Two cases treated surgically by myself will illustrate this fact. About seven years ago I was called in consultation to see a man weighing 250 pounds, who had been attacked by croupous pneumonia two months previously. The pneumonia had pursued the ordinary course, and apparent convalescence occurred. About two weeks subsequent to this, the fever began to rise and soon after an expectoration of exceedingly offensive pus occurred. The discharge was through a small bronchial tube and the cough was almost incessant, interfering seriously with sleep or comfort. When I saw him this condition had existed about three or four weeks; it was not quite clear to our minds whether we had to deal with an abscess of the lung or an encysted empyema.

The respiratory murmur was quite clear over the anterior surface of the right chest, although somewhat feeble. The posterior surface was quite solid; not even bronchial respiration could be discovered and the area of consolidation did not change on account of the position. The patient was placed under the influence of chloroform. The posterior surface of the chest was prepared for an operative procedure and an aspirating trocar introduced deep into the chest, first between the sixth and seventh ribs just posterior to the axillary line, with negative results, again between the fifth and sixth ribs, a little farther back, with the same results. The needle was introduced a third time, between the fourth and fifth ribs, in the angle between the scapula and the vertebral column, and obtained a free flow of pus; leaving in the trocar, as a quite free incision was made through the thick mass of muscles down to the ribs. The space between the ribs was not sufficient for satisfactory work and $1\frac{1}{2}$ inches of the fifth rib was resected. Following the needle I found that the two pleural surfaces were united and, thereby, the pleural cavity was protected from pus infection. I pushed a pair of straight, broad-ligament-forceps boldly over the needle through an inch of lung substance into the abscess cavity, separated the blades freely, introduced a large rubber drainage-tube, and a large quantity of pus escaped. The cough and expectoration of pus at once ceased and the patient made a rapid and uninterrupted recovery. In this case the discharge through the bronchial tube was only sufficient to remove the constantly forming pus, and therefore no cavity was permitted to form and one of the classic symptoms, the existence of a lung cavity, was absent. The point of differential diagnosis in this case lay between abscess of the lung and an encysted empyema communicating with a bronchial tube. The only symptom of value indicating an abscess was the offensive odor of the pus expectorated.

Another case more recently under observation was that of a young man who passed under a rather severe attack of pneumonia. Convalescence became partially established, but soon the fever began to rise, consolidation of the lung persisted, and it became evident that some serious lesion existed; cough and expectoration was slight; sputum was examined for tubercle bacilli, but with negative results. I saw the case in consultation, June 18, 1898. The lower lobe of the left lung was solid, except the anterior surface, in which the respiratory murmur was feeble; heart displaced toward middle line; temperature ranged from 101 to 103; no cavities; no expectoration of pus. After a most careful examination I could not make a complete diagnosis of the path-

ologic condition, but believed that pus existed in the lungs or in the pleural cavity as an encysted empyema. To clear up the doubt I introduced an aspirating trocar under aseptic precautions, between the fifth and sixth ribs, just posterior to the axillary line, and withdrew a large syringe of pus. A free incision was made in the track of the needle and the pleural cavity opened, but no pus was found, only a quantity of serous fluid. My finger, which had been carefully prepared, was introduced and the surface of the lung explored. The space between the ribs was wide, and no resection was necessary. It had been determined beyond doubt that an abscess of the lung existed, by the deep exploration of the needle, and as the pleural cavity was exposed I did not feel justified in incising or puncturing the lung for fear of infecting the pleura. I therefore packed the wound lightly down to the lung, with iodoform gauze.

A few days later a free discharge of pus occurred through the wound, with the result of bringing down the temperature to 98.5 in the morning and 100 in the evening, with a corresponding reduction in the pulse. For seven days the improvement was marked. The discharge of pus gradually lessened. At the end of this time the temperature began to rise. Fearing that the drainage was not sufficient the patient was again anesthetized, June 27, and my finger forced through the chest wound. It now entered an irregular cavity of considerable size, in the lung, but no accumulation of pus was found, showing that the drain provided for the discharge of all the pus formed. Any further operative procedures were deferred under the hope that if the pus was again forming it would soon find its way into the old abscess cavity as the evidence seemed to show that we were already in the area of infection.

Six days later, July 31, the temperature, which had ranged from 101 to 103, fell to 99.6, with a corresponding improvement in his general condition. Under these circumstances it was deemed best to defer operative procedure; nevertheless, a point on the posterior surface of the chest between the fifth and sixth ribs was selected for exploration providing the patient did not continue to improve.

Three days later, however, the temperature began to rise and ranged between 101 and 104. It now became certain that another collection of pus existed and that further operative procedures were necessary. Accordingly, on July 15 exploration was made between the fifth and sixth ribs on posterior surface—at the point selected on the previous visit—and a large amount of pus found; resection of a portion of the fifth rib permitted an exploration of the cavity of the lung.

We now had two lung cavities separated by a mass of lung tissue, no doubt in condition of consolidation, offering a degree of resistance which did not permit the pus of one cavity to enter the other. The irregular outlines of both cavities could be determined by pushing the finger deeply into the wound. The improvement which followed the last operation did not continue long. Three days later the temperature rose to 104 and on July 19 I found a bronchopneumonia in the right lung. This condition had no doubt arisen from the insufflation of pus germs during chloroform narcosis, for, during the few days previous to the last operation a small quantity of pus had escaped through a bronchial tube. The condition appeared to be desperate, but fortunately the bronchopneumonia subsided and the patient made an uninterrupted and rapid recovery, thanks to the skillful care of Dr. Ruml of Cedar Rapids, Iowa.

While it may be difficult or impossible to differentiate

¹ Reported Chicago Med. Rev., May, 1893.

in a considerable percentage of cases between abscess of the lung and an encysted empyema, it may be said that the means of absolute diagnosis is the same, viz., puncture of the suspected area by an aspirating needle. If pus is found it should be evacuated by free incision, resecting a rib if necessary, to obtain sufficient drainage. If on entering the chest cavity no pus is found, the finger should be introduced for the purpose of exploration. The failure to obtain pus after its presence has been demonstrated by deep aspiration may be taken as evidence that the abscess is in the lung itself. If the finger reveals the fact that the pleural membranes are not adherent, then gauze may be lightly packed against the pleural pulmonalis to invite adhesions and thus protect the pleural cavity from the danger of infection, when subsequently the abscess is opened. There are no doubt cases where the immediate danger is so great as to warrant the surgeon in ignoring the risk of infecting the pleural membranes and opening the abscess at once, but I can not agree that this is the safest course when a few days' time can be spared. In the case I have referred to may be mentioned the fact that there was serous effusion sufficient to hold the pleural surfaces apart and thus prevent the adhesions which would otherwise probably have taken place.

I do not think it is a good practice in cases of either pulmonary abscess or empyema to use irrigation; it can do no good and often causes distressing irritation of the lung. In my earlier practice I resorted to injections of solutions of boric acid, but I have not done so of late years. As to the administration of medicines, very little can be said. It is true that certain means may be employed with great advantage for the purpose of supporting the strength of the patient, but these are indicated on general principles, regardless of the fact of a pus accumulation. It is no doubt true that if the pus is due to the pyogenic action of the pneumococcus degeneration and absorption may take place, but if it is due to a mixed infection or to the streptococcus, as is usually the case, no such fortunate result can be expected. The disease then becomes certainly a surgical disease and should be treated by surgical means adapted to the individual case, always having in view the necessity of drainage. In a certain proportion of cases the abscess discharges itself through a bronchial tube and a spontaneous cure is accomplished in this manner. While this can not be looked on as a scientific termination of a case, it is, however, the best that can be looked for in a certain number of cases.

DISCUSSION.

DR. A. H. LEVINGS, Milwaukee, Wis.—I am very much interested in the subject which the Doctor has so well placed before us, and think it is one which has not received the attention its importance merits. Some noted clinician has said, "Before treating a pulmonary abscess one must make a diagnosis, and not only make a diagnosis, but must locate the abscess." A reliable diagnosis of abscess of the lung will depend on the history, the symptoms, the character of the sputa and a thorough physical examination of the chest. An abscess of the lung is usually a secondary process; its symptoms will be more or less intermingled with, and marked by those of the original disease, in common with other acute affections of the lungs; there is pain, disturbed respiration, fever and cough; on percussion, there will be circumscribed dullness, provided the area affected be of sufficient size and superficially situated, with bronchial breathing and more or less rales. With the formation of a cavity, if the process be superficial, a portion of the dull area will have changed to tympanites, and if the costal pleura be implicated, there will be the friction sounds of pleurisy.

In a case under my observation, the percussion-note was ob-

erved to alternate over a circumscribed area between dullness and tympanites. After a severe fit of coughing and the expectoration of a quantity of pus, the area which had previously been dull would become tympanitic, following this, if the patient did not cough much for twenty-four hours, and allowed the cavity again to fill, the percussion note would change to dullness. If the cavity be in full communication with a bronchus, the percussion-note will be higher with the mouth open than with it closed.

Gerhardt has called attention to the fact that if the cavity be longer in one direction than in another, and contains fluid, change in the patient's position will change the pitch. This interrupted change in pitch is considered pathognomonic, that is, with the mouth open a rise of pitch is noticed upon percussion only in a certain position, as in sitting up. While the location of the abscess is determined as nearly as possible, by a physical examination, this finding must be proved true, or corrected by the aspirating needle. If one fails with the needle to locate the abscess, then I believe it is imperative, if the symptoms are pronounced, to make a resection of one or more ribs, and patulate the lung.

DR. J. B. MURPHY, Chicago—I wish to speak of one condition in connection with the operation. In abscess of the lung, where we have pleural adhesions, is not difficult to operate. One can expose the lung, divide it with the scalpel, which is the best means, down into the abscess cavity, but we have an additional danger, and I paid for the knowledge, by sacrificing a patient a few days ago. It was a case of abscess of the lung following the inhalation of a peanut. The abscess was located under the angle of the scapula. There was a paroxysmal cough; expectorations of a half ounce every two or three hours. The abscess cavity could not be emptied by placing the patient in any particular position. There appeared to be no excursion of the lung. We believed there were firm adhesions of the pleura at the time of operation and did not carry out a plan which I have devised, demonstrated experimentally and which I shall always do in the future, regardless of adhesions, and that is determining the presence of adhesions by injecting into the pleural cavity a quantity of air, which should be done without force. If there be no adhesions, the air will be aspirated into the pleural cavity with each inspiration. What then happens? If adhesions exist, the dullness will remain and respiratory sounds will not change. If adhesions do not exist, the lung will collapse and respiratory sounds in that side will cease. In my fatal case, after resecting the ribs and exposing the pleura, I found very friable adhesions, with an increase in respiration, and the lung receded. The result was that several ounces of pus escaped from the mouth. He was resting on his healthy side. He inhaled some of the pus into the healthy lung and he died of infective pneumonia of the previously healthy lung, about forty-eight hours after the operation. I drew the infarcted portion of the diseased lung out into the incision, sutured it in the incision and had it ready for secondary opening with the scalpel or cautery, thoracoeic. I knew I could easily open it secondarily, as I had the diseased portion of the lung exposed, but he died of aseptic inhalation pneumonia produced by the pus inhaled during the anesthesia. I could have avoided that by putting the air into the pleura while he was awake and could expectorate it.

DR. D. S. FAIRCCHILD, Clinton, Iowa—I have only a word in addition to say and that is in relation to physical examination. I have to confess that I am not sufficiently skilful in making a physical examination to determine whether its consolidation is due to abscess or to other causes, and I can do better if I introduce a needle. I should use the short—the smallest—needle consistent with ascertaining the real fact. I spoke of the long needle and deep exploration because we had a very large man, weighing 250 pounds. The fact in this case I did not offer as being a rule in guiding me in the matter of the long needle. I would not use a longer one than was necessary. The reason why I used a pair of forceps in pushing my way into the lung, where the abscess was located, was because I was too timid to use a sharp instrument. I used the forceps in this case and would use them again under similar circumstances.

Exophthalmic Goiter.—Dr. Pitres of Bordeaux reports that 1 c.c. of iodofomed ether injected into the parenchyma of the thyroid body at eight-day intervals for several months has cured six cases of exophthalmic goiter, and the cure has persisted two years. Six other cases were improved to such an extent that they were satisfied with the results of partial treatment and did not return to complete the course. He has thus made 120 injections and never observed any accidents.—

SOME OF THE RARE FORMS OF HERNIA AND THEIR RADICAL TREATMENT.*

BY R. HARVEY REED, M.D., (UNIV. PA.)

President Wyoming State Medical Society; Member Association of Military Surgeons of the United States, The Rocky Mountain Interstate Medical Association, The Western Surgical and Gynecological Association; Medical Director Wyoming General Hospital; Division Surgeon Union Pacific R.R., Surgeon-General of Wyoming, etc.

ROCK SPRINGS, WYO.

The writer does not propose to review the anatomy of hernia, or enter into its etiology or pathology, neither does he propose to discuss or report cases of the more common forms of hernia, with which medical literature on this subject is already overburdened.

GASTRIC HERNIA.

It has always seemed strange to me that our textbooks, old and new, should refer to hernia of the diaphragm with such mathematic precision, and at the same time ignore the presence or attempt a description in the most meager manner, of gastric hernia. Certainly it is not because the authors have not seen it, or that it does not exist, or that it is not more common than hernia of the diaphragm. One thing is certain, it is much more amenable to surgical interference with more successful results than the former. In the writer's opinion, it is much more deserving of a place in our textbooks from a practical standpoint than hernia of the diaphragm.

In my experience gastric hernia has been the result of direct violence, usually over the larger curvature of the stomach, causing a solution of the continuity of the abdominal walls overlying that particular anatomic region; like ventral hernia, it is seldom if ever congenital, but is usually, if not always, traceable to direct violence.

To illustrate: Case 355, A. N., was admitted to the Wyoming General Hospital, Jan. 14, 1898, at which time we found a tumor about the size of a fist, immediately over the larger curvature of the stomach. We also found the patient suffering not only from pain, but from indigestion, and frequent vomiting, and on further investigation found this tumor varied in size, sometimes disappearing altogether, at other times being not larger than a walnut.

The patient was an unusually large muscular Swede, aged 42, and a professional coal driller, and had charge of one of the large drills in the U. P. Coal Company's mines. This drill was run by compressed air, and he was in the habit of pushing the drill into the rock or coal by pressing the one end of it against the pit of the stomach; continued pressure at this point, with a sudden lurch of the drill one day produced a tear in the linea alba, which on physical examination could be readily felt underneath the skin, and it was with little or no difficulty that I could thrust my three fingers into the opening through the abdominal wall. At times a portion of the stomach would protrude through this opening, and could be easily felt, and with little or no difficulty replaced, thus giving relief for the time being. The patient became so expert at this that he kept on with his work, and when the stomach would protrude through the opening, would stop and replace it, and go on about his business.

Becoming weary of this, he entered the Wyoming General Hospital for a radical operation, which I performed on Jan. 15, 1898. It consisted in making an incision in the median line about three inches in length, carefully

dissecting down until we came to the ragged edge of the opening which had been torn through the abdominal walls in the line of the linea alba. These edges were freshened and carefully brought in apposition by the so-called "base-ball" suture. The first, second and third rows of sutures were of pyoktanin catgut, while the last row was of silkworm gut. The first row included the peritoneum only, the second the muscle and peritoneum, the third the deep fascia and the muscle, and the last row the integument and deep fascia.

The patient made an uninterrupted recovery by first intention, and was discharged Feb. 2, 1898, just eighteen days after his operation, and up to the present time has had no evidence of a return.

Again, Case 701, J. K., a strong, healthy Finlander, aged 39, miner by occupation, while lifting a prop in one of the mines, had his foot slip, and in trying to save himself caught hold of another prop, but finally fell, striking heavily on the bottom of the mine. He at once experienced intense pain in the region of the stomach, and, noticing a lump, came to my office. On examination I found a tumor immediately over the larger curvature of the stomach, about the size of a walnut.

He was admitted to the Wyoming General Hospital, and operated on, Jan. 20, 1899, after the method described in Case 355, making an uninterrupted recovery, with the exception of an attack of acute cystitis. He was discharged from the Hospital, February 19, thirty days after his operation, which was prolonged twelve days more than in the former case on account of the cystitis. He is now at work in the mine, and complains of no inconvenience.

UMBILICAL HERNIA.

This is not considered as a rare form of hernia, but I take the opportunity of presenting a case of unusually large umbilical hernia and, as will be observed by the accompanying photographs, taken before and after operation, one of more than ordinary interest. The patient—Case 404—Mrs. M. L., was admitted to the Wyoming General Hospital, March 20, 1898, where she was operated on, March 24. She was born in Scotland 43 years ago, married, weighed 260 lbs., but for a woman of her size and weight was exceedingly active, doing her own work, and acting in the capacity of the so-called "granny nurse" when and wherever needed.

About one year previous to her being admitted to the Hospital, she noticed a tenderness about the umbilicus, which she thought might be a boil. This tenderness gradually increased, and at the same time a tumor appeared, which also continued to increase in size. She consulted a physician, who told her it was an *abscess*, and wished to lance it. To this she did not give consent, and in February, 1898, called at my office, when I found a tumor so large that when she was sitting down on an ordinary chair the anterior portion of the tumor was even with the knees when the legs and thighs were flexed.

My diagnosis was umbilical hernia, involving the omentum, stomach, and the small and large intestines, and I advised her going to a hospital. On March 24, I operated and found my diagnosis correct. The opening through the abdominal wall was large enough for me to pass my closed fist through it without touching either side. I removed about two pounds of omentum, and returned the remainder with the intestines and stomach to their normal positions. After thoroughly dissecting off the fibrous ring, which surrounded the opening through the abdominal wall, and removing an elliptic

*Presented to the Section on Surgery and Anatomy, at the Fifteenth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

piece of skin from each side of the abdominal incision, each one of which was about three inches in width, at its widest point, and about six inches in length, in order to make the integument conform with the reduced size of the abdomen, I proceeded to approximate it with the continued pyoktainin catgut suture. My first row of sutures included only the peritoneum; the second, the muscular structures and peritoneum; the third, the deep fascia, being careful to include the muscle, and lastly, I carefully approximated the integument with interrupted silkworm gut suture which included the deep fascia.

She made an uneventful and uninterrupted convalescence and was discharged with a complete recovery. Before she left the Hospital I made careful measurements and had a double-legged Hamilton supporter made for her, so as to prevent the return of the hernia. After returning home, she attempted to improve the supporter, but in her efforts to do so, destroyed its usefulness and threw it away, and went without any support whatever. She continued her duties as housewife,



BEFORE OPERATION.

but after some months the hernia partially returned, but not to such an extent as before and does not pain her as it did prior to the operation. We feel, however, that this was due to her immense size and to the fact that she did not carry out the instructions regarding the use of the Hamilton supporter, which, I think, had it been used, would have prevented her from having any further trouble. As it is, however, she is able to do her ordinary duties with little or no inconvenience, her health is good, and if anything, her weight is greater than before the operation.

VENTRAL HERNIA.

While ventral hernia is most commonly found at some point along the linea alba, yet it is not infrequent that it may be found at other points in the abdominal walls. To illustrate this, I will refer to a case which came under my observation in Columbus, Ohio,—a male, between 50 and 60 years of age, who had served his country in the Civil War. While in the service he sustained a ventral hernia which protruded through the muscular structures

of the left side, and at times became as large as the crown of an ordinary hat, and from the symptoms set forth involved not only the large and small intestines, but the left kidney. I was called to see him in numerous acute attacks and found not only constipation of a character indicating complete obstruction of the bowels, but also partial suppression of the urine, neither one of which was relieved until after the contents of the hernial sac were evacuated and the viscera which it contained were returned to the normal position. I suggested an operation a number of times, but he always objected, and said he would take his chances rather than have an operation, although the last time I attended him, which was nearly two years ago, it came very near costing him his life, and no doubt will, sooner or later, if he is not relieved by surgical interference.

The most common case of ventral hernia at the pres-



AFTER OPERATION.

ent time is the sequel of an abdominal section. A good illustration of this kind is shown in Case 121. Mrs. A. C. S., age 36, born in Scotland, married, and who was admitted to the Wyoming General Hospital April 16, 1898, gave the following history:

About five years previous to her admission to the Hospital she was operated on for a supposed ectopic pregnancy. In order that the operator might have a complete view of the abdominal cavity he made an incision which began at the ensiform cartilage and extended to the os pubis. This was followed by a large ventral hernia, which allowed almost the entire contents of the abdominal cavity to protrude through the opening which had been made in the abdominal wall, and which had never been closed, and for years had made such continued pressure on the integument that it was thinned down so as to leave a very fragile partition between the abdominal viscera and the outside world.

She was again operated on, April 18, 1898, which necessitated my making an incision almost the entire

length of the former opening. After making the incision through the integument, I found a very large opening through the abdominal wall, which measured nine inches in length and about three at the widest point. The muscles had become contracted, and around this opening was an oval, fibrous non-elastic band which I was obliged to dissect out completely, after which I brought the abdominal walls together with pyoktanin catgut, by the method already described, excepting that I used the interrupted instead of the continued suture.

This patient made an uneventful recovery, and was discharged May 10, 1898, after having been fitted with a double-legged Hamilton supporter, and so far as I have any knowledge, up to the present date has had no further trouble, but is able to continue her usual duties, and "trip the light fantastic toe" with ease and grace.

LABIAL HERNIA.

In looking over a dozen or more of the modern text-books I was very much surprised to find that labial hernia was seldom referred to, excepting where the viscera passed between the vagina and the ramus of the ischium. The case which I am about to report does not constitute one of this class, but is one in which the bowel broke through the abdominal ring, passed down the canal of Nuck, and descended into the labia majora. It is as follows: Case No. 561. Mrs. J. B. Z., married, white, age 22, born in Germany, when about four months pregnant, while doing a large washing, lifted a heavy tub of clothes and immediately afterward felt an intense and smarting pain along the line of the canal of Nuck, and this was followed by a tumor in the labia majora.

She was admitted to the Womans General Hospital Sept. 19, 1898, and was operated on the next day. An incision was made over the tumor, which was found to consist of small intestines which had found their way down through the abdominal ring and along the canal of Nuck, which was laid open to the external abdominal ring, after which the viscera were returned to the abdominal cavity; the redundant sac was amputated and the stump sutured with pyoktanin catgut in the external abdominal ring, after which the canal was subcutaneously closed with a continued suture, including the labia majora. This was followed by closing the integument with interrupted silkworm gut suture, after the manner already described in my former operations.

Notwithstanding the pregnancy, this patient made an uneventful recovery and was discharged from the Hospital on Oct. 5, having fully recovered.

She went on to her full term and was delivered of a large child, by my assistant, Dr. Chamberlain, without any return of the hernia, and is now in her normal health and suffers no inconvenience whatever. Her general health is good, and to all appearance there is no indication of the return of the hernia.

Deductions.—Notwithstanding that our text-books are filled with discussions on the various methods for operating on the more common forms of hernia, and that nearly every operator has his own method for repairing breaches in the abdominal cavity occurring in the inguinal and femoral region, yet, the report of the few cases given in this paper, of the rarer forms of hernia, shows conclusively:

1. That all cicatricial tissue must be completely removed.
2. That the most perfect apposition of the separated parts must be secured.
3. That strong, flexible, thoroughly sterilized and absorbable animal tissue should be used for subcutaneous

sutures, and that non-absorbable thoroughly sterilized suture should be used for approximating the integument.

4. That great care should be taken to avoid the possibility of necrosis, by shutting off the normal blood-supply, and thus not only preventing the absorption of the animal suture, but eventually causing the breaking down of the adjacent structures, thus deprived of their normal blood-supply, which is bound to complicate the case.

Remarks.—After having tried different kinds of animal tissues, prepared by different methods, for subcutaneous suture, I have obtained the best results from pyoktanin catgut, which I have prepared, by my chief nurse, under my personal direction. For over two years I have purchased my catgut in the raw form from a firm in New York, which experience has taught me, furnished a most excellent and reliable form of catgut. This is prepared, first by immersion in ether for not less than four days, after which it is wound on glass spools and immersed in a solution of 1 to 1000 pyoktanin in absolute alcohol, after which the jar containing the alcoholic solution of pyoktanin with the catgut is sterilized for one hour under pressure. It is my custom to have the catgut sterilized in this manner each time after it has been opened for use; this, however, will in time cause the catgut to become fragile, when it is thrown away and a new supply is prepared.

Catgut prepared in this way is not only strong, but very flexible, and, as a rule, is absorbed in from seven to nine days.

My objection to some of the other methods of sterilization is their overhardening of the animal tissues, thus preventing absorption of the suture after the parts have become repaired, when the catgut or other animal suture becomes a foreign body, and unless removed is sure to produce suppuration, if not promptly removed, very greatly to the annoyance of the operator and the patient.

By preparing catgut as above described, I have had the least amount of trouble in this direction. There are other methods for preparing it which make it pliable, but unfortunately when these are used it is absorbed too soon, and allows the wound to gap open before it has had time to repair, hence it has been my aim to adopt a method for the preparation of animal suture that will insure proper sterilization and at the same time will perform the services required, with as little additional demands on the economy as possible.

Conclusions.—It has been the writer's aim in the preparation of this paper to present only facts, and cases, which have come under his personal observation, and to report a few cases for illustration, and, briefly, the method by which they were operated on, and the results, in the belief that we should study the rarer forms of hernia, and their methods of repair just as well as the more common forms which are of every-day occurrence to all practical operating surgeons.

DISCUSSION ON PAPERS OF DRs. REED AND FERGUSON.*

DR. F. W. McRAE, Atlanta, Ga.—The cases which I shall report—I have not prepared a paper and did not intend to present one—of hernia of the diaphragm are unusual, and of such interest that I should like a few minutes to present them to the Section.

In 1894 I operated deliberately for hernia of the diaphragm. The patient had received a stab wound six months previously, that penetrated the chest and the diaphragm. The wound was treated without stitching the diaphragm. About six months later I was called to operate on him for acute obstruction of the bowels. There was a tympantile tumor presenting

*Dr. Ferguson's paper appeared in the Journal of July 1.

at the old scar. The operation was undertaken in the possible hope of giving relief. At the time of the operation I found the whole transverse colon, part of the stomach and small intestine in the left thorax. The lung was pressed up until it was not larger than my fist, occupying the apex of the thorax. This case I reported in detail elsewhere.

The other case occurred a few weeks ago; a negro woman, aged about 50 years, who gave the history of having had severe attacks of constipation for several years. She had been in the hospital on the medical side, for four or five days, with absolute obstruction of the bowels, before she was transferred to the surgical side. This obstruction had existed for two days prior to her having been brought to the hospital. As soon as the case was turned over to the surgical side, I had the woman prepared, and I operated at once, without any idea as to what the condition was. On opening the abdominal cavity, I found, tracing the distending bowel, that there was a knuckle of the colon which had passed through a small opening in the diaphragm. This was apparently a congenital opening, no larger than my finger; no hernial sac, only a small knuckle of the transverse colon—splenic flexure—passed into the opening. There was absolute obstruction. On enlarging the opening slightly, which was done without difficulty and without shock or interference with respiration, I was enabled to liberate this knuckle of intestine. This woman had had stercoraceous vomiting for several hours, and was vomiting when put on the table. The mistake I made here was that her stomach was not washed out. After withdrawing the hernial protrusion I was enabled to stitch the opening in the diaphragm with a continuous suture, without difficulty. This closure was done without any difficulty. There was no depression; respiration went on properly, but I killed the patient a few moments later.

The stomach and intestines were distended; she had taken all sorts of narcotics to make the bowels move, when it was absolutely impossible for them to move, and the whole upper intestine was filled with fluid feces. After the operation had been completed, without opening the intestine, which I should have done to let out this material, I attempted to press those intestines back into the abdominal cavity, and instantly there was a reurgitation and inhalation of the liquid; the woman was practically drowned; there was a large quantity of this material immediately taken into the lungs. I made two mistakes, in not washing out the stomach—it was an emergency case—and in not opening up those distended intestines and allowing that pent-up material to escape. I believe life might have been prolonged for a time. I am sure the woman might have been saved if an early operation had been done. There were no surgical difficulties present. I was surprised at the ease with which I was able to insert the suture and to close the opening in the diaphragm. The post-mortem showed that there had been a perfect closure of the opening in the diaphragm. The cure to operation in my first case was taken from Dr. Marcy's book on "Hernia," recommending operation.

CHAIRMAN—We have with us one of the pioneers in this sort of work, Dr. Marcy of Boston, and I would request that he come forward to the platform and open the debate on these excellent papers on hernia.

DR. H. O. MARCY, Boston.—Dr. Ferguson very properly called attention to the infundibular process, which unfortunately has usually been described as pertaining to the normal anatomy. This is not true, and in the well-developed man is only made to appear as a depression at the site of the internal ring by making traction on the cord. We are indebted to Clouet of Paris, who carefully describes it. He dissected over four hundred subjects having hernia in different stages of development, and not unimportantly describes the earlier conditions, where the internal ring was relaxed and the peritoneum depressed as anatomically normal. Quite to the contrary, I have satisfied myself that this is due to a defective closure of the parts case of the passage of the testicle through the inguinal canal. This leaves an inherent weakness of the parts, predisposing to hernia, which may not take place until even late in life. In the development of a hernia, as usually formed, the internal ring is depressed from above downward, leaving the cord in its lower border, forming a funnel-shaped depression, and, little by little the hydrostatic intra-abdominal pressure dilates the canal until the hernia is complete. Very naturally it becomes evident that the rational way of curing the hernia would be to reconstruct the parts to their normal anatomic condition, and this can only be effected by restoring the inguinal canal to its oblique passage through the abdominal wall, so that the intra-abdominal pressure is brought to bear at or near to, a right-angle with its long axis. The only other illustration of this rational closure of a canal in nature is the passage of the ureter through the wall of the bladder, from which, indeed, I obtained my first suggestion, which

taught me the necessity of the reconstruction of the inguinal canal for the cure of hernia, which necessitated two radical departures from that which had been hitherto taught as permissible. A free dissection, a separation of the peritoneal sac, quite within the border of the internal ring—the cord having first been carried upward, toward the median line—and sutured evenly across its long axis, and resected. The peritoneum thus freed should be as no depression at the site of the suture.

The internal ring is now closed. From below upward, quite on the cord, which lengthens the inferior border of the inguinal canal, to normal length. The cord is replaced and the external structures sutured over it, re-forming the external ring. It will be noted that in order to accomplish this the deeper layer of the sutures must necessarily be buried, that is, cut off and left in the structures. This was the first use ever made of buried animal sutures in surgery, and I deliberately applied them for this very purpose, after experimenting with them for a considerable time, in a long series of studies on the lower animals.

My first publication on the use of buried sutures for the cure of hernia was in 1870. Repeated publications on the subject followed in this country, catgut having been used for the buried suture. In 1881, at the International Congress in London, I read a paper on the subject, advocating the use of the tendon suture obtained from the moose and caribou. In 1884, at the International Congress in Copenhagen, I still further reported my experiences in the cure of hernia and there exhibited specimens of suture material, obtained from the tail of the Kangaroo, which I have since used in all my work, believing that well-selected and prepared tendon is superior to any other suture material. Bassini's first work for the cure of hernia, embracing the essentials as above outlined, was in 1886, and his first publication was made in 1888.

Our profession very justly demands of its members a free contribution of every advancement in science, making double the honor accruing to the contributor, since he may not profit in any other way. Names signify comparatively little, but I am not quite content that the operation for the cure of hernia, which I devised and have so long practiced in all its essentials, should not be at least accredited to American surgery.

Dr. E. D. Ferguson of Troy, N. Y., in a paper entitled: "The Operative Cure of Hernia in Men," reviews the subject with judicial fairness, and in this paper I refer any who may ask an investigation of this subject.

I am quite sure that the contribution of Dr. Ferguson is of value more from calling attention to the fact of the defective condition of the structures with which we have to deal, than from the importance of the obliquity of the external incision which he advocates. Most operators are more or less aware of these conditions, and the suturing of the structures which go to form the posterior wall of the canal must correspondingly vary. The atrophy resulting from the long wearing of a truss is a well-recognized cause. It is hardly possible to overestimate the importance of the proper reconstruction of the posterior wall of the inguinal canal, since on this depends, more than on any other factor, the permanency of the cure.

As you are aware, several operators have gone so far as to advocate the transplantation of the cord, even closing all the strong structures of the abdominal wall beneath the cord. This is especially faulty, in that the internal ring is no longer buttressed at its point of exit, and a direct hernia is likely to occur here.

I have operated on several such cases where the attempted cure had been made in this manner. Experience now warrants that hernia almost without exception admits of safe and permanent cure, and that its practice may be commended to every practitioner who is a master of aseptic surgery, and am I not addressing to-day an association whose members are competent practitioners of the science and art of modern surgery?

DR. LEONARD FREEMAN, Denver, Colo.—I wish to mention another case of hernia of the diaphragm. Some time ago I had a patient in my charge who, in cleaning a snoutgun, discharged the weapon so that the ball entered in the left axillary line and emerged near the sternum. The charge seemed to pass beneath the skin only; but he was not severely shocked, and said that he did not think there was very much the matter with him. I incised through the skin and found a large opening in the chest wall, through which I could insert my fist. I could catch the heart and hold it in my hand. I did not know at first what the condition was, but after examining carefully, I found, as Dr. McPhee has also stated, that there was a large portion of the stomach, colon, and intestines, in the pleural cavity; the lungs were up under the clavicle and considerable hemorrhage was going on. With considerable difficulty I succeeded in replacing the abdominal viscera and sewing up the wound in the diaphragm, which was three or

four inches long. There was no interference with respiration or with the heart's action. I could pull the diaphragm almost out on the chest wall in making the sutures. The patient recovered from the operation without serious symptoms. However, during the course of the night, about twelve hours, perhaps, after the operation, bleeding from the lung took place and the patient died of internal hemorrhage.

DR. H. A. KELLY, Baltimore, Md.—So much work is done in original lines in Baltimore, I wish, with Dr. Marcy, to urge very strongly the propriety, no, the decency, of considering American claims first when American publications are prior to those of foreign authors. (Applause.) When it comes to the transplantation of the cord in hernia, getting rid of the weak point, I want all to speak not of the Bassini, but of the Halsted operation, and if you will take a little bit of trouble and consult the records you will see that Dr. Halsted's publication antedated that of Bassini's. In bad cases, in Baltimore, we find that the ordinary suturing operation—and we always use non-absorbable sutures, in spite of my good friend's (Dr. Marcy's) claim that the absorbable is necessary—in bad cases, is not satisfactory; that the only operation which gives us a guarantee of success is transplantation of the muscle—muscle-plasty—bringing over the rectus muscle, as devised by Dr. Bloodgood. It sounds like bringing a bit of distant tissue from the neck over the ring, but you will notice that the border of the rectus muscle is close at hand and can be brought over the ring. Where we have had recurrences after the most careful operation was performed, they have been cured by this method, and we have had no relapses when the rectus has been drawn over the ring and used to close this.

DR. D. W. CUSHAM, Chicago—Since the question of priority and dates seem to be the order of the day, I think it both proper and right for me to state here that I claim to have first proposed the use of the sartorius muscle to strengthen the inguinal region in certain cases of old hernia; for I see Dr. Ferguson claims the idea as original with him, and has so labeled it in his printed paper. It is proper to state also, that the idea was suggested to me by reading of a cadaver experiment by a Dr. Kelly of New York, in which he used the fascia connected with the tensor vaginæ femoris muscle for this purpose. It occurred to me that the sartorius muscle might be utilized to better advantage and with more promising results. My opportunity came in April, 1895, and in May of that year, when the subject of hernia was under discussion at the annual meeting of the Illinois State Medical Society, I reported the case with details of the procedure. I withheld the report from the Transactions of the Society for the reason that I wanted to improve the technic and add other cases before publishing or recommending the method to the profession. I have not had a case since in which the procedure was indicated, and in which I could get the consent of the patient. As a plastic operation, the one I reported was only a partial success, because of avoidable technical faults, the chief one of which was hemorrhage occurring after the wound was closed, which caused the stitches to break away and the end of the muscle where it was sewed to the border of the rectus to slough. The patient was a man of about 60, with a very large inguinal protrusion and defective abdominal muscles. He had already been operated on three or four times by other surgeons, but without benefit.

DR. J. P. LORD, Omaha, Neb.—Apropos to Dr. Reed's paper, in which he speaks of ventral hernia, and hernia of the linea alba, I want to state this experience. In operating on a case of very large umbilical hernia in a woman weighing 300 pounds, who had had repeated pregnancies, the last of which resulted in twins, I found, in addition to this very large umbilical hernia two large hernie of the linea alba in addition, one with a tumor of the omentum, the size of a Bartlett pear, and the other the size of an ordinary hen's egg. These were between the umbilical hernia and the ensiform cartilage. I do not recall having seen in my researches reference to multiple hernia of this kind.

DR. J. B. BULLITT, Sr., Louisville, Ky.—Overlooking, for the time being at least, all questions of priority and the various operators, American and otherwise, I would like, for a few minutes, to discuss the papers, especially that presented by Dr. Ferguson. The curved incision seems unquestionably to afford some points of advantage, which have been already pointed out by Drs. Thomas and Lee incidentally. Concerning, however, the further procedure as mentioned by Dr. Ferguson, I fail to see that it accomplishes the restoration which he seems to believe it does. As Dr. Marcy and Dr. Kelly have mentioned, referring to the method practiced by Halsted, of transplantation of the cord, the cord, instead of being restored to its original oblique anatomic position high up, is depressed downward by bringing the internal oblique muscle to Poupart's

ligament above this cord. The valve-like structure at this point, instead of being restored by Dr. Ferguson's principle, has been prevented from recurring. On the other hand, Bassini's operation does just the reverse of this; it closes the lower portion of the ring where this depressed condition of the cord has occurred, transplants the cord above to exactly the position where Halsted would place it, and restores the parts as Dr. Marcy has shown us on the blackboard, beautifully and simply, to their proper anatomic relations. Concerning the question of suture, I must agree that while my experience is very limited as compared with Dr. Marcy's, and with many other gentlemen's, I must say that this incident of breaking down of the tissue underneath the suture or with the buried cumul suture does occur and is a most distressing one. This has not always been caused by direct infection. I believe that hemostasis is not always complete and that a blood clot forms here; if any bacteria are introduced along with the sutures, they find fertile soil for development in this blood clot. Therefore, I agree with Dr. Lee that the radical cure of hernia would seem to offer a very reasonable and hopeful method of closing these wounds. Concerning the question of the buried silver-wire suture, despite the authority which we have from Baltimore—which is one of the Meccas of American pilgrimage in our day—the majority of the profession will scarcely come to adopt this method. In Louisville we are still taking out the sutures put in in Frankfort.

DR. FRANK WARNER, Columbus Ohio—I wish to emphasize the early operation on hernia. I believe too many of the works hamper you with a lot of suggestions that you will operate on a hernia when there are certain conditions this, that way and the other, but I believe the sooner we come to perform an early operation, aside from children and perhaps in old age, when they can get along by the use of a truss, the better we are going to be; the more sure we are going to be in having a satisfactory termination in our operations for hernia, in operating before hernia have become so large on the one hand that the parts are distorted and all of them weakened by the disturbance of nutrition, circulation, enervation, and so on, and the sooner we emphasize the matter to operate earlier, the greater success we will have.

DR. THOS. H. MANLEY, New York City—For some years I have given special attention to surgery of hernia, and there is no other subject that has had greater fascination than the history of the surgery of hernia. What strikes me particularly is the fact that practically all the modern operations had been done in pre-antiseptic times, one after the other, to be gradually dropped and displaced by another. It appears that in the last ten years, there have been something like 150 operations recommended for the cure of hernia. I was somewhat amused this afternoon in the discussion on the technic of operating for hernia, and our claims about the operation known as the Bassini, because I certainly was taught that Bassini's operation de-troyed the inguinal canal, while the aim of Marcy's original operation was to restore it. As I understood the Marcy operation, the clinching feature of it was that he restored the inguinal canal.

The Bassini operation destroys the whole thing. If they can prove the contrary to what Dr. Ferguson has so well brought out this afternoon, that the functions of the testes are greatly impaired by displacing the spermatic cord, I will agree there is a very serious objection to the Bassini operation. There are some very important points which the reader has entirely failed to take up. You notice in the beginning that this operation, as described, applies to only one type of hernia, to the complete inguinal in the adult; and the majority of our operations which are being done for hernia nowadays, are on infants and children. The infant has practically no inguinal canal. The key to the whole situation, in operations for inguinal hernia, in my experience has been, and I have had no reason to change it one iota, that the best operation for the so-called "cure" of reducible hernia is that which should be the simplest, which is attended with the least mutilation of tissues, with the least loss of blood, and performed with the greatest rapidity.

DR. SAMUEL E. MILLIKEN, Dallas, Texas—At the time I read my first paper on Bassini's operation, before the Texas State Medical Association (*Med. Record*, 1892), there were many skeptics as to the possibility of a radical cure. When I began the reconstruction method ten years ago I employed catgut, but some years later my friend, Dr. Marcy, got me to using kangaroo tendon. It has been my misfortune to have been compelled to remove these stitches three months after an operation when primary union had been obtained.

DR. MARCY—You ought to have left it alone.

DR. MILLIKEN—It came to the surface.

DR. MARCY—You didn't bury it properly.

DR. MILLIKEN—The buried suture has always been a diffi-

cult problem, and I hope the longitudinal silver wire solves it for all time. Catgut, I am convinced, does not last long enough and offers an additional danger of infection. I wish to congratulate Dr. Lee and Dr. Harris for offering us a satisfactory suture material for the deeper structures in hernia work.

In 1892 I called attention to the method of dividing the aneurismosis of the external oblique by passing the grand director into the external abdominal ring almost longitudinally, instead of running parallel with the fibers—this for the purpose of giving a longer external or lower flap, at the same time caused the various layers of sutures to be in different lines and not directly over each other.

Dr. J. E. MOORE, Minneapolis, Minn.—In the matter of umbilical and ventral hernia, mentioned by Dr. Lord, I wish to bear testimony to the fact that it quite frequently occurs above the umbilicus. I have operated on patients who had been treated for years for dyspepsia and all sorts of intestinal disturbances, who were really suffering from small omental hernie, sometimes so small that they were not larger than the end of my small finger, and many times they were unknown to the patient. I have generally found those hernie in the median line, quite frequently a little to the left; I never found any to the right. I have found, too, on examination, that the patient knew nothing of it. I would call his attention to the fact that there was a little lump there and he would say that he never would have known it. They come through the small opening and they can be sewed up, as you know. I have been interested here, because we have a multiplicity of operations, which I believe is very desirable. As one has said, it is not well to limit ourselves to one operation. Who is there here who would always perform a hysterectomy or a simple amputation by the same method? Why should we always undertake to perform a herniotomy by the same method? We have a multiplicity of methods and we should consider, in performing any radical cure of hernia, the sole idea of doing that particular patient the most good. (Applause.) You can not always bring that about in the same method. In the matter of suture, my patients in whom I have buried nonabsorbable material, have stayed at home and I have been removing those sutures myself. When we perform an operation for hernia, either we get primary union or we do not. The success of the operation for hernia depends on the presence of asepsis. If our wound is aseptic, union will take place in a very few days. It does seem to me that sutures are not needed to hold four and five weeks. As I say, either you get union or you do not. Taking, as a matter of illustration, a simple amputation wound, if you get primary union you are satisfied; if your stitches will hold for six days you get a good result; if you fail to get primary union, you remove your sutures, because they are a nuisance and they are doing harm. Why not apply the same principles to the same operation for hernia?

Dr. A. J. OSCHNER, Chicago.—I think that Dr. Ferguson's paper is worthy of careful consideration and discussion, because it is based on very careful and extensive anatomic study. His diagrams bring out the conditions present, with great clearness, and on this foundation he has developed an operation which is logically superior to most of those heretofore described. I saw Dr. Adams of Glasgow use the same curved incision in 1895. In 1897 I saw Dr. William T. Bull, New York, perform the operation Dr. Ferguson has just described, with the exception of the external incision. He obtained most satisfactory results by this method. I do not know whether it was original with him, nor how long he had practiced it, but the fact that several eminent and thoughtful surgeons have developed the same method speaks well for it. This method seems to me to have some advantages over the Halsted operation, from the fact that it does not disturb the tissues to so great an extent, and leaves them more nearly in a normal position after the operation has been completed. In the Bassini, as well as in the Halsted, there is often a tendency in the fibers above the internal abdominal ring, to separate and to permit the development of a recurrence at this point, while the remaining portion of the abdominal wall remains perfectly intact. Our distinguished president, Dr. Mayo, has overcome this difficulty by placing a stitch through the tissues just above this point, before beginning to suture the conjoined tendon to Poupart's ligament. A most important point in all hernia operations consists in not drawing the sutures too tightly, because the pressure necrosis which results from tightly drawn sutures always leaves a comparatively weak scar, and predisposes to suppuration.

Dr. C. E. RUTH, Keokuk, Iowa.—The large number of diagrams which we have had here and the number of papers tend to put us about in the same predicament that we are in with the long list of remedies recommended for the cure of diseases—that either of them are worth anything or altogether are valueless. If we look closely at this, however, and the methods

of the men advocating them, we will find that underlying all of these incisions and methods of suture there are the same principles almost identically. We have the statement that men, whose veracity we can not question, accomplish certain results almost invariably with an absorbable material, and men who are just as careful in their work, so far as we know just as skillful, fail to get primary union; they have suppuration, and they use the same material, and so we are led to form our own conclusions as the result of our own experiences. We must each come to the point that we can not expect to follow, unvaryingly, the method of any one man, but that method which in our hands gives the best results. I must say that, despite all care that I have been able to exercise with absorbable and non-absorbable material, I have had considerable trouble, occasionally with infection, either early or late, and every one of these methods has its little advantage. But I want to thank the gentlemen, especially for myself, who have advocated so nice and timely a method which will enable us to use a removable, non-absorbable material that will do no harm.

Dr. F. W. McRAE, Atlanta, Ga.—I have had occasion lately to look up the statistics of inguinal hernia, and it seems to me that where one individual surgeon, whose veracity is unquestioned, has done 514 consecutive operations with one death and 5 per cent. of recurrences, he uses a pretty good method of procedure. Dr. Coley has had such results; and Dr. deGarmo's and Dr. Marcy's results are practically identical. They all use the same suture material—Kangaroo tendon. My personal experience is practically limited to the use of kangaroo tendon for closing the deeper layers. I have used silk and catgut only a few times. I have never had suppuration follow the use of kangaroo tendon, except in three cases recently operated on in the Grady Hospital. I am sure that the infection in these cases was not due to the suture material. Unfortunately I had in my service at that time several cases of intense streptococcal infection. We did not wear gloves, and I do not believe it is possible to thoroughly sterilize hands that have been bathed in intensely infectious material, only a short time before the operation, by any known method. The external surface of the skin may be rendered sterile, but prolonged manipulation brings the infection from the deeper layers of the skin, and suppuration is the result. Another important point is the size and kind of kangaroo tendon used. If very large stiff kangaroo tendon, such as is sold by many dealers, is employed, trouble will result sooner or later in many instances. But if the small tendon from the young kangaroo is used it will be absorbed in a reasonable length of time, but still give sufficient support. Non-absorbable deep sutures give trouble in a certain proportion of cases. I have had to remove both silk and silver-wire sutures that had been buried for many months. I think silkworm gut much worse than either silk or silver wire.

Dr. J. B. MURPHY, Chicago.—I wish to mention a method of closing openings in diaphragmatic hernia, the same as I devised for a case of bullet wound, viz.: open the thorax posteriorly, by an osteoplastic flap of the chest wall, which allows a fine exposure of the convex surface of the diaphragm. The hernia is then reduced and the opening in the diaphragm closed with catgut sutures, the flap replaced and the air aspirated out of the pleural cavity. I am now in competition with my associate, Dr. Lee, as to who will get the best result. Dr. Lee is using the deep non-absorbable, subsequently withdrawn silkworm gut suture. His results have been beautiful. I am using Marcy's kangaroo tendon, and I am going to try to overcome him if I can.

Dr. M. L. HARRIS, Chicago.—Early infection is due to the introduction of germs at the time of the operation; late infection to the transmission of germs along the sutures from the skin to the deeper structures. In the buried absorbable sutures we have two difficulties: 1, the aseptic suppuration of Poppert; 2, the hyaline degeneration which occasionally occurs about absorbable sutures. While these conditions are not dangerous to the life of the patient, they do weaken the line of union. All methods which transplant the cord are objectionable, as they have been followed in a large percentage of the cases by atrophy of the testicle. The value of the silver-wire longitudinal suture has been demonstrated by the remarks made by most of the gentlemen. It secures the most perfect coaptation, it produces the least possible amount of connective tissue and hence the greatest strength of union. The cord should, when possible, be re-tored to its oblique position, as this gives, anatomically, the greatest strength to the abdominal wall.

Dr. A. H. FERGUSON, Chicago.—When this Temple of Hernia is complete, and when we are all gathered home to dedicate it, then we shall give distinction to the man who laid the first stone and the different stones. It is now looking for priority, but looking for that which fulfills indications that is stimulating us to bring forward the best methods for the radical cure of

hernia. The imbecilic assertion that a certain man does not do a semilunar incision with the idea of the hernia returning should not be laughed at. No one operates on a hernia with the idea of the hernia returning—it matters not what the incision is. The transplantation of the cord is bad. There is no possible reason for transplanting it, except that it fills a gap where the origin of the internal oblique muscle is deficient. If the origin of the oblique muscle is sutured where it belongs, then, there is no reason for raising the cord out of the bed. I have had bad results; I have had plastic inflammation of the testicle following atrophy and destruction of one testicle. That cord should be left alone. The recommendation of splitting the sheath of the rectus muscle and bringing it over is an excellent thing in certain cases—a small percentage—and Dr. Bloodgood, who invented that method, is not as sanguine of bringing it forward as the gynecologists are. It should be used when there is a deficiency, but not when the typical operation can be performed. The typical operation for the radical cure of hernia leaves all structures where they belong. It is surprising, the lack of knowledge as to the presence of the internal ring. It is only a small percentage when it is pushed downward. When you have tied off your sac you have the internal ring at the epigastric vessels, and almost invariably in normal cases; in sixty cases out of 100, you will find—that is the kind I operated on—that the internal ring, after tying the sac, is in its normal place, and then all you have to do is to restore the structures. The obliquity of the canal is restored by tying the sac. It is not necessary to bring the structures underneath the cord. There is another objection to that. There is neuralgia in the region of the hernia on account of the constriction of the nerve sometimes. When the cord is left in its bed, there is no neuralgia.

DR. R. HARVEY REED, Rock Springs, Wyo.—It seems to me that the papers and the discussion which we have heard this afternoon have developed this difficulty, if they have developed anything at all, that is, that it is absolutely necessary—it matters not what kind of suture you use, whether it is animal, silver, iron, silk, or silkworm gut. It is necessary to approximate the parts perfectly, it is necessary to have a complete and thorough blood supply; it is necessary to get rid of your foreign material at the earliest possible moment. If you do not obtain this, you are going to have a foreign body which will, sooner or later, produce irritation, followed by suppuration, and the result of that operation is going to be a failure. Then it remains as to the character of the operation—the nature and the condition of the parts on which you are going to operate—as to which one of these particular sutures or methods of suturing is to be used, but you have to carry in your minds, distinctly and clearly, the principles that underlie the repair of wounds, and when you have done this, brought the parts to their proper place and held them there until Nature restores them, then your suture is of no further use. To get a suture that will do this is one of the most difficult matters to determine, because we may purchase from the very same manufacturer the same quality of catgut, as far as we are able to tell, and the result is different when sterilized in the same manner. You purchase the kangaroo tendon and you sterilize that as before, and one time will have union by first intention and the next time you will have suppuration. I have seen cases in which there was not vitality enough to have a foreign body absorbed, and others where the catgut is absorbed too soon; one instance I remember very distinctly, in which the kangaroo tendon was used when the sutures dissolved and were not absorbed, but remained there as gelatinous material, resembling melted glue.

DR. E. H. LEE, Chicago—I am pleased to hear that so many surgeons acknowledge that they have more or less trouble—more or less infection. At the present stage of modern surgery, I do not believe that anybody can say that he is master of aseptic surgery. It is impossible to say positively that you are going to operate "clean." During the college year of the College of Physicians and Surgeons, Chicago, Dr. Murphy and myself operated on several hundred cases at the West Side Hospital, and during this period of time I do not remember having seen infection in clean cases, this including several hernias, yet the time may come when we will have a series of infections; this can not be avoided. We can not always avoid the unpleasant complications which may follow an infection. It is for this reason that I have advised this method of suture.

DIPHTHERIA and scarlet fever are becoming quite prevalent in Chicago, especially since the opening of the schools. The health authorities say that the outbreak is a result of neglect of the school authorities, while the latter deny this.

FIBROSARCOMA OF ABDOMINAL WALL.

DESMOID FIBROMA BEGINNING IN POUPART'S LIGAMENT AND EXTENDING AROUND THE ILLIAC VESSELS INTO THE PELVIS—REMOVAL WITH RESECTION OF THE ABDOMINAL WALL AND EXTENSIVE DISSECTION OF THE ILLIAC VESSELS—REPAIR OF DEFECT IN ABDOMINAL WALL BY PLASTIC OPERATION^o.

BY ALBERT I. BOUFFLEUR, B.S., M.D.

Assistant Professor of Operative Surgery, Rush Medical College; Chief Surgeon, Monroe Street Hospital; Attending Surgeon, Cook County Hospital; President International Association of Railway Surgeons, etc.

CHICAGO.

Tumors of the abdominal wall are comparatively rare, and of the varieties found, fibroma comprises nearly 90 per cent. Fibroma of this locality presents some peculiar features which make it a subject of much interest to the pathologist and to the surgeon. According to the collection of Guerrien, as given by Senn¹, nearly 93 per cent. occur in women. It usually follows childbed, and trauma is the common determining cause. The tumor usually begins in the fascia in the lower segment of the abdominal wall and particularly about the crest of the ilium and the sheath of the rectus muscle. It has a marked tendency to extend inward; and may readily be mistaken for an intra-abdominal growth.

This tumor presents certain characteristics which make it difficult of classification. The tumor itself presents the histologic characteristics of a fibroma, but it manifests a marked tendency to infiltrate adjacent tissues and to recur after enucleation, but complete excision usually effects a permanent cure. Some authors classify these tumors as fibrosarcomata, while others consider them as a peculiar variety of fibromata. Nélaton early recognized their peculiar features, as did Mueller, who, to distinguish them from simple fibromata, designated them as "desmoid fibromata." The term "desmoid" would, according to our standard dictionaries, indicate a tumor springing from a fascia or a ligament. Senn, in his work on tumors, again calls attention to the peculiar features of these fibromata, and advises the retention of the term "desmoid" as a special designation for those tumors which begin in the fascia of the abdominal wall, which present histologic structure resembling fibroma, and which seldom recur after total extirpation, but which manifest a tendency to infiltrate adjacent tissues and to return after simple enucleation. Many will readily recognize in this description some of the characteristics of sarcomata, and, I believe, all will agree that the tumor occupies a peculiar indefinite position on the border line between the benign and the malignant. It probably represents a transitional stage in the transformation of a fibroma into a sarcoma, and the degree of infiltration would seem to indicate the extent to which that transformation had progressed. While most desmoids occur in the abdominal wall, they may occur in other localities. Professor Le Count has informed me personally that he has examined two specimens of desmoid fibroma taken from the male breast and the one from the neck.

The case upon which this report is based is as follows:

Miss —, 20 years of age, a well-proportioned lady of nearly six feet in height, and weighing about 250 pounds, was brought to me by the family physician, Dr. J. A. Crowell of Iron Mountain, Mich., for examination.

^oPresented to the Section on Surgery and Anatomy, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

¹ Pathology and Surgical Treatment of Tumors.

The following meager history was all that could be elicited. Between two and three years previously she had noticed a drawing sensation in the right side. Upon stooping, she experienced pain in the right inguinal region, which was also noticed after long walks, and especially during menstruation. Her principal, in fact only, marked pain was during menstruation, which was invariably referred to the right side of the lower abdomen. She had never been pregnant, and did not remember having sustained traumatism of the parts.

In about June, 1897, nine months previously, she first detected a swelling deep in the groin, and about two months later a physician examined it, at which time it was apparently the size of an orange. It had not been particularly painful upon manipulation, at any time. During the last three months there had been a rapid increase in the size of the swelling and the pain had also increased.

Upon inspection, a large protruding swelling could easily be observed, with the patient in either the erect or recumbent posture. By palpation we were able to determine a very firm, fixed swelling, apparently of the size of one's head, situated in the right inguinal region and projecting into the hypogastric region. The unusual obesity of the patient made the size of the swelling appear much larger than it actually was. The upper border was well defined, while the lower border seemed continuous with Poupart's ligament. The surface was generally smooth and regular, but a slight nodular irregularity was noted.

Vaginal examination was quite unsatisfactory, on account of the size of the patient and depth of the pelvis. A somewhat indefinite, irregular and tender swelling was detected in the right pelvis near the brim. No direct connection with the uterus could be determined at the time of the examination. Examination of the lower limbs failed to detect any disturbance of the circulation or nutrition of the corresponding one. No glandular enlargement was detectable anywhere.

Dr. Crowell had made a careful examination of the patient and had diagnosed the condition as one of probable sarcoma or fibroma. From the clinical history and examination we concurred in the diagnosis, and from the location and peculiar features of the case we believed that it was one of those quite rare cases of fibroma of the abdominal wall, classed as desmoid. From its primary location the tumor had begun in Poupart's ligament and gradually extended inward and upward, involving all the ligament and a large section of the abdominal wall, and completely filling the iliac fossa, with a portion projecting into the pelvis. The extreme thickness of the natural abdominal wall of this patient precluded a definite outline of the growth.

In view of the very rapid growth of the tumor within the preceding three months, the transformation of a fibroma into a sarcoma was suspected, while the size and attachments of the tumor impressed us with the great difficulties which would be encountered in its excision, and notwithstanding that there was a strong probability of our being unable to completely remove the tumor, we decided, in view of the perfect health of the patient and the absence of any edema or other evidence of disturbed circulation in the limb below, indicating involvement of the blood-vessel walls, that there was a possibility of its successful removal and that the patient should be given the benefit of the possibility.

The seriousness of the situation, which had already been presented by the attending physician, was again stated to the patient and relatives, and the operation

decided upon. As the hospital was full at the time, the patient returned to her home and a week later we operated, with the assistance of Drs. Crowell, Wescott and Cameron, and with Drs. Carpenter, Lockett and Menistrana present. Schleich's anesthetic compound of ether, chloroform and benzoin was skillfully administered by Dr. Cameron. Preparation of the operative field and the hands was thoroughly made by soap and brush, and alcohol only. No other chemical disinfection was made.

An incision 10 inches long was made over the most prominent part of the tumor parallel to Poupart's ligament and just below the lower abdominal fold. Upon dividing the exceedingly thick layer of adipose tissue, nodules of the tumor were observed, involving and projecting through the aponeurosis of the external oblique muscle from the indefinite creases of Poupart's ligament upward for about five inches. The projecting masses were smooth, dark in color, and very vascular. Having in mind that the principal element of success in the operative treatment of such tumors was the complete, even more than complete, removal, we made an incision vertically from the anterior superior spinous process and carried it in a curved direction above and around the tumor to the pubic spine. The whole thickness of the abdominal wall was incised. The attachments of the tumor seemed very slight below the muscles, and extirpation progressed rapidly.

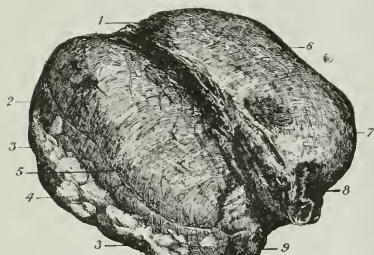
Our hopes for a rapid enucleation of the deeper portion were dispelled by encountering a large lobe of the tumor in the depth of the iliac fossa, which was of larger size than the superficial portion, and which was separated from it by a deep furrow corresponding to the location of the lower abdominal fold. The inner end of the tumor was firmly connected with the pubic bone at the attachment of Poupart's ligament, with which structure it was inseparably connected throughout its whole length. To remove the deeper portion of the tumor, it was found necessary to resect an oblong section—more than 5½ inches—of the peritoneum, which was intimately attached to the inner lobe. The great thickness of the abdominal wall made separation of the deeper portions exceedingly difficult, and as the tumor dipped into the pelvis the dangers of a blind dissection can readily be appreciated. It was impossible to view the deeper parts of the wound with the tumor *in situ*, and when the tumor was elevated the femoral pulsation would cease, which confirmed our fear that it surrounded the vessels and that enucleation was impossible. As our attempt at its removal *en masse* was unsafe, and, as I believe, impossible, a *horizontal* section was made, and the greater part of the tumor, with all of Poupart's ligament and part of the fascia lata was removed. Fig. 1 shows the outline of the tumor and its relation to Poupart's and the round ligaments, and to the peritoneum.

Upon investigation we found that the tumor had extended along the iliac fascia and that the lower part of the iliac fascia and the outer part of the right broad ligament were occupied by the remaining portion of the tumor. The iliac vessels were completely surrounded by the tumor for a distance of five inches. From the soft, friable and vascular character of the tissues remaining we feared that the tumor was no longer a simple fibroma, but instead a more rapidly growing sarcoma. From an operative standpoint it was also evident that the difficulties of the operation had only begun. The complete removal of the tumor was considered by those present as practically impossible, and the danger of

damaging the vessels was so imminent in a wound of such great depth, that one would have been justified in abandoning the attempt. With the conviction, however, that the growth would return, unless completely removed, we decided to continue the extirpation as long as the patient's condition would permit. We accordingly rapidly dissected away the iliac part of the tumor including the iliac fascia, and began the tedious work of dissecting out the iliac artery and vein, whose walls were infiltrated throughout their whole extent by the tumor. You will recall the absence of any circulatory disturbance in the record of the examination, which must be accounted for by the fact that the lumen of the vessels had not been encroached upon.

The room in which we operated was lighted by low south exposure windows, and it was necessary to turn the patient on her side, and to allow the sunlight to fall directly into the wound to light up its deepest parts. While rapid completion of the operation was desirable, it was, as you will readily appreciate, absolutely impossible and palpably unsafe under these circumstances.

We succeeded in removing every particle of the tumor, and in doing so it was necessary to remove considerable of the external coat of the external iliac artery throughout nearly its whole length. Only a slight hemorrhage was encountered, and that was due to the necessary division of the circumflex iliac vein and the small arterial branches to the psoas muscle, as we had previously ligated the internal epigastric and internal circumflex iliac arteries.



DESMOID FIBROMATA OF ABDOMINAL WALL.

1. Muscular fibers of internal oblique. 2. Point of attachment to ant. superior iliac spine. 3. Poupart's ligament, attenuated. 4. Fat in groin. 5. Cut edge of aponeurosis of ext. oblique. 6. Dup. lobe of femur partially curved by peritoneum. 7. Portion of femur projecting into pelvis. 8. Round ligament. 9. Attachment of Poupart's ligament to spine of pubes.

The ovary of the right side was found to be large and to contain one cyst the size of a small hen's egg. As the operation wound was already of startling size, we did not care to add any additional and avoidable elements of danger to the case. The condition of the ovary would certainly have justified its removal, but under the circumstances I believe its being left alone was the best surgery.

With the tumor removed and an immense excavation in the side extending down into the broad ligament and presenting the iliac fossa and Scarpa's triangle as one space, the last difficulty was encountered—how to close the large defect in the abdominal wall. We did not have time for meditation and the formulation of any elaborate method of closure, and, therefore, decided to simply follow the same principles as I do in hernio-

my: 1, close the peritoneum; 2, restore muscular continuity; 3, secure tendinous or aponeurotic support; and 4, close the skin over the deeper structures, but not to utilize it in any way as a supporting element in the closure of the defect, nor to include it in the deep sutures.

The peritoneum was closed from the side of the bladder to near the crest of the ilium. While the closure in the pelvis below the vessels was difficult, the great protection to the dangers of a possible infection made it seem imperative to close it absolutely. This procedure transferred the iliac and part of the pelvic fossa from intraperitoneal to extraperitoneal cavities. As a large resection of the muscles of the abdominal wall had been made, we split the fibers of the rectus abdominalis and the sartorius and sutured them across the defect, connecting them externally with the divided internal oblique.

To fortify this delicate muscular layer I split the remaining aponeurosis of the external oblique parallel to and about four inches above the line of resection and slid it downward so that its lower edge occupied the position of the removed Poupart's ligament, and fixed it there by sutures. This gave us normal muscular support without aponeurosis of the external oblique above and artificial muscular support with normal aponeurotic support below. In addition to these elements of support we calculated that the large cavity would be filled



DESMOID FIBROMA, RESULT OF PLASTIC OPERATION.

with scar tissue which would directly support the abbreviated peritoneal wall and would also lessen the pressure on the overlying support which we had constructed. The skin was sutured and a gauze drain inserted, to be left for two days.

The wound healed promptly within ten days. The patient maintained the recumbent posture for four weeks, and wore an abdominal support for six months. The result has been much better than we anticipated; in fact it is absolutely perfect, both as to contour and as to support.

I examined the patient three months after the operation and could find no return of the tumor and absolutely no evidence of a ventral hernia or any weakness of the abdominal wall. When the patient stands up now there is no deviation from the normal contour noticeable, and even the scar is practically out of sight in the abdominal

fold. Lateral exposure also fails to show any bulging of the abdominal wall. Fig. 2 shows perfect Poupart's fold and appearance of scar on raising of pendulous part of abdominal wall. The cyst of the ovary has practically disappeared.

The absence of the return of the tumor within fifteen months warrants the conclusion that the radical operative treatment was perfectly successful, and the absence of a ventral hernia evidences the fact that even extensive defects of the abdominal wall can be successfully repaired by plastic utilization of the remaining normal structures.

Microscopic examination of the various portions of the tumor have kindly been made by Professor Le Count, who confirmed the clinical diagnosis of desmoid fibroma, and submitted the following histologic examination: "From the section of the entire tumor, which was cut in a fresh condition, a number of small pieces were selected. These exhibited small variations in color and consistency, but histologically were all found to contain essentially the same features, viz., well-fibrillated cells with scanty amount of intercellular substance. Such blood-vessels as were encountered resembled sinuses with atypical hyaline walls. The above-mentioned variations were judged to be due to difference in the amount of blood and to edema."

CHRONIC VOLVULUS PRODUCED BY ABSORPTION OF A MYOMATOUS TUMOR AFTER SALPINGO-OOPHORECTOMY: A CLINICAL NOTE.*

BY JAMES F. W. ROSS, M. D.
TORONTO, ONT.

I intend to place on record my experience with a rather rare disease, a disease that has not been much written of and certainly is rarely seen. It is not my intention to discuss the subject of acute volvulus nor of acute intestinal obstruction, but the subject of chronic volvulus, chronic intestinal obstruction lasting over a considerable period of time, an obstruction partial, not complete, and an obstruction that may at any time become complete, and set up symptoms of acute intestinal obstruction.

I find a record in the *British Medical Journal*, of a case reported to the Manchester Pathological Society, by Dr. Ashby. He showed the pathologic specimens removed from the abdomen of a man, 19 years of age, who had been subject to attacks of vomiting for two or three weeks from the time of his birth. He had frequently vomited large quantities of fluid during a single night. The exhaustion of these vomiting attacks was sometimes very great, and appeared to be almost fatal. Errors of diet seemed to invariably bring on the attack. After one of these attacks of vomiting he had acute obstruction of the bowels, peritonitis supervened, and he died. The post-mortem examination showed the immediate cause of death to be an acute volvulus involving nearly the whole of the small intestine, the last few feet of the ileum being twisted from right to left around the upper portion of the jejunum below its junction with the duodenum, the latter being twisted on itself in axis. The stomach was found immensely distended and hypertrophied; the duodenum, also dilated, like a second stomach. The lower part of the duodenum and the upper part of the jejunum were surrounded and in part constricted in front by fibrous adhesions, with some

cretaceous deposit, the result of old—probably fetal—peritonitis. About six inches were thus bound down. There was no complete obstruction, as a forefinger could be readily passed through the narrowest part.

We have here a case of chronic volvulus producing an obstruction of the bowels lasting over a number of years. A little extra twist may at any time make such a volvulus acutely felt so that the result may be disastrous to the patient. I have two cases to record, one of which suffered from volvulus on several previous occasions, and was operated on by me during an attack of acute volvulus, made a good recovery and has never since had a recurrence. The second case is one to which I wish especially to draw attention:

CASE No. 1.—Mr. F. A. G., aged 35, was seen by me in consultation with his physician, Dr. Webster of Toronto, on Feb. 15, 1897. I diagnosed the case as one of acute volvulus. The diagnosis was based on the peculiar appearance of the abdomen. Beneath its walls could be distinctly noticed a tense, curved mass, looking like a piece of bologna sausage hanging over a line. I learned on questioning the patient that he had on previous occasions suffered with similar attacks, but that after the administration of high enemata he had obtained relief. In this attack he stated that he had been taken sick five days before I saw him. While lifting a box he felt a sudden pain in the abdomen. The doctor was not called in until the next morning. No movement of the bowels could be obtained. Purgatives were administered, but were ineffectual. Two professional nurses endeavored to give enemata but could not get the water to pass up beyond the rectum, owing to some obstruction. A small amount of blood and slime came away per enema. The doctor thought the case might be one of intussusception, but I differed from him, owing to the peculiar contour of the abdomen. I advised immediate operation, and operated in the afternoon of the same day.

The abdomen was opened in the median line, an enormously distended and very much lengthened sigmoid flexure popped out of the incision and protruded from the abdomen from twelve to sixteen inches, and stayed straight up like the finger of a glove blown up with air. It appeared to be almost as large as a man's arm at the curve of the elbow with the point of the elbow upward. I turned the volvulus from left to right and undid two twists. I then had an assistant pass up a rectal tube, guided by my hands above, through the untwisted opening and the bowel was thoroughly washed out with water. An enormous collection of seeds of different kinds, pieces of undigested food, grape skins, and pieces of corn were in this way dislodged. After the bowel had been thoroughly emptied it was placed back in the abdominal cavity. I then fastened the left side of the mesentery of the abnormally lengthened bowel, to the peritoneum in front on the left side and the large muscular band of the intestine to the peritoneum on the right side of the abdomen. The abdominal wound was then closed. The patient made an uninterrupted recovery, has remained in good health, and has never had any recurrence of his former attack.

CASE No. 2.—Miss C. was referred to me in October 1894. On examination I found her suffering from a fibroid tumor growing in the left broad ligament, and advised operation, not knowing before operation whether the tumor could be removed or not.

At the Pavilion of the Toronto General Hospital, in the presence of a number of medical men, I opened the abdomen in the median line, found the growth growing in the left broad ligament and determined that it could

*Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

not be removed with any degree of safety. Both ovaries and tubes were therefore taken out. The patient made an uninterrupted recovery and went home but continued to menstruate. Her health was good for a year or more. The menstrual flow became excessive at times. She suffered considerably from backache. The chief symptoms, however, that subsequently set in, appeared to be those of indigestion produced by pressure on the rectum by the tumor. I made an examination and found, to my surprise, that the tumor had increased in size. I felt disappointed, because a large percentage of these cases have been entirely cured in my hands by removal of the ovaries. I was forced, therefore, to the conclusion that this was one of the unsuccessful cases. She complained of a continual aching in the abdomen, with a continual pain, chiefly toward the right side. I watched her carefully for a length of time and found slight elevation of temperature. She came to my office at intervals for a period of about three months. The tumor still remained as I had first found it, and the patient was evidently suffering from more pain than she could be expected to bear. She therefore determined to have the tumor removed at all hazards. I thought I knew what to expect and consequently held back, but eventually operation was forced on me.

On Jan. 18, 1899, I operated on her, in the Pavilion of the Toronto General Hospital. Dr. A. H. Wright of Toronto assisted me. The abdomen was opened in the median line and the old scar was entirely removed. A large tumor could be made out, filling the pelvis; it looked peculiar. I had never seen a tumor look just as this one did. It did not appear to be a fibroid tumor, but looked more like the tumor found when dealing with a suppurating ovary. After more careful inspection I concluded that it must be distended intestine. Even supposing the tumor to be distended intestine the case was not at all clear. The patient's bowels had moved several times in response to the usual purgative given before celiotomy. There were no definite evidences of obstruction of the bowels before operation. On feeling around in the left loin, the descending colon was encountered and was found filled with scybalous masses. These scybalous masses could not be made out by external palpation. They were found to extend onward into the transverse and descending colon. A great deal of difficulty was experienced in isolating the bowel, owing to the adhesions of one coil to the other. The operation was a prolonged one. It was found impossible to get anything up with which to anastomose any superior portion of the intestine. The tumor filling the pelvis proved to be nothing but a sigmoid or omega flexure packed tightly with fecal matter and half twisted on the narrowing portion of the omega flexure. A half turn of this flexure caused all the trouble. A full turn would no doubt have produced acute volvulus from which the patient must have lost her life long before. The finger could with difficulty be made to reach and pass up through the rectum through the constricted portion. The masses of feces were almost as hard as rocks. The tip of the finger passed through the anus would barely enter at the site of the twist. I separated the small intestines from around the mass, isolated the coils of large intestine, but owing to the shock could do nothing more. The patient left the table with a pulse of 140. Every effort was made to relieve her, but without avail, and she died next morning.

I regret the termination of the case, but can scarcely see that I could have done otherwise than I did. The condition could only be made out after a great amount

of searching, and this searching could only be carried out by breaking down dense adhesions. I fear that some portion of the bowel may have been torn into and that this contamination of the peritoneum brought about the fatal issue. I have never seen such an amount of fecal matter collected in any patient and have never seen fecal matter attain such a degree of hardness as it did in this case. The tumor of the uterus was found to have dwindled down until it remained about the size of a small orange. The only theory I can offer as an explanation of the condition is that the tumor filling the left broad ligament diminished, after the removal of the ovaries, from the size of a man's head down to that of an orange, and that during this diminution, the rectum, which is so closely attached to these tumors growing in the left broad ligament, was stretched and its mesentery lengthened, and that after the tumor had undergone a reduction in size, the bowel, as a consequence of this increase in length of bowel and corresponding mesentery, was allowed to take a half turn on itself.

Since meeting with this case I have come to the conclusion that there is one other condition that may simulate fibroid tumor and may deceive even the trained finger, and that condition is a collection of scybalous masses in a distended and partially twisted intestine, or in other words, a chronic volvulus of the omega flexure.

In November, 1898, I received a letter from the doctor in the country into whose hands the patient had recently fallen. He writes me as follows: "Dear Doctor:—I write you regarding Miss C., on whom you operated two or three years ago (in reality four years) in the General Hospital, for some ovarian trouble. She has been in very poor health for the past few months and now has some growth in the uterus on which an operation is necessary." To the letter I replied, "Your patient called yesterday. I believe you are in error regarding the nature of the trouble and, as a consequence, there must be some variance in our opinions. On examination now one would naturally think that our patient is suffering from a uterine tumor. At the operation four years ago I found that she had a fibroid tumor growing from the left broad ligament and, as a consequence, causing fixation of the tumor. The uterus was then over to the right side and somewhat elongated. Both ovaries were removed, as the operation of enucleation of such a tumor is accompanied by such a high mortality. I hoped at the time that oophorectomy would put an end to the growth of the tumor and that its presence would not give rise to much subsequent suffering. The whole question to be decided on is: Is the amount of suffering present great enough to demand interference, and the removal of the growth at all hazards? In some of these cases, after the removal of the ovaries menstruation continues for four or five years and then an early menopause is induced. If this patient demands operation I am prepared to perform it. Her recovery after removal of the growth would be complete and satisfactory."

After the operation had been carried out I wrote to the Doctor again as follows: "We have both been entirely mistaken in the case, as well we might be. The tumor has almost disappeared. After its diminution the omega or sigmoid flexure of the rectum must have taken a half twist on itself and have produced a volvulus. This volvulus was not sufficiently twisted to give rise to symptoms of intestinal obstruction nor even to send the patient to bed, but it constricted the intestine sufficiently to cause an enormous accumulation of scybalous masses above. The scybalous masses filled the twisted omega flexure of the rectum and were found away up in the

transverse and the ascending colon as far as the ileocecal valve. I never felt such hardened fecal matter before; it felt like pieces of broken stone inside the intestine. I passed a finger up into the rectum while the patient was thoroughly anesthetized and with the hand in the abdomen and the finger in the rectum I was able to make out the constricted portion. The tip of the finger would just barely enter at the site of the twist. After thoroughly exploring I separated the small intestines from their adhesions but could do nothing more. The patient's pulse by this time had reached 140. I am now in hopes that I will be able, should she survive, to wash out the scybalous masses. If this is impossible colotomy will be the only other recourse. The mass you felt on examination was fecal matter, the two lumps that slid about above and that felt like pedunculated fibroids growing from the main body of the tumor were pieces of hardened fecal matter in the bowel."

I give the quotations at length because the letters themselves give a better picture of the progress and circumstances surrounding the case than a bare recital of facts.

There is only one kind of a man whose fore-sight is as good as his hindsight, and that man is a fool. We can all learn by the mistakes of others, and it is easy to suggest what might have been done in a given case, but it is difficult for us to say exactly what we ourselves would have done had we been dealing with that given case. I think my finger has been fairly well educated by a number of years of experience, and I feel fairly competent to give an opinion regarding the nature of a pelvic tumor.

I have elsewhere published a case treated with electricity for two years on the supposition that the patient was suffering from a fibroid tumor, while, in reality, on performing an abdominal operation I removed a pair of pus-tubes with walls solid and thickened and cartilaginous and almost two inches in diameter. Among the hundreds of pus-tubes I have removed I have never seen another pair exactly like these. In lecturing to my class I have always claimed that one of the diagnostic features of a fibroid tumor was the separate nodules so frequently found more readily movable than in the main mass of the tumor. These nodules were noted in the case under discussion. In the days when electricity as a cure for fibroid tumors was absorbing the attention of a certain portion of the profession and a large portion of the public, it was no uncommon thing to hear of the complete subsidence of a pelvic tumor under the magic influence of the electric current. When a few of us ventured to suggest that many of these masses were not fibroid tumors, but that they were entirely inflammatory, we were supposed to be using this as unfair argument in the discussion of the question. But when one has lived to mistake a collection of fecal matter in the distended bowel of a patient having regular evacuations, it is easy to understand how many of these fibroid tumors may have been nothing but hardened intra-intestinal contents.

Time has not permitted me to make a very thorough search through the medical literature for information regarding this peculiar disease, chronic volvulus. In the slight search that I have made I find nothing except the reference given at the beginning of my remarks. There can be no doubt that a half turn of the intestine on the axis of its mesentery may produce chronic volvulus. Perhaps many cases of troublesome constipation may be explained in this way. It is evident that chronic volvulus may exist and the patient may live for years

with the condition, but not without discomfort. It is also evident that chronic volvulus may be cured by operation and the danger of acute volvulus may be thus avoided.

From the three cases referred to it is evident that chronic volvulus may occur in either the small or large intestine. When the omega flexure of the rectum is very fully developed, it is easy to understand how it may be twisted where the two branches of the omega approximate one another. That acute volvulus occurs at this spot more frequently than anywhere else is not to be wondered at. This elongated and apparently over-developed omega flexure seems to be a congenital condition. In the case of the man successfully operated on, I was amazed to find the mesentery of the omega flexure and the omega flexure itself of such enormous dimensions. When an attack of volvulus has occurred and recovery has taken place after a resort to high enemata, it seems to me that the abdomen should be opened and the bowels should be so fixed that volvulus cannot recur. It is only in this way that the patient can be placed in a safe condition. A resection of intestine might be done so as to shorten the portion of intestine inflicted with a long mesentery, but this procedure must necessarily be somewhat severe and scarcely justifiable if the minor measure carried out in my case will answer the purpose.

There are cases of volvulus of Meckel's diverticulum occurring in infants on record. While I have never yet met with such a case, I have recently had a peculiar experience in connection with Meckel's diverticulum. An infant was born and no fecal matter passed per anum. A few hours after birth I saw the child and it was evidently in great pain. Vomiting had set in and was persistent, so I opened the abdomen and found a coil of congenuous intestine forced through under a band produced by adhesion of a partially obliterated Meckel's diverticulum, to a spot of the peritonum near the spine. I presume that the bowel had been forced through under this band as a consequence of the pressure exerted during childbirth. There were evidences of acute peritonitis, the abdomen being filled with a seropurulent collection of fluid. The infant, but a few hours old, and already greatly shocked, soon succumbed.

DATA CONCERNING DEFORMITIES OF EXTRAUTERINE GESTATION.*

BY ANDREW F. CURRIER, M.D.
NEW YORK CITY.

The subject is one which, at first thought, would seem to be narrow in its scope, and yet the proper apprehension of it involves the examination of many disconnected reports of cases of extrauterine gestation, some of which devote no attention at all to the consideration of the physical condition of the fetus, while in others the details are aggravatingly meager. The deformities which are alluded to are in almost all cases, if not in all, consequences of the latter months of fetal development, since in those fetuses which are removed during the first half of gestation I have observed no record of deformity, and in those which I have examined personally, the upper and lower extremities have appeared to be normal. The subject derives importance from the fact that the number of fetuses developed outside the uterus and born alive by extraction through an abdominal incision, is not inconsiderable, and this number is increasing, year by year, as the means of diagnosis and

*Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 4-9, 1899.

surgical technic become more perfect. This means that the consideration for the welfare of those beings who have had the misfortune to be developed under exceptionally unfavorable conditions will increase in the future, and that they will probably have better opportunities for existence than have been conceded to them heretofore.

The sum of our efforts in the past has been to endeavor to extricate the mother from a plight which is most perilous, even under the most favorable conditions, and we have all been more or less prejudiced by the fact that most of the children in these cases have been born dead, or have died within a few hours or days, or have been deformed to a greater or less extent. The largest tabulated collection of cases in which a living child has been born through an abdominal incision, in the condition which is under consideration, has been made by the late Dr. R. P. Harris, whose table¹ contains details of 77 operations performed between the years of 1809 and 1896. From his well-known persistency and accuracy in gathering statistics, we may regard this table as fairly reliable, and as a basis from which certain inferences may fairly be drawn. Unfortunately he has made no statement in regard to the physical condition of the children referred to in his table. In another communication, which bears on this subject, he has stated, however, that only 4 children had survived at the time when his statement was published, 2 of them being then 4 years of age, 1 being 5, while 1 was 7½ years old. One of these children, as I infer, is a girl, delivered by Savage of Birmingham, and was 14½ years of age, and in good health when last heard from. The question as to the mortality in this class of cases is therefore, up to the present time, not a very brilliant one.

Champneys has collected a series of 19 cases of operations in which the child was born alive. The immediate mortality as to the fetus was 11 cases—61.1 per cent. There was deformity in 4 cases. The details of those who survived among his cases are as follows:

Operator.	Date.	Period of gestat. n.	Condition.	Duration of life.
Heim	1843	Term.	Healthy boy.	Not stated.
Haufl	1842	35 wks.	Deformed limbs.	Fifty hours.
Jessop	1877	34 wks.	Normal.	11 mos. Death from croup.
Spiegelberg.	1876	Term.	Normal.	3 mos. Death from inanition
Tait.	1880	Term.	Normal.	Well when reported at 7 months.
Schroeder . .	1879	34½ wks.	Normal.	Well at 6 months.
Wilson	1880	39 wks.	Normal.	Well at 3 months.
Litzmann . .	1880	38½ wks.	Deformed by pressure.	Fifteen minutes.

The following cases in which deformity of the child was observed at birth have been collected from various sources.

1. Champneys²: The child was a seven-months fetus when born, was fifteen inches in length, weighed 2 pounds 10 ounces, and had not been dead very long when delivered. Its face was compressed, the nose was flattened, and the head deformed. Champneys' remarks concerning such cases are as follows: "The number of children which are ill-developed, sickly or deformed in cases of extrauterine gestation is so large that the value of the child's life is much reduced and appears to be insufficient to justify additional risk to the mother."

2. John Williams³: The child was mature, was dead when born, and was deformed by pressure.

3. Olshausen⁴: The child was mature, was much deformed, and died 1½ hours after birth.

4. Rein⁵: The child was born at the thirty-seventh week, weighed 6 pounds, was asymmetric, but was living and well in 1892, being then 2 years old.

5. J. W. Taylor⁶: The child was mature at birth, weighed 7 pounds; the head was asymmetric, the larynx and neck depressed; the right foot had talipes-calcaneovalgus; the condyles of the femora were prominent. It died from convulsions, at 6 months.

6. Werder⁷: The child was born in 1894, was mature, and had asymmetry of the head and face, clubfeet, ulceration from pressure of the elbow on the left side of the thorax, and died on the fifth day.

7. Martin⁸: The child was born in 1881, with encephalocoele and clubfeet. It died soon after birth.

8. Frommel⁹: The child was mature at birth (1891), and had a deep impression on the left parietal bone from pressure on the brim of the pelvis. It also had a contraction of the right sternomastoid muscle, and died in two weeks, from gastro-intestinal catarrh.

9. Pinard¹⁰: The child was born in 1898, at 7½ months. It had asymmetry of the face, which disappeared. It was still living when the report was made.

10. Guéniot¹¹: The child was born alive, weighed 6 pounds at birth, but died in a few days with abscesses of the neck. Infection had probably been acquired from the placenta, which was attached to the intestine.

The following cases have been collected of children who were not deformed when born and who lived for varying periods:

1. Hardie¹²: This child was born at the eighth month, in 1896, and lived six hours.

2. Treub¹³: The child was born in 1887, three weeks before term, and weighed four pounds; a year later he was a strong healthy boy.

3. Lusk¹⁴: The child was born in 1893, at the sixth month, and lived twenty-four hours.

4. Cullingworth¹⁵: The child was born in 1894, at the end of the eighth month, weighed five pounds, and died at nine months, from poverty and neglect.

5. Eastman¹⁶: The child was born at the eighth month, in 1888, weighed four pounds, and died in 8½ months, from pneumonia.

6. Breisky¹⁷: The child was born in 1887, at term, weighed 5 pounds, and died in three weeks.

7. C. Braun¹⁸: The child was born at term, in 1889, weighed 6 pounds, and died in seventy-two hours, from lobar pneumonia.

Werder¹⁹ has made an interesting study of this subject, that is, from the standpoint of the fetus, and has collected forty cases, some of which have been mentioned in the foregoing pages. Of the forty children who were born alive, 18 died within one week from birth; 5 within 1 month; 1 at 6 months, of bronchopneumonia; 1 at 7 months, of diarrhea; 1 at 11 months of croup; 1 at 11 months, from an unknown cause; 1 at 18 months, from cholera infantum. Of the remainder, 5 lived after the operation, but their subsequent history is not known; 1 was strong and healthy at 3 weeks; 1 was well at 6 months; 1 was well when last heard from; 2 were living and well at 1 year; 2 were living and well at 2 years; 1 was well at 7 years, and 1 was well at 14½ years.

An examination of the foregoing cases shows that the cause of deformity was pressure on the hard portions of the pelvis and abdominal walls, due to an absence of amniotic fluid. The fetus in such cases usually lies free in the abdominal cavity, the membranes which at first enveloped it having been digested by the peritoneal secretion. The tissues of the fetus are therefore without their usual protection, hence those parts which are most in motion and most firm are most likely to show the deleterious effects of pressure. No remedy is at present

apparent for such mishaps prior to birth. After birth, should the child survive, the asymmetry of the head and face is likely to disappear the same as in children with large heads and who are delivered through narrow pelvis. The deformities of the lower extremities are susceptible of orthopedic treatment the same as are those born by the natural passages.

Does not the study of these cases teach us that the time has come when more regard should be paid for the welfare of these unfortunate beings who may, in many instances perhaps, be spared for useful existence by greater consideration and care during the early period of life?

BIBLIOGRAPHY.

1. Kelley: Operative Gynecology, pp. 458-459.
2. Trans. Obstet. Soc., London, xxix, 459.
3. *Ibid.* 482.
4. *Deutsche Med. Woch.*, 1899, 171.
5. *Centralbl. f. Gyn.*, 30-1802.
6. Trans. Obstet. Soc., London, 1891, p. 15.
7. *Med. Record*, N. Y., xlvii, 641.
8. *Werder*: *Ibid.*
9. *Med. and Surg. Reporter*, lxxvi, 683.
10. *La Sem. Med.*, March 15, 1899, p. 35
11. *Ibid.*
12. *British Med. Jour.*, xii, 233.
13. *Zeitsch. f. Geburtsch. u. Gyn.*, xv, 1883, 384.
14. N. Y. *Jour. of Gyn. and Obstet.*, July, 1893.
15. *British Med. Jour.*, 1894, ii, 1422.
16. *Med. Record*, N. Y., xlvii, 641.
17. *Ibid.*
18. *Archiv. f. Gyn.*, ii, 3890.
19. *Med. Record*, N. Y., xlvii, 641.

ASSOCIATION OF PELVIC DISEASES AND INSANITY IN WOMEN, AND THE INFLUENCE OF TREATMENT OF THE LOCAL DISEASE UPON THE MENTAL CONDITION.*

BY H. A. TOMLINSON, M.D.

SUPERINTENDENT ST. PETER STATE HOSPITAL.

AND MARY E. BASSETT, M.D.

ASSISTANT PHYSICIAN ST. PETER STATE HOSPITAL.

ST. PETER, MINN.

In January, 1894, there was begun in the St. Peter State Hospital a systematic inquiry into the relation between insanity in our women patients and whatever disturbance of function or disease of the generative organs there might be present. In order to accomplish this purpose, a careful record was made of the incidents of the menstrual period in each case; with reference to the amount and character of the discharge, the length of the period, the presence or absence of pain, headache, or general disturbance; and finally as to whether there was any change or exaggeration of the mental disturbance during the period. Then each patient was subjected to a careful physical examination and a record made of the conditions found. In all of the cases where pelvic disease was present and apparent, and in those cases in which there was menstrual disorder, a systematic study of the conditions found, in relation with the mental disease, was made, and where any doubt existed a competent surgeon was called in to give us the benefit of his advice. It was soon found that the weak point in our investigation was the absence of a complete and reliable history of the case before coming to the hospital. In the meantime all of the women suffering from menstrual disorder or pelvic disease were placed on appropriate treatment, and in those cases in which operative interference was indicated the necessary operation was done, whenever

the consent of the family could be obtained. This special treatment was carried out without regard to the apparent relation between the pelvic disorder and the insanity of the woman, as we believed that the most reliable evidence of the utility of this special work would be furnished by the careful study and treatment of all cases, rather than those alone whose condition suggested an apparent relation between the insanity and the disease of the generative organs.

This preliminary study included the 450 women then in the Hospital and those admitted up to Jan. 1, 1897. The first result of our investigation was the statistical evidence furnished by the observation of the effect of the menstrual molimen on the mental condition of the patient. In only ten out of the 450 women was there any exaggeration of the mental disturbance during the menstrual period, but 50 per cent. of all of the women had more or less physical discomfort during the period. Profuse or scanty flow with headache was the most common departure from the normal, and only a very small number suffered from pain; while the ten cases in which there was an apparent relation between the menstrual period and exaggeration of the mental disturbance; only two of the patients complained of physical discomfort at all. Among the married women, 58 per cent. had some pathologic condition in the pelvis, dependent on labor and its accidents. The commonest of these were tears of the perineum and cervix; next came subinvolution with endometritis, then disease of the tubes and ovaries. There were only two cases of uterine fibroma and two of cancer. One of the cancer cases was decided to be inoperable. The woman became cachectic, emaciated and was apparently going to die. However, she rallied, gained in weight, the discharge became less profuse and fetid, she did not complain of discomfort, lived in the Hospital for eighteen months, then left somewhat improved mentally and in fair physical health. We heard from her about one year afterward and she was still in fair physical health. Two of the women in whom there was apparently a direct relation between the menstrual disorder and mental disturbance, also presented evidence, of pelvic disease. Both were young and unmarried. One had been in the hospital for five years, having been committed a few weeks after landing in this country from Germany. The other was a clandestine prostitute and had had gonorrhoea, from the infection of which she had developed a double salpingitis and her ovaries were cystic. The former had sclerotic ovaries and suffered from severe dysmenorrhoea. In both cases an operation was done with the definite object of trying to modify the mental condition by removing a constant source of irritation in the pelvis. The uterus and ovaries were removed in both cases; but unfortunately the result of the operation was not satisfactory and there was not only no improvement in the mental condition, but a distinct increase of disturbance after the direct effect of the surgical procedure had subsided, and of course the more rapid determination of dementia followed the artificial establishment of the menopause. The most unexpected result of our investigation was the finding of so large a number of women with serious pelvic disease, in whom there was not only no apparent relation between the pelvic disease and the mental disturbance, but there was no complaint or evidence of physical discomfort. Many of these women have since been operated on and all needing local treatment received it. The general result has been a more or less well-marked improve-

*Presented to the Section on Obstetrics and Diseases of Women, at the Fifteenth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

ment in the physical condition of those treated. In some there has been a slight amelioration of the excitement or irritability present, but in the majority of the cases the relief of the pelvic disorder has been practically without influence on the mental condition of the women.

I now turn to the consideration of the more interesting because more carefully studied recent cases. From Jan. 1, 1897, to Jan. 1, 1899, there were admitted, subjected to examination, and treatment so far as was

cases there was laceration of the perineum, in 80 laceration and in 54 erosion of the cervix; 75 had cystocele and 68 rectocele. In 17 there was hyperemia of the uterus, while in 30 cases the uterus was hypertrophied and in 25 cases there was prolapse. There was 1 case of cervical fistula, 1 of rectovaginal fistula, 12 with prolapsed ovaries, 3 with enlarged ovaries and 5 with enlarged tubes; 2 cases of cervical polypus and 7 of fibroid uterus. There was leucorrhœa in 77 and gonorrhœal infection in 11 cases. In 38 of the cases the mental

MAJOR OPERATIONS.

Case No.	Mental Condition.	Pelvic Condition.	Nature of Operation.	RESULT OF OPERATION.	
				Mentally.	Physically.
1	Periodic excitement.	Dysmenorrhœa, ovarian pain, cystic and sclerosed ovaries.	Removal of ovaries and tubes.	Unimproved.	Pelvic symptoms relieved by operation.
2	Chronic excitement.	Dysmenorrhœa, salpingitis, cystic ovaries.	Removal of tubes and ovaries.	Unimproved.	Pelvic symptoms relieved by operation.
3	Chronic excitement.	Laceration of perineum and prolapse of fibroid uterus. Did not complain of any pain or discomfort.	Vaginal hysterectomy and perinorrhaphy.	Unimproved.	Cured.
4	Chronic delusional insanity.	Subinvolution, prolapse, retroversion and adhesions of uterus. No direct symptoms.	Removal of right ovary and tube, ventrosuspension of uterus.	Improved.	Cured.
5	Acute depression.	Lacerated cervix, endometritis.	Amputation of cervix and curettement.	Improved.	Cured.
6	Chronic delusional insanity.	Laceration of cervix and perineum, endometritis.	Curettement, repair of cervix and perineum.	Unimproved.	Improved.
7	Chronic delusional insanity.	Retrodisplacement of uterus, adherent laceration of perineum.	Ventrosuspension of uterus, repair of perineum.	Unimproved.	Improved.
8	Chronic delusional insanity.	Subinvolution, uterus retroverted and adherent cystic ovaries.	Removal of uterus and appendages.	Unimproved.	Cured.
9	Dementia.	Fibroid uterus.	Abdominal hysterectomy.	Unimproved.	Cured.
10	Chronic depression.	Retroverted, adherent uterus, cystic ovary.	Ventrosuspension of uterus, removal of right ovary.	Improved.	Cured.
11	Confusional insanity.	Endometritis.	Curettement.	Improved.	Cured.
12	Circular insanity.	Laceration of perineum. Endometritis.	Curettement, perinorrhaphy.	Improved.	Improved.
13	Chronic delusional insanity.	Retroverted and adherent uterus, laceration of perineum.	Ventrosuspension of uterus, perinorrhaphy.	Unimproved.	Improved.
14	Chronic delusional insanity.	Retroverted and adherent uterus, cystic ovaries, laceration of perineum.	Removal of ovaries and tubes, ventrosuspension of uterus, perinorrhaphy.	Unimproved.	Cured.
15	Circular insanity.	Retroverted and adherent uterus.	Alexander's operation.	Unimproved.	Cured.
16	Chronic delusional insanity.	Retroverted and adherent uterus, laceration of perineum.	Ventrosuspension of uterus, perinorrhaphy.	Improved.	Cured.
17	Chronic delusional insanity.	Prolapse of uterus, laceration of cervix and perineum.	Anterior colporrhaphy, repair of cervix and perineum.	Unimproved.	Died of uremia.
18	Chronic delusional insanity.	Retroverted and adherent uterus, laceration of perineum.	Ventrosuspension of uterus, perinorrhaphy.	Unimproved.	Cured.
19	Chronic delusional insanity.	Retroverted and adherent uterus, laceration of cervix and perineum.	Amputation of cervix and perinorrhaphy, ventrosuspension of uterus.	Improved.	Cured.
20	Chronic delusional insanity.	Subinvolution, retroverted and adherent uterus, double hydrosalpinx.	Removal of uterus and appendages.	Improved.	Cured.
21	Chronic delusional insanity.	Laceration of perineum.	Perinorrhaphy.	Unimproved.	Cured.
22	Chronic delusional insanity.	Laceration of cervix and perineum, endometritis.	Curettement, repair of perineum and cervix.	Unimproved.	Cured.
23	Dementia.	Endometritis, lacerated cervix.	Curettement, repair of cervix.	Unimproved.	Improved.
24	Chronic delusional insanity.	Mobile prolapsed uterus.	Alexander's operation.	Unimproved.	Improved.
25	Dementia.	Prolapsed uterus, laceration of perineum.	Abdominal hysterectomy.	Unimproved.	Improved.
26	Chronic delusional insanity.	Retroverted and adherent uterus, endometritis, lacerated perineum.	Alexander's operation, curettement, perinorrhaphy.	Unimproved.	Improved.
27	Dementia.	Gonorrhœal endometritis, lacerated cervix.	Curettement, repair of cervix.	Unimproved.	Died of uremia.
28	Chronic delusional insanity.	Subinvolution prolapse, laceration of cervix and perineum.	Curettement, repair of cervix and perineum.	Improved.	Cured.
29	Chronic delusional insanity.	Retroverted uterus, laceration of perineum.	Alexander's operation, perinorrhaphy.	Unimproved.	Cured.
30	Dementia.	Prolapse of uterus, lacerated perineum.	Amputation of cervix, ventrosuspension of uterus.	Unimproved.	Died of uremia.
31	Acute depression.	Retroverted and adherent uterus, laceration of perineum.	Ventrosuspension.	Unimproved.	Improved.
32	Acute confusion.	Uterine fibroid, rectovaginal fistula.	Hysterectomy.	Unimproved.	Died of uremia.
33	Acute excitement.	Laceration of perineum, endometritis, uterus retroflexed, enlarged ovary.	Curettement, repair of perineum.	Unimproved.	Improved.
34	Acute depression.	Laceration of perineum.	Repair of perineum.	Improved.	Cured.
35	Acute depression.	Laceration of perineum, endometritis.	Repair of perineum, curettement.	Improved.	Cured.
36	Chronic delusional insanity.	Fibroid uterus.	Hysterectomy.	Unimproved.	Cured.

practicable, 231 women. Of this number 61 menstruated irregularly; in 30 the discharge was scant, while in 63 it was profuse; 17 suffered from dysmenorrhœa, 6 from menorrhagia, 4 from metrorrhagia; 8 had headache during the period and 26 suffered from abdominal pain. In 28 there was some increase of mental disturbance during the menstrual period. In 49 of the cases there was retrodisplacement of the uterus, in 57 retroversion, in 19 retroflexion, and antelexion in 7, while in 11 cases the uterus was mobile. In 91

disturbance of the patient was apparently increased by the pelvic disease, but in the other 173 cases no relationship could be made out between the mental disturbance and the pelvic condition. There were 70 cases in which there was serious pelvic disease, in which operative or other treatment was instituted for the definite purpose of studying its effect on the mental condition of the patient. In 22 of this number the pelvic disease was cured, and in 12 of these the mental condition was improved. In 26 cases the pelvic condition was im-

order during the menstrual period is as common among the insane as among the sane, and what disturbance there is gives rise to but little apparent evidence of its presence, for as a rule we have to search for it. Now, when we take further into consideration the fact that the physician is consulted only by those who are ill, we can find an explanation of the comparative discrepancy between the results obtained by the gynecologist in his study of the cases of menstrual disorder or pelvic disease associated with nervous disturbance, which come within his purview, and those apparent in a large number of women aggregated in one place on account of their mental disturbance. There is the natural tendency in both cases to interpret the evidence found in the terms of the conclusion sought for. However, I am impressed with the tendency of the gynecologist to overlook the large number of women suffering from nervous and mental disease who do not consult him and who are not conscious of the presence of menstrual disorder or pelvic disease. While a considerable number of the women admitted to the hospital during the time included in this study were, as shown by the figures, suffering from pelvic disease or menstrual disorder, these conditions and their influence on the mental condition of the women seldom formed a part of the clinical history of the case before coming to the hospital. Even in those cases where the patient had been under treatment for menstrual disorder or pelvic disease, the fact of her coming to the hospital afterward would indicate either that there was no relation between the disease of the generative organs and the insanity or that the treatment had been of no avail in curing the mental disturbance. But when we consider the intimate association between the nervous system and the functional activity of the generative organs in women, and the further fact, referred to in the figures given, of the association of arrested development in the generative organs of women with instability or defect in the general nervous system, it is easy to understand why these disease conditions should apparently stand in causative relation to each other. This is frequently so marked among primary degenerates that the uterus and appendages present all the characteristics of senility, while menstruation is either scanty, delayed or sometimes absent for long periods. Again, in this class of cases, it is the rule for the advent of puberty to be delayed, the average being 17 years, and we have the record of one case where menstruation did not begin before 22 years of age, and yet no one at all familiar with insanity would think of attributing the mental disturbance accompanying the progressive degenerative changes in the nervous system in these cases to menstrual disorder. However, it is not uncommon to see young women, primary degenerates, whose uteri have been curetted or their ovaries removed with the object of curing a condition dependent on progressive degeneration in the nervous system; because the physician, while recognizing the intimate relation between the nervous system and the generative organs, failed to see that the pelvic symptoms were dependent on the degenerative process in the nervous system and that both were due to defective development. I can not do better than to here quote from a paper on a closely related subject, recently read by me before the American Medico-Psychological Association. "In this end of the century when women are warring against their natural position in relation to the reproduction of the species; while the competition of social and industrial life and the growing desire to avoid any responsibility which

interferes with material advancement or social opportunity is so strong; it is not surprising that we should find so many disturbances of the nervous system associated with the bearing of children; or that this originally physiological function and process should be credited with the untoward results which so often accompany and follow it. . . . To my mind the various disturbances associated with maternity simply prove what we know as a physiologic fact; that is, the intimate association between the function of reproduction and the activities of the rest of the organism; while the greater instability of the nervous system in women renders conspicuous and prominent those changes which the concentration of her vital forces in the process of reproduction makes possible and renders apparent; because under modern social conditions, the nervous system is not equal to the task of controlling its own manifestations and meeting the extra demands upon it."

When we come to consider the second subdivision of the question—as to whether menstrual disorder and pelvic disease do or do not of themselves cause insanity, we have to carefully weigh the evidence for and against the contention. In conducting this study I have considered first the family history of the patient and then her personal history, including the condition of her mother and father at the time of conception; of the mother during gestation; the character of the labor; the infancy and childhood of the individual, with especial reference to disease accompanied by prolonged high temperature, great exhaustion; convulsions from any cause; manifestations of disturbance of nervous equilibrium during the period of second dentition; the establishment of puberty, the history of the menstrual function during the period of adolescence, and finally the record of maternity in those women who have borne children, and of the menstrual molimen in those who have not. From the data obtained I have been enabled to divide the women into two general classes: those who have an unstable nervous system and those who have a defective nervous organization. The former are generally the children of the neurotic and insane; the latter the offspring of the consumptive, alcoholic, and syphilitic. Dipping into both classes come those children who have been born after prolonged labor, have suffered from disease accompanied by prolonged high temperature or great exhaustion, or have had convulsions from any cause during infancy. These causes operate to arrest development and limit the potentiality of the nervous system, either by mechanical interference with the nutrition of the brain, or general trophic influence. Among the class grouped as unstable there is practically always a history of disturbance during the establishment of puberty and through the period of adolescence, manifested by either amenorrhea or dysmenorrhea. Among the defective, however, there has been practically no evidence of a departure from the normal in the establishment of puberty or the process of menstruation. Among the unstable the history of the onset of the mental disturbance, which in this class is usually acute, practically always shows the insanity to have followed on some mental or physical strain due to disease, overwork or worry, which has overtaxed the limited cerebral potentiality of the individual. It is true that if the patient is the victim of dysmenorrhea, this acting as a source of irritation may exaggerate the mental disturbance and, besides, the causes which operated to produce the mental and physical exhaustion on which

the intensity is engrafted, will also almost certainly increase whatever menstrual disorder may be present; so that the outbreak by which the insanity becomes apparent may make its appearance during a menstrual period; but I do not believe that because of this we are warranted in saying that the insanity was caused by the menstrual disorder, and the same holds true with regard to pelvic disease. Anything which reduces the vitality of the individual will exaggerate whatever pelvic disease may be present, or even make apparent by local symptoms a condition not before felt or complained of. We often have young women, committed to the hospital, in whom there is a history of severe menstrual disorder, which disappears entirely in a comparatively short time under the régime of hospital life, with the relief of constipation, indigestion and insomnia, but without any measures directed against the menstrual disorder itself. The history of the menstrual molimen thereafter shows no evidence of exaggeration of the mental disturbance, nor do the manifestations of the insanity necessarily or commonly improve with the relief of the menstrual disorder. Among the women of the defective class, which furnishes the largest proportion of our primary degenerates—that is, those women who become insane during the adolescence and lapse into dementia—it is the exception to find any menstrual disorder, and those among them who have borne children, although subject to the accidents of labor, septic infection during the puerperium and the ill results of subinvolution, rarely bring with them a history of pelvic disease or complain of discomfort after coming to the hospital.

This naturally leads to the last subdivision of the question. How may that class of cases of insanity be recognized which offers hope for relief or cure by the treatment of pelvic disease, either operative or otherwise? Judging from my own experience and observation no case of insanity dependent on a degenerative process in the nervous system will be benefited mentally by operative treatment, but on the contrary may, and in the majority of cases does, have the degenerative process hastened by the shock of the operation or the production of a premature climacteric. In all cases of insanity among the unstable class, where there is serious menstrual disorder which the history of the case shows to have grown worse since the onset of insanity, the patient will be benefited by local treatment; provided her delusions do not in any way relate to the sexual function or the condition of the reproductive organs. Such treatment timely begun may be the starting point for recovery; yet it is only fair to say that I have often been disappointed and, on the other hand, have seen cases, apparently seriously in need of treatment recover promptly without it. However, neither of these exceptions disproves the general rule. In the presence of pelvic disease operative treatment is required for the very same conditions that would demand it among the sane, and the relief of the physical disease may and often does materially aid in recovery from the insanity. Even when this is not accomplished the life of the woman is made more comfortable and her mental disturbance lessened. The greatest risk to the mental integrity of the woman from operative interference is, strangely enough, in that class of cases where the temptation to operate has been the greatest. I mean in young degenerate women with infantile uteri, small sclerosed or cystic ovaries and who have explosive outbreaks during the menstrual period; or women who have borne children, who have a slight

perineal or cervical tear and an enlarged and tender left ovary and slight subinvolution, but with a symptom-complex out of all proportion to the amount of disease present. Operation in such cases practically always means the determination of dementia. The following conclusions seem to me to be warranted by our study of the data furnished by our examination and treatment of the women committed to this hospital.

Menstrual disorder and pelvic disease, while quite common among insane women, in the majority of cases bear no apparent relation to the insanity; nor is the intensity of the mental disturbance in proportion to the gravity of the physical disease.

In cases where the insanity has existed for more than a year, or the patient has a defective nervous organization, treatment of the disease of the generative organs is practically without effect on the insanity, and in such cases operative interference resulting in the establishment of an artificial menopause almost invariably hastens the onset of dementia.

Operative interference is called for in the treatment of pelvic disease among the insane for the same reasons that would determine the necessity for such treatment among the sane.

In order to determine whether or not treatment of the disease of the generative organs will have a curative effect on the insanity, it is important to know the family and personal history of the patient with regard to the presence or absence of evidence of unstable or defective nervous organization, the length of time the insanity and disease of the generative organs have existed, and to what extent the general health of the patient is affected by the pelvic disease independently of the insanity.

CHOLECYSTITIS.

ITS RELATION TO ANGIOCHOLITIS AND CHOLELITHIASIS.*

BY CHARLES G. STOCKTON, M.D.,

BUFFALO, N. Y.

In the etiology of cholecystitis, what rôle is played by biliary calculi, trauma, exposure to cold, and what by invasion of the gall-bladder by pathogenic bacteria?

To explain the various painful and obstructive disturbances of the biliary passages by attributing them to gall-stone has been so simple and natural that such pathology went for a long time unchallenged. The suspicion that the process was vastly more complex than we have imagined has long been held, and during the past ten years our knowledge on the subject has so much widened that the pathologic position of the calculus in so-called gall-stone attacks has undergone a radical change. There were series of ascertained facts that were not to be disposed of by the simple statement that gall-stone was present, and for some unknown reason took upon itself to migrate from the gall-bladder. Here are a few of these facts:

1. In a large number of post-mortems, gall-stones are found present without any history of jaundice, hepatic colic, or other liver trouble.

2. In post-mortems of those dying from biliary obstruction there sometimes have been found no calculi in the biliary ducts, but one or two very large calculi in the gall-bladder, quite too large to engage in the cystic duct, and, therefore, not directly guilty of the attack.

3. Obstruction of the biliary passages is not infre-

*Presented to the Section on Practice of Medicine, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

quently found to be complete when no gall-stone is found present in any of the biliary passages.

4. A calculus is sometimes found in the common duct without jaundice, colic or other symptoms of obstruction.

5. When gall-stones are found post-mortem, or in operations *in vivo*, and there have been recent symptoms of hepatic colic and jaundice—whenever these have been searched for, evidences have been found of cholecystitis, or angiocholitis, or both.

These observations would seem to point to the fact that gall-stones may be innocent tenants of the gall-bladder; that attacks of hepatic colic may occur when there are no gall-stones at all; that an inflammatory process of the biliary passages seems in some way related to the attacks of gall-stone colic.

What then is the pathologic position of the gall-stone, and what the secret of its formation? What rôle does it play in the evolution of hepatic colic and biliary obstruction?

The belief has been held from time immemorial that some changed condition of the secretion of the liver, the result of diathesis or dyscrasia, led to the precipitation of the solids of the bile and the formation of calculus. This belief has had support in the fact that the gall-stone is more often seen in women than in men; in age than in youth; is more often present in those who lead sedentary lives, and in those who have obesity and the uric acid diathesis. On the other hand it has been long suspected that the gall-stone had its origin in local conditions, and that it was not so much dependent upon a systemic state.

In 1891, Naunyn, at the German Congress of Physicians and Naturalists, sounded a clear note on the nature and formation of biliary calculi. First, he showed the constant and unchanging presence of cholesterol and lime in the bile, without any relation to the food ingested. Next, he showed that there were present substances in the bile which hold in solution the cholesterol in far greater quantity than is necessary to prevent this precipitation in the bile. He also showed that dogs, when fed upon lime in large quantities, had no increase of lime salts in the bile. Thus, while experience shows that certain habits of life tend to favor the development of calculi, these experiments of Naunyn, which have been verified, prove that that tendency is not to be found in the amount of cholesterol or lime in the bile, contrary to the reasonings of Bouchard. It upheld the theory that the origin of gall-stone lay in some particular condition of the gall-bladder which favors the precipitation of the solid constituents of the fluid, thus supporting the contention of Frierich, Niemeyer, Barth, and a host of others who were committed to a strictly local origin, as opposed to the systemic or dyscrasic origin of the calculi. These conclusions have been well stated by Stanislaus Pechkrane¹ as follows: "Modern investigations and teachings show that the disease is but a local one, the result of a morbid condition of the bile-ducts and gall-bladder, and that it is uninfluenced by any disturbance of nutrition."

Various observers have found that the center of gall-stones consists of bilirubin and lime salts, and that about this center the cholesterol is deposited. Naunyn has shown that this formation of the center of the calculus, and also of the precipitation of the cholesterol about it, follows almost invariably from an inflammatory process in the gall-bladder. In other words, given cholecystitis and a free supply of bile—although Naunyn holds that this free supply of bile is unnecessary, which view,

I think, has been disproven by Mignot—and precipitation occurs in the order above described. The same reasoning holds true of the calculi formation in the other biliary passages.

It now remains to explain the origin of the cholecystitis, and this, it would seem, has been satisfactorily accomplished by Mignot, Gilbert, and others. While exposures to cold, trauma, obesity, age, and bodily inactivity favor the development of cholecystitis, there has been wanting some common factor to complete this explanation. This missing link in the chain, in the light of recent investigations, seems to be found in infection. This belief has not been reached without much painstaking effort, and we owe a debt to the French investigators for this step in advance.

It was formerly believed that bile possessed active antiseptic properties. This has been disproven by Vignal, Copeman, Winston and Bernabel. Naunyn proved that in the terminal portion of the ductus choledochus living organisms are usually found present. In 1891, Latiene showed that the presence of micro-organisms in the biliary passages always brings about the precipitation of various compounds of the bile. Mignot² and Gilbert³, with the assistance of Dominici, and later, Fourniers, have shown not only this result of the presence of micro-organisms, but they have traced the process step by step to the origin of the calculi and have disclosed the nature of the organisms usually concerned in the work. It is the colon bacillus that is most often responsible for the biliary catarrh; but the typhoid bacillus, the proteus vulgaris⁴, staphylococcus, streptococcus, and others are occasionally found. The colon bacilli are present, either dead or alive, in one-third the number of cases (70) investigated. It was shown that the calculi containing the living micro-organisms were of recent formation, while old calculi were sterile. Mignot, in 1896, showed that foreign bodies, when sterile, could remain in the gall-bladder for an indefinite time without inducing inflammation of the mucous membrane or precipitation from the bile. It is thus seen that the gall-stones may be innocent tenants of the gall-bladder, that their origin is secondary to infection of the gall-bladder, and that they are mere incidents of an inflammatory process and not themselves the cause of the inflammation, and that they may have no influence in producing inflammation of the bile-passages except when they exercise pressure upon the inflamed surface or, in escaping, cause abrasion of the delicate mucous membrane or, when held fast in the bile-ducts, they offer obstruction and thus favor the extension of the infection already present.

It is an interesting fact, as shown by Mignot, that the more virulent organisms do not give rise to gall-stones, but that only those having the properties of producing a slight inflammatory reaction are concerned in calculus formation. He also demonstrated that in the condition of atony of the gall-bladder, and in complete stasis of the bile, the formation of true stratified calculi is impossible. It is necessary for the biliary passages to be open so that the bile renews itself, in order to have the proper conditions for the formation of gall-stones. It is regarded as improbable that there is any increase in the size of the calculus after the death of the micro-organisms present. It is known that in man, under ordinary conditions, these organisms die in a comparatively short time; and thus is explained the fact that sterile calculi are found in sterile gall-bladders without attacks of biliary colic having ensued. The fact that the precipitation of the bile compounds occurs

when there is catarrh of the mucous membrane of the bile-passages, associated with the presence of micro-organisms, and that without this association, the gall-stones become inert, throws light upon the results of certain methods of therapeutics that hasten the death of the pathogenic bacteria, the subsidence of the catarrhal inflammation, and the disappearance of biliary sediment. On the other hand, the mere removal of the gall-stone by surgical intervention without other methods of treatment may not do more than afford temporary relief, and another calculus may at once form, as the infection and the cholecystitis may continue. It is a fact that in two-thirds of the cases of cholelithiasis in man, the bile is found to be sterile; in which cases the calculi are old and, as before stated, when the calculi present evidence of recent formation, infection and inflammation of the bile-passages are present. In passing, it should be mentioned that some experimental work supporting the views of the French observers has been done in this country by M. W. Richardson⁵.

W. Hunter⁶ attributes the catarrhal condition of the bile-passages to a toxic condition of the bile, resulting from faulty digestion and other causes of dyscrasia before referred to. He does not regard it as positively necessary that the biliary ducts should become infected. This view apparently rests on the fact that gall-stones are found present under sterile conditions; but, as has been shown, the bile under favorable conditions rapidly becomes sterile, and although infection sometimes continues for years, it is, after a short time, frequently absent. Instances of gall-stones, surrounded by mucopurulent fluid which is perfectly sterile, have been recorded.

It is very probable that the calculus acts as an irritating foreign body in the presence of inflammation, and the removal of the gall-stone unquestionably exercises a beneficial influence on the course of the cholecystitis. Indeed, it is held by Riedel⁷ and by S. Mintz that the more serious symptoms of gall-stone colic are the result of what Riedel calls "perialienitis," that is to say, an inflammation of the structures immediately surrounding the gall-stone. Riedel looks upon the inflammation about the gall-stone as a cause of the pain and spasmodic contraction of the gall-bladder, and holds that without this spasmodic contraction it would be impossible for the calculus to escape from the gall-bladder, believing the normal muscular activity of the organ to be quite sufficient. In the same way a gall-stone incarcerated may intensify the existing angiocholitis. Thus we have explained dropsy of the gall-bladder, pain, fever, jaundice, toxemia, as well as ulceration of the walls of the bile-passages that permits the escape of the gall-stones into surrounding parts. But we must not lose sight of the fact that the process, from beginning to end, hangs upon inflammation, and the inflammation upon infection. The question of dyscrasia, so long held and re-suggested by Bouchard and Hunter, may be explained by admitting that these conditions lessen resistance and thus favor infection and the formation of calculus.

Let us now look at the matter from the standpoint of the second question in this paper: "What relation does cholecystitis bear to angiocholitis, jaundice, enlargement of the liver and hepatic colic?" In other words, we are to take a different view of the same process. The question has already been answered in part. Usually when there is cholecystitis, there is more or less angiocholitis. The passage of the gall-stone increases the inflammation. There is swelling of the mucous lining of the bile-passages

and closure of a sufficient number of them to lead to the retention of bile in the liver. Jaundice necessarily follows, enlargement of the liver succeeds, the organ sometimes reaching twice its normal size, becoming dark in color, tender on pressure, and sometimes painful. At such times the gall-bladder becomes distended with bile unless there happens to be closure of the cystic duct. But even then, distension quite frequently results from inflammatory exudate into the gall-bladder, which may be felt as a distinct rounded tumor. At other times it is concealed by the enlarged right lobe of the liver; or, the gall-bladder may become thickened or shrink into an insignificant space. In some cases it is difficult to say how much of the pain is attributed to the pressure of the stone, and how much to the inflammation. Naunyn⁸ holds that not only is distension of the gall-bladder due to cholecystitis, but also that the pain, cholangitis, and the symptoms of obstruction are thus to be accounted for. Of course, when the gall-stone acts as a distinct plug in the ductus communis choledochus, an icterus would result, but this is a rather unusual state of affairs. He points out that there are cases of cholecystitis that give the picture of gall-stone colic, but which, on operation, show the absence of calculus. As a rule in such cases, the pain ceases, the swelling, the gall-bladder, icterus and fever subside. There may be recurrences, and eventually, through accidental increase of the virulence of infection, the symptoms may become very prominent, metastasis may be formed, and death result from sepsis or prostration. Or, there may result a chronic cholecystitis, with hydrops or empyema of the gall-bladder, or, coincident with the escape of gall-stones, the patient may improve, and recovery will ensue. Naunyn reiterates the statement of Mignot, that cholecystitis and angiocholitis are infectious from the beginning.

In a recent contribution to the Berlin Medical Society, March 15, 1899, Pollatschek takes a very similar position, holding that biliary colic may arise solely from inflammatory processes without the presence of any gall-stones whatever, and that even in severe cases of cholelithiasis icterus may be wanting. In this connection he points out the frequency with which the pain of biliary colic is mistaken for cardialgia, and calls attention to the fact that in the latter condition swelling of the liver is present. The contrary is almost always true of cholecystitis or angiocholitis with or without calculus. He speaks highly of a method of palpation suggested by himself, the value of which I can from personal experience vouch for. It consists in placing the four fingers of the left hand lightly over the edge of the liver while the necessary pressure is given to them by the four fingers of the right hand placed upon the dorsal surfaces of the fingers of the left. The tactile sense of the finger tips is far greater when there is absence of muscular contraction in the examining hand.

Pollatschek also draws attention to the fact that in instances of cardialgia there are almost always present well-defined stomach diseases, whereas in cholelithiasis we have merely a sympathetic gastric condition; also in hepatic colic we nearly always have the accompanying peritoneic symptoms so different from those seen in simple gastralgia.

I have recently seen two cases of obstinate cholecystitis and angiocholitis in which a single gall-stone was incarcerated at terminal extremity of cystic duct, in which was seen a beautiful illustration of inflammation of the surrounding parts, which Riedel calls "perialienitis." In these cases the swelling of the hepatic duct was sufficient to produce intense jaundice and enlargement of the liver.

In both cases the gall-bladder was small and much thickened. These cases also illustrated very strikingly the results of long-continued localized peritonitis, so commonly present in cholecystitis. The numerous adhesions, binding down into a mass of scar tissue the regions about the gall-bladder, are not only a great embarrassment to the surgeon, but give abundant evidence of the seriousness of the affection.

Let us now turn to the third question: "How far may the course of cholecystitis and the prognosis be modified by treatment other than surgery?" We can not turn our backs upon the experience of the ages that points to the fact that certain habits of life predispose to the formation of biliary calculi. Just how obesity, a sedentary life, gluttony, etc., invite infection of the gall-bladder, we may not be able to explain. In some way immunity seems to be lowered. The experiments of Naunyn would seem to show that this does not depend upon the constituents of the bile. These experiments are apparently conclusive so far as lime, cholesterol, and coloring matter are concerned; but there may be other elements in the bile of those individuals leading unhygienic lives that favor irritation and inflammation of the biliary passages. On this very important point some light would seem to be shed from a therapeutic standpoint. The treatment adopted at Carlsbad has long been famous for the relief afforded such cases. This plan of treatment is not limited to drinking of Carlsbad waters, but it is a carefully worked out plan of hygienic living, including diet, baths, exercise, recreation, and the administration of drugs.

Bearing on this treatment, A. Hermann⁹ reports his valuable observations. He admits in the beginning that the treatment has no influence in the expulsion of the calculus, and says that such migration is a purely accidental matter. Nevertheless, he shows that attacks of hepatic colic are comparatively rare in the patients under treatment. Of 114 cases of cholelithiasis that came under his observation at Carlsbad in 1898, hepatic colic occurred in 19 only. Now, if the calculi remained in the gall-bladder without producing colic attacks, it would seem that the tissues must be so modified by the treatment that the inflammation disappears, and it is highly probable that at least a portion of the benefit lies in the modification of the character of the secretion of the liver. Herman reports that in 1886 there were in Carlsbad 34,320 cases of cholelithiasis, and only 18 died of the disease; 21 died from other diseases secondary to cholecystitis, such as abscess of the liver and peritonitis. He also reports that colic often returns after operation and removal of calculi. He cites 15 cases that were operated on in which the colic returned in 7. This can not be fairly construed as an argument necessarily against the proper practice of surgical intervention in cholelithiasis, but it goes to show that the disease is really an infection of the biliary passages, and that until these parts become free from infection there is a reasonable probability of the reappearance of the calculus.

A review of the benefit derived from a well-known plan of medical treatment is believed to be timely when surgical treatment of the affection is coming to be so generally advised. The benefits obtained from surgery are not merely owing to the removal of the calculus. Indeed, Riedel ventures the opinion that 95 per cent. of the calculi migrate from the gall-bladder and are discharged without provoking true icterus, or serious obstruction. This seems like a very strong statement, but at any rate it points to the fact that the gall-stone,

either in the gall-bladder or in its spontaneous passage from that organ, creates comparatively little disturbance as long as inflammation is not present.

Riedel believes that as soon as the diagnosis of cholelithiasis is made, the calculus should be removed by operation, and yet he admits that 80 to 90 per cent. of so-called attacks of hepatic colic are merely the symptoms of cholecystitis. In other words, the operative procedure, including the removal of the gall-stone, has for its object the cure of the cholecystitis. As has been shown, operation, even though offering temporary relief, offers no assurance that the disease may not recur. Undoubtedly in a certain proportion of cases the inflammation includes the dangerous complications of chronic angiocholitis, hepatic abscess, and peritonitis, which with the assistance of surgery might have been prevented; but even in the cases in which operation is demanded, a carefully considered plan of medical treatment should be applied, not only to assist in recovery, but to prevent recurrence. In the great majority of cases, if the patient can be put under proper control for a sufficient length of time, the inflammation of the bile-passages will disappear, the calculi, although retained in the gall-bladder, will cause no trouble, and the patient is likely to continue thereafter in good health.

BIBLIOGRAPHY.

1. Medycyna, Tome xxvii, 6 and 7. See translation by Fronzac, Buffalo Med. Journal, July, 1899.
2. L'Origine microbienne des calculs biliaires. Arch. Gén. de Méd., August and September, 1898.
3. Note pour servir à l'histoire de la théorie microbienne et de la lithiase biliaire. Arch. Gén. de Méd., September, 1898.
4. Gouget: Arch. de Méd. Exp., No. 40, 1897.
5. Journal Bot. Soc. of Med. Sciences, January, 1899.
6. British Medical Journal, October, 1897.
7. Medycyna, Tome xxvi, 48 and 49.
8. Muench. Med. Woch., October, 1898, No. 40.
9. Medycyna, February, 1898.

DISCUSSION.

DR. GEORGE DOCK, Ann Arbor, Mich.—When a case of cholecystitis presents itself, the physician should call in the surgeon in consultation, especially one who has had experience in diseases of this kind. I think, however, that the physician should not give up the case entirely to the surgeon. The after-treatment is of the greatest moment, and the patient should be watched for a long time. Such cases offer a fruitful field for experimentation. The importance of calling in a surgeon depends on the fact that in a small proportion of cases serious complications, such as adhesions and perforations, are likely to occur unexpectedly, and might be dangerous to the patient.

DR. JUDSON DALAND, Philadelphia.—I desire to refer to two cases recalled by Dr. Stockton's paper, and by the remarks of the last speaker. In one case the patient had recurring attacks of jaundice with pain, and the case looked like one of ordinary gall-stone with obstruction. The autopsy showed the difficulty to be cancer of the head of the pancreas. The mass, pressing against the opening of the common bile-duct, produced an obstructive jaundice, and from time to time the softened center of the cancer discharged into the duodenum, the pressure on the common bile-duct thereby being relieved, and the jaundice disappeared. Again the opening closed and the jaundice reappeared. This recurred several times. I also recall a case seen three years ago similar to the one described: in this instance a gall-stone was removed from the gall bladder and the patient rapidly recovered from the operation and there was no return of the attacks of biliary colic for three months when they recurred and in six months attained their original severity. It was believed by the surgeon that he had removed all the stones, and the symptoms were looked on as due to other causes; a second operation was performed and a stone was found in the common bile-duct, which, judging from its size and appearance, probably existed at the time of the primary operation.

The common bile-duct is often found with difficulty by the surgeon, especially in patients with large abdomen and in the obese. If the head of the pancreas is grasped by the thumb below and the middle finger above, in the long axis of the body, and the index finger be allowed to fall downward, it will press against the region occupied by the ductus communis chole-

DR. T. B. FURCHER, Baltimore—*I wish to refer to the importance of the typhoid bacillus as an agent in forming the nucleus of gall-stones. A number of years ago Dr. Welch, of the Johns Hopkins Hospital, demonstrated that a clump of these organisms may form a nucleus about which calcium salts may be deposited. Such cases have been operated on, the calculus cut into under strict antiseptic precautions, cultures made from the center of the latter and the typhoid bacilli grown out in pure culture. This shows that typhoid bacilli may form a nucleus about which cholesterin and lime salts may be deposited. Recently, a case in Dr. Kelly's department was operated on for cholecystitis and suspected gall-stones. The cultures taken from the fluid in the gall-bladder at the operation showed the presence of large numbers of typhoid bacilli, subsequently grown out in pure culture. The patient, a woman, had typhoid fever eighteen years previous to the operation, and there was no history of any subsequent attack. A gall-stone came away with one of the pieces of gauze later on when the case was being dressed. Whether the typhoid bacilli formed the nucleus of the calculus in this case is not known, as the stone was not saved, but this instance shows how long the bacilli may remain in the body and finally give rise to an acute cholecystitis. The patient's blood-serum agglutinated typhoid bacilli from another source and also the typhoid bacilli grown out in pure culture from her own gall-bladder.*

DR. HORACE D. AENOLD, Boston—*At a meeting this spring I had the pleasure of hearing Dr. Mark Richardson report an instance where there was injected into the gall-bladder of a rabbit, typhoid bacilli; this injection was made under the usual antiseptic precautions; as a result of such injection a calculus was formed. This is only one case, but it is in line with the evidence given by the last few speakers.*

DR. CHARLES G. STOCKTON, Buffalo, N. Y.—*The surgeon should not only be called in cases of cholecystitis, but he should be associated with the physician in the study of the case. In each case I referred to, as you may have noticed, a surgeon was called and calculi were removed. It is not always a clear matter to decide when an operation is indicated or when an inflammatory process is present. I had a remarkable case under my care this past winter. The patient, a woman, about 30 years of age, had always been healthy; she had typhoid fever last autumn, which ran its usual course; about six weeks later she was seized with severe pain and it was at first supposed to be simply a gastralgia. Later the pain was referred to the liver, and there was jaundice with distension of the gall-bladder. After the sickness had lasted about three weeks, a leucocytosis became marked and it was the opinion of Dr. Park that an operation was indicated. Operation was decided on for the following morning, but the leucocytosis declining, we decided to wait longer. She made a recovery that was remarkable, but not until after she had passed gall-stones on three separate occasions. Since that time she has been well. This case is interesting in pointing out the close relationship existing between gall-stone development and cholecystitis. Typhoid bacilli are reported as surviving long in the gall-bladder, but not so the colon bacilli. Dr. Daland remarked, I believe, that when there is obstruction in the bile-ducts or the radicals of the biliary passages, this obstruction may develop an immediate infection. This is not so true of the cystic duct as of the common bile-duct. When the obstruction is at the outlet of the common duct, we almost invariably find jaundice following, and often pain. The jaundice, in this case, is not merely the result of obstruction caused by the angio-cholecystitis. The latter is excited by the calculus, but without inflammation jaundice would, of course, continue.*

RESPONSIBILITY OF THE PHYSICIAN IN VACCINATION.*

BY JULIA W. CARPENTER, M.D.,
CINCINNATI, OHIO.

That smallpox has ever been a fearful scourge in the world is known to but few outside of the medical profession, and the full extent of this scourge in the past, unless it has been portrayed in undying colors in the class-room, is not a vivid picture even now with the majority of physicians.

So quickly does the world become accustomed to the absence of a once dreaded disease that its reappearance is needed to force again a study of its history, its rav-

ages, its cause, its prevention and obstacles to its prevention. Its history tells us that since the days of the immortal Jenner there has been a grand transformation scene on the face of the earth. This change has been almost incredible. Before the days of vaccination the ravages of smallpox were beyond belief. Two millions have sometimes died in one country in one year. Now the majority of physicians have never even seen a case. To those who died of the smallpox must be added also a long list of those who recovered from it, but died of some other disease for which smallpox was the predisposing cause. For instance, smallpox predisposes to tuberculosis. The statement has been made by one observer that of 360 persons who recovered from smallpox and were kept under observation, only four escaped tuberculosis. Those that now die of smallpox can not be classed with any noble army of martyrs, for these deaths have been proved to be unnecessary.

The subject of vaccination is of vital interest to us at this moment for several reasons: 1. On account of the recent epidemic of smallpox. 2. On account of the discussion for and against the propriety of legislation one way or another on the subject. 3. On account of the growing sentiment against vaccination and the industry with which its opponents are working.

The epidemic of smallpox in the United States during the past year could not have existed if the proper precautions had been taken, and vaccination had been universal. Why it was not, can be accounted for in two ways: 1. Out of sight out of mind, is a true adage. Absence of the disease without law to insure its prevention is the forerunner of its reappearance. 2. Ignorance on this subject among the people furnished good soil in which the enemy sowed tares, and the anti-vaccinationists arose on the scene.

The vital point in it all is: What is the cause of the opposition to vaccination, and what are the means to overcome this opposition? The strongest weapons in the hands of these enemies are facts, but these facts do not need to be repeated, if great care is exercised by the physician in the manner of vaccination and care of the patient afterward. The manner of vaccination has now been reduced to a nicety. The responsibility for the purity of the vaccin no longer rests with the physician. We now have co-workers who make its preparation their specialty, and on their faithfulness and conscientiousness depend our success and their pecuniary reward; for any impurities traced to one firm would at once turn the demand in another direction. At present the hermetically sealed tube of glycerized vaccin outranks all other forms for safety. It is a little more troublesome, but so is everything that is done in the best way possible. The ivory points, though coated with the same pure vaccin, are more or less exposed to the air and contamination by germs.

As to the place for vaccination, there is certainly room for good judgment. In recent vaccinations one still sees with girls, as well as boys, large scars on the arm midway between the shoulder and elbow. Why put a scar in a conspicuous place when it is not at all necessary? Our office is to remove all traces of disease, not to put them forever before the eyes. This gives the bearer of such a blemish an occasion to blame, and also gives another physician an opportunity for just criticism. One young lady was vaccinated in four places an inch apart, making four corners of a square just in the middle of her arm; fortunately only one took; if all four had taken, such an immense cicatrix might have prevented the author from ever being sent

*Presented to the Section on Practice of Medicine, at the Fifth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

for afterward. Many girls and women prefer the mark on the leg, but why any physician would select the calf of the leg for that operation would be hard to tell. One young lady vaccinated at that point and receiving no care afterward was unable to leave her room at the end of two months. Other similar instances could be mentioned, but these are sufficient to show one kind of a mistake that adds to the ranks of the antivaccinationists.

Vaccination is no trivial matter, and does not allow itself to be treated as such. If treated as a matter of little importance, it is a wave started out that inevitably returns to the sender, as action and reaction are equal. Carelessness always gives a return blow to its author. Any one who vaccinates a patient and lets him go without some instruction and a positive promise to return runs the risk of that patient becoming an opponent to vaccination for two reasons: 1. There may be some untoward result which could have been prevented by a little oversight. 2. The patient can easily mistake an ordinary sore on the arm for a typical "take" and if he has smallpox afterward he concludes very naturally that vaccination is no prevention, hence he joins the ranks of the antivaccinationists. He spent his dollar for nothing and had smallpox besides. Every vaccination should be cared for as a case of mild sickness, which it is, and for perfect safety the patient should be kept under supervision until the case is over, that is until the crust is off. Ordinarily one should refuse to vaccinate unless the patient will come for inspection at least once before the ninth day, and the physician himself should pronounce on the result as to whether it is sufficient to afford immunity.

The following is the after-treatment that I have found gives the best results. After vaccination, extreme cleanliness within as well as without, should be enforced. That is the chief thing to prevent untoward results. Begin with a laxative not later than the third day, sometimes on the first, or even the day before, as a necessary preparation with some. Perfect sewerage of the human body is little known to the people and has to be taught to each patient. A bath every day when possible is an important adjunct, and the entire arm should be washed twice a day with hot water and soap, of course not touching the point of vaccination. The heat and irritation in the surrounding inflamed area is greatly relieved by a little vaselin. This treatment, which is easily carried out, will prevent those results that swell the ranks of our enemies. If further purification or rebuilding of the system is necessary, I have found tinct. of chlorid of iron most effective, but give it always in capsules to save the teeth, and give no cause to patient or dentist for future blame. We should be as careful of the teeth as of the eyes or ears.

When this treatment was carefully carried out during the epidemic of the last year, I was often surprised to find that instead of the height being reached on the usual tenth day, at that time all the symptoms had been on the wane for twenty-four hours or more. With that exception they ran the typical course and left the characteristic cicatrix.

Surgeons did not reach their marvelous results until they found out what absolute cleanliness really was and how to apply it. When those same principles are used in the treatment of disease there will undoubtedly be a corresponding success.

To insure this care for all, there are some difficulties in the way with two classes of people: those who are unable, and those who are unwilling to pay for this extra

care. The laity do not know that any care is necessary, as the idea is current that vaccination is such a trivial affair that they might even vaccinate themselves. To insure the co-operation of these two classes, and for the protection of the physician, I have made it a rule to charge for the vaccination, and state that it will include subsequent visits to the office to insure that all is right. This is, of course, less compensation for faithful service in vaccination than for anything else, but with the present state of enlightenment of the public mind on this subject it seems to be the only method to protect both the people and ourselves. It is simply one more gratuitous benefaction added to the already long list to the world by our generous and noble profession.

To enlighten the people is to scatter the army of antivaccinationists, and to prevent unsightly scars, subsequent sickness and mistakes as to a "take" is to rob them of all their ammunition. With the physician rests the responsibility of keeping the people informed on the subject. A physician should in a few words give some information to each person vaccinated, and impress him with the value of the operation. To appear wise to a patient is not so much in the physician's favor as to make the patients feel they have learned something themselves. As the enemies of vaccination are wide awake and on the alert, and their weapons are results that can be avoided by care on the part of the physician, we have only to conclude that the price of the safety and universality of vaccination is eternal vigilance.

DISCUSSION.

DR. JUDSON, Wheeling.—This subject is trite, and doubtless physicians think they know all on the subject. As an officer of health for ten years, I find that although physicians may know everything there is to know about vaccination, they do not place in practical operation the knowledge they possess. The discussion on vaccination during the past few years has tended to prejudice people against vaccination. Whose responsibility is this? I believe the profession is more largely responsible than any one thing. I would, perhaps, be going a little too far in stating that accidents resulting from the introduction of the poison into the system by the operation of vaccination is the result of the carelessness of the operator. How many physicians take the trouble to watch the arm. How many physicians use the capillary tubes containing the glycerinated virus? I believe that no other virus but the glycerinated virus contained in these tubes is justifiable. I believe the profession should discard all other forms, because other forms expose the individual to infection.

As to the matter of dressing the wound, absorbent cotton properly placed can do no harm, but a better method is to place several thicknesses of antiseptic gauze over it, and to treat the wound as you would treat any surgical wound, and so protect it until cicatrization has become complete. In the Section on State Medicine there was reported a death from tetanus. Dr. Sternberg was present and said that the germs of that disease were not injected into the system by the operation, but taken into the system during the subsequent healing of the wound. I hope this will be impressed upon all.

As to the size of the vaccination, it is better to have three or four small cuts than one large one.

DR. JULIA W. CARPENTER, Cincinnati, Ohio.—Two persons have asked me where I vaccinate. When anyone prefers it, on the leg, but I do not select that situation, on account of the motion there. I believe the best place is on the arm, quite near the shoulder. If done at the insertion of the deltoid it is not so easily concealed.

DR. GEORGE C. WORTHINGTON, Baltimore, Md., charged with causing the death of Clara Lockerman, by a criminal operation, was acquitted after a jury trial at Ellicott City, Md., September 20.

RELATION OF URIC ACID TO MIGRAINE.*

BY JOHN A. LICHTY, M.PH., M.D.
PITTSBURG, PA.

It is not strange that the causal relation of uric acid to migraine has repeatedly suggested itself to the minds of physicians, for the etiology of migraine has always been to the clinician what the origin and significance of uric acid has been to the physiologic chemist—a matter of speculation.

The enthusiasm which has arisen in the past decade or more in the study of the secretions and excretions of the living organism, has again awakened investigations referring to the effect of uric acid on the human body, and its relations to disease. So thorough has been this awakening that the foundation principles of pathology and therapeutics seem to have been threatened. Diseases, the etiology and pathology of which were thought to be beyond question, are now considered with reference to uric acid formation. Remedies which were formerly given because they overcame disease, are now given because they counteract the formation, and increase the elimination of uric acid.

Among the many diseases which have been etiologically considered with reference to uric acid, may be mentioned rheumatism, gout, migraine, epilepsy, asthma, and melancholia. Some investigators have become so impressed with the effect of uric acid on the human system that they have attempted to account for a man's disposition, his emotions, and even his character, by referring to the amount of uric acid which he retains in his system. It would seem from the writings of some that philosophy and religion, as well as medicine, would have to be considered anew from the standpoint of the uric acid diathesis.

The study of the relation of uric acid to migraine has, probably, received the most attention. Migraine has been called "the uric acid headache," because examinations of the urine, during and after the attack, seemed to show that the normal relation of uric acid to urea had been disturbed. That is, the amount of uric acid excreted, relative to the urea, is increased during the attack, while after the attack it is normal in quantity for a time, or diminished. "The greater the relative excess of uric acid, and the greater its absolute excretion per hour, the more severe the headache." (Haig.) From this it is concluded that uric acid is the cause of migraine.

With this theory in mind, I have for the past three years turned my attention to the study of the urine with special reference to the relation of uric acid and urea, in the cases of migraine which have come under my observation. In order that there may be no misunderstanding in reference to the results obtained, it will be necessary for me to describe briefly the methods employed in this study.

For the estimation of urea, Liebig's method was employed, which, though not as reliable as Kjeldahl's, for clinical purposes is deemed sufficiently accurate. The uric acid was estimated according to Hopkin's method, described by Von Jaksch, in his "Clinical Diagnosis," with this modification, however. Instead of titrating with the unstable potassium permanganate solution, a decinormal solution of sulphuric acid was used, with methyl orange as the indicator. This was suggested to me by a private student from the laboratory of physiologic chemistry, directed by Dr. E. C. Herter, of the

University of Berlin, and has been found to be reliable.

The urine was collected at the severest period of the headache, and quantitative estimates were made for uric acid and urea. After the headache had entirely disappeared, the urine was collected for the same length of time as before, and subjected to the same analysis. Comparisons were then made between the relation of the uric acid and urea of these two analyses.

The patient was instructed when the headache began, to save the urine of each urination in separate vessels during the entire period of the attack. From these numerous specimens, the one which was voided at the time of the greatest intensity of the headache, was selected for chemical investigation. After the headache had entirely disappeared, the second specimen was collected.

It was thought that if these headaches were due to a uric acid disturbance, it ought to be manifest in the urine at the height of the attack; and, on the other hand, that if the uric acid disturbance which so many investigators have found associated with the headaches, was a result of the attack, it ought to be manifest immediately after the headache had disappeared.

Of the investigations conducted in this way the report of three cases will be sufficient.

CASE I.—Miss H., aged 40, a bookkeeper, has had dull, constant headache from childhood, which, at about 20 years of age, developed into paroxysms beginning over the right eye. The headaches, which are very severe, seem to be induced by overwork, or by slight colds. They are likely to occur during the menstrual periods, which have been frequent and profuse for the past ten years, but occur also at other times. Aside from the headaches, she gives symptoms of neurasthenia, but more of digestive disturbance. She has never had a serious illness. Her mother was subject to headaches, though not of the same nature, and had rheumatoid arthritis, slightly. She is pale, and sallow and weighs 138 pounds, but has no physical signs other than relaxed abdominal walls, and a right movable kidney. Blood examination: hemoglobin, 45 per cent., red blood-corpuscles, 4,600,000, numerous poikilocytes.

URINE ANALYSES.

Time.	AML. c.c.	Sp. Grav.	React'n.	Color.	Urea gm.	Uric Acid gm.	Ratio.
Dec. 28, 1896, between attacks.	100	1024	Acid.	Amber.	2.312	0.627	1-70
Jan. 9, 1897, height of attack.	100	1062	Neutral.	Pale.	0.2366	0.005	1-66
Jan. 9, 1897, after attack.	100	1025	Alkaline.	Pale.	2.43	0.1312	1-16
Jan. 12, 1897, height of attack.	100	1006	Alkaline.	Pale.	0.718	0.006	1-12
Jan. 12, 1897, after attack.	100	1019	Acid.	Amber.	1.57	0.03	1-52
Jan. 29, 1897, height of attack.	100	1017	Acid.	Amber.	1.61	0.0317	1-50
Jan. 29, 1897, after attack.	100	1006	Acid.	Amber.	0.68	0.0185	1-36

A mixed diet, and also nine glasses of milk a day, were prescribed, and phosphate of soda was given three times a day. At the end of a month there was no abatement of the headaches, and the anemia was increased: hemoglobin 10 per cent., red blood-corpuscles, 4,000,000. The milk was then discontinued and salicylate of soda and Bland's pills prescribed. At the end of three months the headaches were not as frequent, nor nearly so severe. The anemia had disappeared, hemoglobin, 87 per cent., red blood-corpuscles, 6,160,000.

The patient then took up her work as bookkeeper, and at the end of a year the headaches had increased in frequency and severity. The blood again showed a slight degree of anemia. A diet, consisting almost wholly of vegetables and cereals was then prescribed, and continued for four months, but the headaches were more frequent than before. A milk diet was then prescribed,

*Presented to the Section on Neurology and Medical Jurisprudence, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

with most disastrous effects, the headaches being more severe than ever.

URINE ANALYSES.

Time.	Am't. Acid. Sp. Grav.	Reac-tion.	Color.	Urea, gm.	Uric Acid, gm.	Ratio.
Feb. 16, 1899, height of attack.	100 1002	Acid.	Pale.	0.26	0.0584	1-30
Feb. 16, 1899, directly after attack.	100 1002	Acid.	Amber.	0.48	0.0285	1-16
Feb. 17, 1899, 18 hrs. after attack.	100 1012	Acid.	Amber.	1.53	0.042	1-36

The patient was again given a wholly vegetable diet, and salicylate of soda was taken three times a day. This was continued for two months, during which time the headaches were as severe and as frequent as when first seen two years previously. The anemia also increased: hemoglobin, 68 per cent., red blood-corpuscles, 5,140,000. A mixed diet, meat two or three times a day, was then proscribed, when the headaches became decidedly less frequent, and the patient improved greatly in general health. This condition has continued up to the present time.

Case 2.—Mrs. R., aged 54, a society woman, has had sick headaches all her life, coming on every week or ten days. The headache always begins on the right side, and is accompanied with nausea and vomiting; she gives a typical description of migraine. Ten years ago she had a double ovariectomy on account of a uterine fibroid, and has not menstruated since. The headaches have continued as before the operation. Her father had similar attacks of headache and a brother is also so afflicted. A physical examination of the patient showed no abnormal signs. Examination of blood: hemoglobin, 100 per cent., red blood-corpuscles, 5,920,000.

URINE ANALYSES.

Time.	Am't. Acid. Sp. Grav.	Reac-tion.	Color.	Urea, gm.	Uric Acid, gm.	Ratio.
Aug. 8, 1898, height of attack.	100 1018	Acid.	Pale.	2.058	0.0419	1-49
Aug. 23, 1898, height of attack.	100 1008	Acid.	Pale.	0.92	0.0672	1-136
Aug. 23, 1898, after attack.	100 1014	Acid.	Amber.	1.54	0.0436	1-35

This patient was allowed to take a vegetable diet. Salicylate of soda in 5-grain doses was given three times a day. At the end of two weeks a second headache occurred, which was mild; in two weeks more, a third attack, very mild; in two weeks again, only suggestion of a headache, and thereafter, no headache at all. At this time the blood examination was as follows: hemoglobin, 93 per cent., red blood-corpuscles, 5,840,000. This condition continued for six months. Social duties were again undertaken, and the headaches became almost as frequent as before, though not nearly as severe.

Case 3.—Mrs. F., aged 40, complains of a frontal headache, accompanied with nausea and vomiting. The attacks occur every seven or ten days. She has had these headaches since early childhood, has always had obstinate constipation, but no hereditary history of migraine. The patient is pale, and very nervous; tongue, heavily coated; pulse, 96; no valvular heart disease; has hemorrhoids and retroversion of the uterus. Blood examination: hemoglobin, 83 per cent., red blood-corpuscles, 5,520,000.

URINE ANALYSES.

Time.	Am't. Acid. Sp. Grav.	Reac-tion.	Color.	Urea, gm.	Uric Acid, gm.	Ratio.
Oct. 19, 1898, between attacks.	100 1010	Acid.	Pale.	1.13	0.025	1-45
Nov. 7, 1898, height of attack.	100 1016	Alkaline	Pale	1.32	0.028	1-42
Nov. 7, 1898, after attack	100 1020	Acid.	Amber.	3.28	0.201	1-11

The patient was allowed a vegetable diet, and salicylate of soda was prescribed in 5-grain doses three times a day. Owing to sickness in the family, which called the patient away, no further observations were made.

It will be seen from the study of these cases: 1, both uric acid and urea were diminished during the height of the headache, but their relation was not disturbed; 2, that after the headache, the urea increased to about what it was between the attacks, while the uric acid increased much more, thus changing the former ratio.

These results differ from those on which the uric acid theory of migraine has been founded, in that the urea has not been found so stable a quantity as the results of other investigators show; and that the uric acid has not been increased during the headache, but, on the other hand, greatly diminished. Immediately following the headache, however, there was a great increase of uric acid.

When in these cases, however, the urine was collected during the whole period of the headache, and after the headache the urine was again collected for the same length of time, and quantitative analyses made of these two collections, the results were found to correspond exactly with those on which the uric acid theory has been founded.

From this it was concluded that the uric acid wave which is immediately associated with migraine does not appear until the latter part of the attack, and is really at its height when the attack is passing off. In other words, the time of the greatest severity of the headache precedes the highest point of the uric acid wave by a period of from two to three or four hours, as the case may be.

If this be true, and all my investigations have confirmed it, then it would seem that the increase of uric acid which is associated with migraine, is the result and not the cause of the headache. This conclusion does not seem unreasonable, when one recalls the decided digestive disturbances which take place during an attack of migraine. Digestion seems to be stopped at once, and nausea and vomiting follow. There is a disgust for food, and the appetite does not return for several days.

The uric acid theory of migraine does not alone depend on what is believed to be an absolute fact; namely, that uric acid is excreted in larger amount, absolutely and relatively to urea, during an attack of headache than at other times, but it is supported by a number of hypotheses which recent research has proved to be untenable.

It is supposed that migraine, being the sensory equivalent of epilepsy, must be due to the same cause as epilepsy, and, partially from the results of chemical analyses, and partially from analogy, it is concluded that epilepsy is due to a uric acid condition. But those who have studied epilepsy more recently from this standpoint, have come to the conclusion that the idea that the epileptic seizure is in any way caused by uric acid poisoning is wholly incorrect, and that the increased uric acid is an entirely secondary phenomenon, dependent on disturbances of digestion and metabolism due to the seizure itself.

It is stated that during an attack of migraine there is an excess of uric acid in the blood, and, as the same condition exists in an attack of gout, therefore migraine and gout must be due to the same cause, uric acid. But recently in the study of sixteen cases of gout by Adolf Magnus-Lövy¹, he found that while uric acid in the urine was distinctly increased in nearly all cases of

¹ Zeitsch. f. Klin. Med., B. xxxvi, H. 5-6.

gout, especially during the first day, there was no diminution of alkalinity of the blood, but, in some cases, there was a slight increase of alkalinity. Until such a careful study of the blood is made in migraine, it will be a mere guess to say that there is more uric acid in the blood during the attack than at other times.

Because there is a leucocytosis, similar to that in uric acid diathesis, often present in attacks of migraine, it is concluded, according to the theory of Neusser in reference to the perinuclear basophilic granules, that migraine belongs to that class of diseases commonly called the uric acid diathesis. But a study of fifty cases having the uric acid diathesis, by Charles E. Simon², showed that there is no constant relation between the presence of the basophilic granules, and the elimination of uric acid or even of xanthin bases.

In accord with the uric acid theory of migraine, the vasomotor phenomena, the angiopastic, and the angioparetic conditions described by Mollendorf and Latham, have been attributed to a "blocking up of capillaries by colloid uric acid." This is certainly a very ingenious explanation, but failing to confirm it by ophthalmic studies, and by every means at one's command, it is an unsatisfactory explanation of migraine as the vasomotor neurosis theory, itself.

From these refutations of the hypotheses, on the validity of which depends in a great degree the uric acid theory of migraine, it is concluded that whatever foundation there is for it, the theory must be based on the chemical investigation of the urine. But, as stated heretofore, in studying the urine closely through the attacks of migraine, it was always found that the highest period of the wave of uric acid excretion followed by several hours the period of greatest intensity of the headache. From this it seems evident that the increase of uric acid secretion which is associated with migraine must be the result of the headache, and not the cause of it. It can not be denied that through these studies of uric acid and certain by-products in the urine, we are coming to a closer knowledge of the causation of migraine, but Gower's statement is still applicable: "When all has been said that can be, mystery still envelops the mechanism of migraine."

MIGRAINE*.

BY SAMUEL J. WALKER, M.D.
CHICAGO.

Migraine and headache are commonly considered synonymous terms. Migraine is, however, a distinct disease, the headache being its most pronounced and distressing symptom. In rare cases we may even have migraine without headache. It is undoubtedly the most frequent of all neuroses.

It is my desire to record some of the more striking manifestations of the disease as gathered from an unusually rich clinical experience. I shall base my remarks on the notes taken on fifty consecutive cases, the majority of which are taken from the neurologic clinics of Dr. H. T. Patrick, Chicago.

In looking over the notes, the first important item is the family history, the usual entry being "mother migrainous," "mother and two maternal aunts migrainous," "mother and mother's mother migrainous," "mother and father migrainous," "mother and two sisters migrainous," etc., the disease showing itself in six or seven mem-

bers of a family in some instances. To be exact there is a distinct history of direct heredity in 40 of the 50 cases. Of the 10 remaining cases, 8 knew little or nothing of parents and family; 2 explicitly said that neither mother nor father had headaches. Throwing out the 8 cases of uncertain history, we have 95.2 per cent. of the cases showing migraine in the family. Such figures are extremely significant. Thus we see that direct heredity easily plays the star rôle in the etiology of migraine. We might almost say that heredity was the *sine qua non* of the disease, the exceptions being only sufficient to prove the rule.

How the disease is transmitted, whether through the blood, or through instability of nerve-cells leads at once into the domain of theory, which has no place in this paper. The whole question of heredity is little understood and vague, and need not be touched on here. Suffice it to say that the pathology of the disease is unknown, no theory so far advanced being able to sufficiently explain all the phenomena of the disease. Moebius, in his monograph on migraine, says that 90 per cent. of his cases—87 in number—gave a history of migraine in the family. With such figures confronting me it is difficult to see how the other conditions so frequently ascribed as causes of migraine can assume any prominence, such as eye strain, deviations of septum, adenoids, pelvic disturbances, gout, rheumatism or lithemia. Because we sometimes see in the same patient adenoids and migraine, eye strain and migraine, indigestion and migraine, pelvic disturbances and migraine, hemorrhoids and migraine, etc., does not prove anything. They are simply coincident conditions. In England, where gout is very prevalent, much weight is ascribed to gout and lithemia as etiologic factors in migraine. In Germany, where there is little gout, Moebius states that he has never seen a case of migraine with gout, or with a family history of gout. Any of these coincident conditions may act as exciting causes, precipitating attacks, making them more severe and frequent.

It goes without saying that all such depraved conditions must be corrected as the first step in any plan of treatment. No modern medical man would to-day think of treating epilepsy, for instance, without first eliminating, so far as possible, all abnormal conditions, which might act as exciting causes of attacks. The best authorities, however, do not claim for an instant that the underlying cause of epilepsy is reflex in character.

With figures so overwhelmingly in favor of direct heredity as the etiologic factor of migraine, the so-called reflex causes assume insignificant proportions. I believe that these figures will assume even larger proportions, the more thoroughly and carefully family histories are elicited. A history of severe paroxysmal headache, extending over a number of years, is highly significant of migraine. Add to this a family history of migraine and the diagnosis is assured. Ophthalmic symptoms and vomiting are unnecessary for the diagnosis. It is always to be remembered, however, that brain tumor, chronic Bright's disease, glaucoma, or any organic lesion may develop in migrainous patients, and are to be excluded by the usual methods.

Authorities differ largely as to the part sex plays in the etiology of the disease. All agree, however, that females are more frequently affected. In Moebius' cases 60 per cent. were females. In Henschens' 140 cases 90 per cent. were females. In my series of 50 cases 80.4 per cent. are females. Of the 10 cases giving a distinct history of direct heredity, in 82 per cent. the inheritance is from the mother's side. Gowers says that in epilepsy

*Presented to the Section on Neurology and Medical Jurisprudence, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

² Am. Jour. Med. Sci.

more females suffer from the disease when the inheritance is from the mother's side, more males when from the father's side. If the same is true of migraine—the two diseases are certainly closely allied in many respects—it would account for the preponderance of females in my cases.

I now come to what I consider the most striking and practical item elicited from my series of cases. I refer to the age element. According to the notes the first attack occurred at the following ages: 1 to 5 years, inclusive, 4 cases; 6 to 10 years, inclusive, 26 cases; 11 to 15 years, inclusive, 10 cases; 16 to 20 years, inclusive, 4 cases; 21 to 30 years, inclusive, 4 cases; over 30 years, 2 cases. We have then 60 per cent. of the cases beginning at 10 years of age and under; 80 per cent. at 15 and under, and 88 per cent. at 20 years and under. Gowers states that 33 per cent. of the cases begin under 10, and 73 per cent. under 20 years. Mœbius, in his monograph, presents a table showing 56 per cent. of 59 cases beginning at 10 years and under.

The most frequent replies to the question as to when the headaches began are: "Ever since I can remember," "since early childhood," and "since childhood." All such cases I have classed as beginning at 10 years or under. Two of the 4 cases classed as beginning at 5 years and under are at present writing only 5 and 3½ years of age, respectively. The other two gave explicit history of beginning at 5 years of age. Such figures are significant and important. They help us understand the nature of the disease, they help us in the diagnosis, and in therapeutics.

When we remember that migraine is exquisitely inherited, and occurs in early childhood in the majority of cases, we certainly have valuable data for diagnosis and treatment. Migraine in children is frequently unrecognized. I saw a case two years ago in a girl 8 years of age. The attacks were frequently ushered in by scintillating scotoma, and were usually concluded by nausea and vomiting. The child's mother and four maternal aunts suffered from severe migraine. Yet this patient had passed through the hands of two competent men without having the nature of the trouble recognized. If such typical attacks are sometimes unrecognized, what becomes of the atypical and rudimentary cases.

Migraine in very young children is an interesting disease. It is my belief that the cyclic vomiting described by Holt, in his recent work on "Diseases of Infancy and Childhood," is migraine. Holt himself says it has many points of resemblance to an attack of migraine. He describes cyclic vomiting as follows: "The disease is characterized by periodical attacks of vomiting, recurring at intervals of weeks or months, without any adequate exciting cause. The vomiting is severe and uncontrollable, and usually lasts from twelve hours to three days. It is attended with symptoms of general prostration, which may be alarming. The children who are subjects of it may show in the interval nearly all the signs of perfect health." He then cites the following case: "The patient was a well-nourished boy of 6 years when he first came under treatment. He belonged to a neurotic family, and the attacks dated back to infancy. From this time they had recurred usually at intervals of a few months; occasionally five or six months would pass without one. The symptoms in all the attacks were similar in kind, differing only in degree. I observed three of them. They were preceded by a prodromal period, lasting from twelve to twenty-four hours, marked by languor, dulness, dark rings under the eyes, loss of appetite, and a general sense of discomfort in the epigastrium. At this time the tem-

perature was generally, but not always, elevated, sometimes to 103 F. The vomiting then began suddenly. It was attended with great retching and distress; it was forcible and often repeated every half hour or hour for two days. On one occasion it occurred seventeen times in a single night. Vomiting was immediately excited by the taking of any food or drink, but it occurred when nothing was taken. The vomited matter consisted of frothy mucus and serum, frequently streaked with blood, apparently from the violence of the emesis. The reaction was strongly acid; sometimes there was bilious vomiting. The temperature usually fell to about 100 F. when the vomiting began, and continued at or below this point throughout the attack. By the end of the second day the exhaustion was very marked—so severe, in fact, as to apparently threaten life. The child lay in a semi-stupor with eyes half open, lips and tongue dry, rousing at times to beg for water. The pulse was rapid and weak, and sometimes slightly irregular. There was no distension of the abdomen; it was usually flattened. By the third day the vomiting became less frequent and then ceased entirely. Convalescence was rapid and by the end of the week the boy was as well as usual."

The neurotic family history, the paroxysmal character of the attacks, extending over a period of years, the prodromal period of languor and loss of appetite, followed by vomiting, mark this history, in my opinion, an undoubted case of migraine. The well-known susceptibility of a child's nervous and physical systems would explain the rise of temperature and the rather prolonged attack.

I also believe that the gastro-enteric lithemia as described by Rachford, in the "American Text-Book of the Diseases of Children," is migraine. Rachford cites the following cases to illustrate the gastro-enteric symptoms of lithemia: The patient, a boy aged 4 years, had a gouty ancestry on both sides. After stating that this little patient had had periodic attacks since infancy, very similar to the attack in Holt's case just cited, Rachford goes on to say: "The point of special interest in this boy's case is that these attacks have changed in character. At the present time vomiting is no longer a prominent symptom. They are now characterized by headache with nausea, and followed by a more or less prolonged narcotism, during which the child falls into a deep sleep, from which he awakens somewhat improved. In brief, one may say that the gastro-intestinal paroxysms of his infancy are being transformed into true migraine. This substitution of one form of lithemic paroxysm for another is quite characteristic of the disease." From this description it is very evident that Rachford considers migraine a symptom of lithemia, a relation which I think needs further evidence to fully substantiate it.

In connection with the above cases the history of the two following cases from my own notes is interesting:

CASE 1.—H. S., male, aged 31½ years; mother has severe migraine and very nervous, father migrainous. For the last two years the baby has had periodic attacks of prostration, complete anorexia, followed in about twelve hours by uncontrollable vomiting; even whey and egg-water were not tolerated by the stomach. In the beginning of the attack there was moderate temperature, 100 to 103 F. The recovery was rapid and complete. Between attacks the child is the picture of health. The attacks are less frequent in spring and summer, the family spending about five months of the year in the country.

CASE 2.—H. F., female, aged 3 years; mother migrainous and very neurotic; father migrainous up to five

years ago. This little patient has had periodic attacks of vomiting and diarrhea for the last eighteen months. The vomiting is preceded by a short period of complete anorexia and prostration, and followed by narcotism that is sometimes alarming, i. e., in the last attack the patient lay in a semi-stupor all one day, a slow convalescence beginning on awakening. The temperature in this case usually ranged from 100 to 102 F. for the first twelve or eighteen hours of the attack; after sleeping, normal.

I consider both these cases migrainous in character, for the following reasons: Mother and father are migrainous in both; in both the attacks are paroxysmal; in both there is unusually good health enjoyed in the intervals; in both no apparent cause for the attacks could be elicited; in both there is prostration and vomiting, and in both the attacks are self-limited. In my opinion the diagnosis of migraine is more than justified; it is assured. It will be interesting to follow these cases, to watch for the development of headache, as occurred in Rachford's cases. In the light of the above illustrations it seems to me that the more carefully we study such cases, the more often will we find manifestations of migraine.

Several other forms of atypical migraine remain to be mentioned. I have in mind a case with the following history: Mrs. W., aged 30 years, mother migrainous. For the last six or eight years has had periodic attacks of weakness, accompanied by dull, deep headache in eyes; no nausea and no vomiting. The slightest noise or jar aggravates the symptoms; even walking makes the patient distinctly worse. She has marked pallor during the attack. Another case of rudimentary form has the following history: A boy, aged 9 years, family history unknown, had sudden periodic attacks of dimness of vision, accompanied by zig-zag flashes of light, lasting about fifteen minutes; this scintillating scotoma ushered in a feeling of discomfort "deep in eyes," lasting a few hours; no headache; no vomiting. Long-continued use of cannabis indica markedly diminished the frequency of the attacks. These are undoubted cases of rudimentary migraine, with the weakness in the one, and in the other the scintillating scotoma as the principal symptoms.

Gowers says that visual disturbances occur in at least one-half of the cases. In my series of 50 cases, only 30 per cent. gave a history of ophthalmic symptoms. The ophthalmic symptoms met with in the 15 cases referred to presented all the variations from simple scotoma to complete hemianopsia with scintillating scotoma. Gowers and Mochius say that the disturbance never amounts to a true hemianopsia, i. e., that the loss of vision in the affected areas of the retina is never absolute. They also say that the apparent hemianopsia or scotoma is always double. As this can only be proven in the attacks, my experience is too limited to be of value. Patients usually say the vision is affected in only one eye. The double-sided nature of the disturbance can easily be proven by instructing patients to cover or close the apparently affected eye during an attack.

I report the following interesting history of ophthalmic migraine, through the kindness of Dr. Patrick:

T. C., male, aged 23 years, mother migrainous and one brother with history of headaches, gives a history of severe paroxysmal headache since boyhood. At 17 he had his first attack ushered in by hemianopsia; attacks gradually grew worse. He woke up one night with a feeling of discomfort in the eyes; then distinct hemianopsia developed, right one-half of field gone; added to this was a scintillating scotoma, shaded with color "some-

thing like a rainbow." This lasted about twenty minutes, then nausea developed with pain deep in the eyes, through to the occiput and top of the head. Another attack was the same as above, except that the hemianopsia was followed by numbness and tingling in the right hand and elbow; this lasted about fifteen minutes, then the right half of the tongue, lips, and pharynx became numb and tingled; this lasted about five minutes, then the pain grew worse and was followed by vomiting. Finally this patient had an attack similar to the last described, with aphasia added; the aphasia was complete for about one minute; then he began to stutter and speak slowly; as he expresses it, "the words came in crossed." "Thinking one thing and saying something entirely different."

Such severe attacks are fortunately rare. They serve to show, however, the distinct cerebral nature of the disease, and also emphasize the relation between migraine and epilepsy. The relation between the two diseases is obscure, but they certainly have much in common. In both 75 per cent. of all cases begin under 20 years of age. In both the majority of victims are females. In both the pathology is unknown. In both the attacks are paroxysmal in character, and, finally, we not infrequently see cases of migraine pass over into epilepsy, the migraine attacks ceasing altogether, or becoming less frequent and severe. Sometimes the epileptic attacks pass over into migraine, the fits ceasing altogether or becoming less frequent and severe. The following history is one of five such occurring in my 50 cases, and well illustrates the relation: Mrs. B., aged 38 years, mother migrainous, was a victim of severe migraine, beginning at 5 years of age. From the twenty-seventh to the twenty-ninth year attacks were unusually severe. About this time she had her first epileptic fit; since, migraine is much less frequent; now, idiopathic epilepsy.

Our routine treatment for migraine is the fluid extract of cannabis indica¹. The drug is begun in small doses, and gradually increased until some physiologic effect is obtained. It is then continued at a dosage just below that causing physiologic effect for a long time, at least several months or more. There is nearly always some amelioration of symptoms following the exhibition of cannabis indica thus given. If, in addition, patients have the benefit of fresh air and country life, one may promise, of course with reservations, marked diminution in the frequency and severity of attacks. Of course, as touched on before in this paper, all abnormal and depraved conditions must receive their appropriate treatment. No plan of treatment is complete that neglects as unimportant the so-called reflex causes of the disease.

In conclusion I want to make a plea for the more careful study of this most interesting disease, especially of its manifestations as occur in early childhood, and of other atypical types.

BIBLIOGRAPHY.

1. Moebius, P. J.; Die Migrane, B. xii, Nothnagel's Specielle Pathologie und Therapie, 1894.
2. Osler; Practice of Medicine, Edit. iii.
3. Leconte-Thompson; Am. System of Practical Medicine, Vol. iv.
4. Gowers; Diseases of Nervous System, Vol. ii, Edit. ii.
5. Rachford; Am. Text-Book of Diseases of Children, Edit. ii, p. 96.
6. Mills; Am. Text-Book of Diseases of Children, Edit. ii, p. 719.
7. Holt; Diseases of Infancy and Childhood, Edit. i, p. 287.
8. Oppenheim; Lehrbuch der Nerven Krankheiten, Edit. i.
9. Sachs; Nervous Diseases of Children.

DISCUSSION.²

EDWARD D. FISHER, New York City.—I would begin the discussion of this subject by drawing attention to the importance

¹ It is absolutely necessary that the preparation used be of known activity.

² The papers of Drs. Billings and Risley, in the symposium of which this discussion is a part, appeared last week. Dr. Zenger's paper was printed in abstract, in the JOURNAL of August 25, part 127, p. 557.

of two essential conditions in headache, i. e., a persistent continuous headache and an evanescent, paroxysmal or periodical headache.

The first form, that is, one which is ever present, although it may be subject to paroxysmal exacerbations, is always indicative of an organic lesion as the cause, or to permanent blood changes or diatheses, as syphilis, gout, uremia, lead, etc., while the latter or paroxysmal type is indicative of transitory physical conditions, as overfatigue, indigestion or auto-infection, excesses, as in alcohol, tobacco, etc.

In the first class, therefore, we are considering a symptom of far greater importance as to the ultimate result to the patient's future than in the second class, as in the former death may be the only possible result; whereas, in the latter, while the suffering may be as intense or even more so, the danger to life is small.

The significance of persistent headache is the fact, therefore, that it points to a fixed organic disease somewhere in the system. The most important and those which we learn daily to take into consideration are diseases of the dura mater, i. e., pachymeningitis. The pia mater, unless it involves the dura mater, causes no pain when the subject of disease. The primary disease may indeed be of pial origin, but if pain is of a marked character, it necessarily implies that it has involved the dura mater secondarily.

The commonest causes of headache due to pachymeningitis are suppuration of the cranial bones, either following injury or disease, as syphilis, tuberculosis, tumor or, again and especially, otitis media.

In epidemic cerebrospinal meningitis, simple and tubercular meningitis, we have sufficient exudation thrown out to explain, by pressure, the presence of pain. Outside of such conditions and localized injuries to the skull, involving its membranes near the surface, the localization of the headache is rarely indicative of the site of the disease or lesion.

Tumors of the brain can not usually, except under the conditions I have referred to, ever be located by the situation of the pain. Occipital pain does not necessarily mean, with all the other symptoms of cerebral tumor—abscess—present, such as general convulsions, stupor and optic neuritis, a tumor of the cerebellum. In a case reported by me some years ago, with the general symptoms of cerebral tumor as above given, the pain was most intense and agonizing over the frontal lobe, and as this was the only localizing symptom as to the situation of the tumor, we operated at this point, yet post-mortem revealed the tumor in the cerebellum.

More important to the general physician as diagnostic of organic disease of the brain than, as shown by injury, suppuration, car disease or tumor, as these give other symptoms which often naturally lead to a diagnosis, is the importance of persistent headache as pointing to arterial disease, i. e., arteriosclerosis, dependent on some dyscrasia as Bright's disease, diabetes, gout, syphilis, lead, etc. In these cases we rarely have a localized cephalalgia. It is usually general and more subacute than acute, combined with a feeling of compression. This form, unless in the very young, where anemia is the most frequent cause, almost invariably points to degenerative changes in the blood-vessels. It is the premonitory symptom of apoplexy or cerebral softening.

Persistent headache, therefore, is always of great importance, as indicating organic disease of the brain and membranes. In children, as in adults, its significance should never be lost sight of. It always means, in the young, either anemia, meningial or brain disease, eye strain, or again some chronic inflammation of the middle ear. In the so-called functional headaches, characterized by their being paroxysmal, periodical and short-lived in their attacks, we must always look for some local cause.

Here come in the factors of heredity with lithemic states, temporarily brought to a point of excitability by too free use of certain articles of diet, as sugar, nitrogenous food stuffs, etc., or again by retention in the blood of certain poisons, the result of auto-infection. The headache of acute uremia is an example of this form, or the sick headache or migraine. The douloureux I do not include in this list, as here we are probably dealing with degenerative neuritis.

I have only tried to emphasize the importance of the presence of a persistent headache as always indicative of organic changes. As a symptom, it should never be ignored, and especially is it of importance in the chronic conditions represented by diseases of the cerebral vessels. It is in this class of cases that the general practitioner is most apt to see it, and the one also which he is especially calculated to take under his own care.

Headache is too often referred to the specialist on nervous diseases, while it more properly belongs to the student of gen-

eral medicine. While the so-called nerve specialist is more in touch with the general practitioner than any other of the so-called specialists, being called on to study all diseases of the various organs of the body, still I, in closing, must emphasize the fact that headache is not a disease per se, as pneumonia, but is simply a symptom of a variety of diseases of the body as a whole, which the general practitioner is best fitted to understand.

DR. NORMAN BRIDGE, Los Angeles, Cal.—The papers have covered the subject of headache very thoroughly, in most particulars, and leave very little to be desired.

I assume that Dr. Fisher did not mean to say that any headache was utterly and completely continuous. I believe that is not the case anywhere, except for a little time. The migraines are not continuous; certainly the headaches due to meningitis are paroxysmal, the headaches due to nephritis are certainly paroxysmal, and so on; but I presume that he used the word "continuous" in that sense. I was a little surprised that Dr. Fisher, in speaking of headaches produced by things swallowed—by things imbibed—referred only to the different foods, excess of food, etc., as being capable of producing headaches. What he said is true, but it seems to me that most of such headaches are produced by tea, coffee and tobacco.

Dr. Billings referred to that fact in his paper. What Dr. Billings said is certainly correct, that the headaches produced by gastro-intestinal troubles are less due to disturbances of the gastro-intestinal mucous membrane than to the predisposition. People who have no predisposition to headache, hereditary or otherwise, may indulge in great excesses in the way of eating and drinking, and great irregularities, and have excessive gastro-intestinal irritation without having any headaches at all. The hereditary predisposition, as Dr. Walker said, is the larger part of the causation.

I was glad to hear Dr. Walker say that headache is only one of the symptoms of migraine. I do not think he emphasizes so much as he might safely have done, the various changes that take place in migraine during the march of time. In cases of this kind there is a change in the symptomatology of the migraine every half day. A symptom may be absent for the first fifteen years of migraine, only to occur for five or ten years, and then disappear again. Then the headache phase may be very pronounced in the early period of migraine, to grow less as the years go, and disappear entirely toward the middle period of life, and the paroxysms be represented by various other explosions, like diarrheas. It may also be shown, and is occasionally, in these patients, by the sole symptom of increased urination—diuresis.

Ninety-five per cent. of all cases of migraine are helped somewhat by stopping the use of tea, coffee and tobacco, and I should say that the agent that is most responsible for the aggravation of the symptoms is coffee, next would be tobacco, and the least of all is tea. But the migrainous patient may, after a period of susceptibility to the influence of coffee and these other agents, pass out of that susceptibility, and be able to take these substances regularly without any discomfort or harm.

The thing that did surprise me in Dr. Walker's paper was that he characterized so positively the relation that he assumes to subsist between migraine and epilepsy. Analogy I concede; it is clear and certain; each is a disease that is paroxysmal, and each is a disease that is largely incurable, and so on; but that they are convertible one into another is certainly new in my observation of migraine. I have searched for a long series of years, without success, for a case that illustrated it in any degree whatever. The case related by Dr. Walker does not seem to me sufficient to prove any nexus between the two diseases. It does seem to me that patients with migraine are especially free from tendencies toward epilepsy; that the disease somehow apparently protects them from other diseases of the body. That is the only comfort that the migrainous patient can have that I know of.

The paper on the relation of headache to the uric acid theory is certainly a most interesting and instructive one. My own belief has been heretofore that there was no relation between migraine and uric acid diathesis. I know that expression is not very scientific; at any rate, it is an expression for a condition about which doctors and the best pathologists seem to be in more or less dispute. Certainly the theories of the English authors quoted by Dr. Liehty have very little weight, for Haig is a great doctrinaire, and I can not make his theories seem rational to my mind.

This, however, is true: he shows in his paper that salicylate of soda lessens the headaches in some of these patients; he showed how various other treatments did not lessen them. Salicylate of soda he would call an anti-gouty medicine, and I would suggest that he try simple bicarbonate of soda in these

cases, and see if it does not produce just as wonderful results, and if it does, as it has under my own observation, it seems as if it gives us warrant in believing in the existence of a diathesis of some sort that is amenable to this kind of treatment; whether it is to be called the uric acid diathesis, whether the mischief is in the particular directions that these authors say or not, there is some diathesis of that sort that can be treated in these ways with benefit to the patient. I confess that I have rarely given the alkaline treatment in the pure migraines, but in the headaches produced or aggravated by gastro-intestinal disturbance I have in the last two or three years given considerable doses of bicarbonate of soda with marked improvement. The doses were taken half an hour before a meal, and the meal was selected that was most likely to be followed with acid eructations; usually the largest meal in the day. These patients have had less headache and gastro-intestinal disturbance. There is no question as to the relation between their feelings and the medicine; the only question is whether the alkaline treatment improved the digestion, improved the condition of the stomach by enabling it perhaps to manufacture better gastric juice or better peptic properties for digestion, or whether the alkali actually corrected, in some degree, this suppositive diathesis. Not only have I seen the headaches improved, but in a few instances I have tried this in those curious recurring diarrheas that are migrainous, that is, occurring in migrainous patients at a time in their life when the headache paroxysms have ceased to exist, and while the patient knew from experience that when a diarrhea had come on it would last from two to three weeks; in spite of all the regulation and diet possible, and in spite of bismuth and other remedies for irritation of the bowels, it promptly improved on giving the patient these large doses of bicarbonate of soda. I am bound to say that in addition to this some saline laxative was given at the same time; not enough to cathartize the patient, but enough to give a slight laxative effect; it did not seem to matter which laxative was used. The alkaline treatment seems to have a pronounced effect on these cases, and a most interesting suggestion as to the so-called uric acid diathesis, not merely as to the diathesis per se, but the diathesis as perhaps influencing the headaches, and possibly the migrainous headache.

What Dr. Zenner of Cincinnati said in reference to the mental effects in the headache is certainly very interesting. I would only say that it seems to me that it is not entirely necessary to assume that the surgical operations relieve the headaches in the cases referred to by mental impression. They may have done so in the cases related. But we know that a surgical operation does interrupt and intercept various nervous phenomena for a limited time, unexpectedly, and frequently under circumstances that make it impossible and perhaps unfair to assume that mental impression is instrumental in producing symptoms. The patient takes ether or chloroform; he suffers a wound, and when he comes to himself he has a dressing on, and he is in bed, and he has, perhaps, before the operation received extensive catharsis, and afterward is kept on a low diet, and kept quiet and free from disturbing circumstances, and so in this way the surgical operations may produce these changes without assuming that the effect is a mental one. I believe that a patient may be taught to ignore, to a considerable degree, a moderate headache, to be philosophic about it and pay no attention to it, and thus soon cease to feel it. We should always encourage the sick to do this as far as possible.

DR. L. B. TUCKERMAN, Cleveland, Ohio.—I came here for a personal interest, for further back than I can remember, I have been a sufferer from paroxysmal headache. I am in doubt yet, even after this full discussion, whether it is rheumatic headache, or hereditary headache, or due to eye strain, or intestinal complications, or what not. When I first had it as a child it was called a bilious headache, and it was my father's habit to administer Ayer's pills to me when it came on. I had an idea that it was hereditary, my mother, my mother's mother, my mother's mother and grandmother had it. My mother's grandmother died at the mature age of 102; her mother at 82, and my mother is still living. In relation to epilepsy, although every member of my mother's family has had headaches as I have them, there is not a member of the family, so far as I know, who has ever been the subject of epilepsy. There has not been a generation in the family, however, but what in certain conditions of headache or fever are sleep-walkers or sleep-talkers. I can remember as a child that, as the paroxysm came on, although I did not fall asleep, it seemed to me that the bed was aching, and my desire was only to get the bed into a more comfortable position! To-day, in the paroxysms of headache I can not lie down until it is over. I have thought that this headache was rheumatic, because

my father and mother had rheumatism, and I have occasional attacks of it, and I have noticed that when the headache or the pain passes into the back in a sort of lumbago, the headache ceases, but the attacks come on pretty promptly.

When this question of eye strain came out, I got glasses, but I have headache yet. There is one symptom that I have noticed that has not been mentioned; at the expiration of every attack of headache, so far as I can remember, the critical point in the subsidence of the headache was the discharge from the bowels of an intensely acrid, scalding substance, which has been producing pain which is almost dysenteric. I have settled now on sitting up with my feet to an open fire, if it is winter, and drinking all the hot water I can get down, and it does as well as any remedies I have thus far tried.

DR. CURTIS, Chicago.—I must express my gratification that the question of migraine has been thus handled, because it is important that it be recognized as something distinct from a headache. It strikes me that it is of all the neuroses the one which is the most true to itself in its manifestations. It has an intimate connection with epilepsy. The cases reported by Dr. Walker, and a similar case reported by the doctor from Philadelphia, half a dozen reported in *Brain*, last year, half a dozen which I have seen myself, have left in my mind not the slightest doubt that there is a genuine relation between these two neuroses. It is not unusual to find, in the same family, certain individuals presenting migraine and others presenting epilepsy. The onset of epilepsy in the developmental period of life, and the onset of migraine in the same period, serve to confirm this idea. In women, at the cessation of the menstrual activities, migraine almost invariably ceases. In men there is, as a rule, in my experience, and from the best recollection of my case-book, a tendency for migraine to cease after the age of 60. It is one of the manifestations of a stress of life acting on an organization not quite up to bearing these strains.

I have observed that migraine is likely to occur during the period from 5 to 8, when the eyes are first used in learning to read; but many of those cases present no difficulties in the eyes, or the correction of such difficulties does not relieve the symptoms. I was surprised to hear Dr. Bridge say that he had not noticed this relation between epilepsy and migraine, because there is scarcely six months passes in which I do not see an instance of this sort.

In reference to the action of the mind in regard to the management of headaches, I feel, as Dr. Bridge has already expressed, that in the two cases of cerebral tumor subjected to operation, there were many elements entering into this besides the actual operation. The opening of the bowels, the surgical blood-letting, and so on, might have that effect, just as a number of doses of iodid might have it.

DR. CHARLES H. HUGHES, St. Louis, Mo.—I wish to record my skeptical views in regard to the attributed causes of migraine or headache. I do not believe that any of the theories are tenable for the development of headache symptoms that we ordinarily encounter. I do not believe that headache and epilepsy are at all associated diseases.

In regard to the longevity of headaches, headaches have been common in my family for several generations back; my father used to have headaches, my mother, my mother's mother and father, my grandfather and my great grandfather. There are, however, no records of any epilepsy in the family, or any other neurosis. All the members of the family have attained a very advanced age.

I had headache recurring during every month, the result of brain strain, because I paid no regard to the laws of psychic recuperation. It was my custom to drink from one to three quarts of strong coffee a day, far into the night, in order to prevent sleep, on the old supposition that the brain was not dependent on the organization, and that the amount of labor you could perform was a question of will-power. My headaches came on one day in the month, and disabled me for one whole day. I had to retire to a darkened room, and wait until recuperation came about, and it was one of the most conservative processes of nature that I have ever had the good fortune to have before me, for it saved my life in that way.

I do not believe the uric acid diathesis has any more to do with migraine than any other case. It is certainly not the exclusive cause; it may be one of a number. Migraine is dependent on the sources of irritation and nerve exhaustion, and these may be as varied as the causes of pain in any other part of the system.

DR. JOSEPH V. KORROK, Cleveland, Ohio.—I have had a little experience in headaches in children. I particularly remember one case in which I was called after the family physician had been away for some time, to see a girl about 8 years old, and they told me she had headaches very often; every two weeks she had to lie in bed a day or two, and the doctor gave her a

cathartic, and she was all right again. It occurred to me to look into the throat of that child, although she did not complain of it at all. I found a very inflamed tonsil, which I treated, and she has had no headaches for six months. She still, however, has occasional attacks when she does not feel well, probably for a number of hours during the day.

It struck me that in some of these cases where there had been fever, which we notice is particularly high in tonsillitis, and vomiting and other severe symptoms, tonsillitis might be the cause. Personally I feel that tonsillitis is often the cause of headache in children.

DR. A. E. STERN—It seems to me that we can not generalize too much on this subject. I believe that almost every individual class of cases can be separated, and some cause found for the existing headache; yet even after that cause has been removed there is a secondary state following this, old chronic state, whether it is dilatation of the blood-vessels, or whether the stretching of the blood-vessels has gone to such an extent that the vital rubber loses its contractibility, it is a matter of experience that the headaches persist, and it takes a long time for them to disappear. Headaches are usually due to a lack of oxidation. This will seem plain when we consider the complex formula of uric acid.

It seems to me that we have to do here with a lack of oxidation. Whether that is a general metabolic disturbance, whether the metabolism is intrinsically disturbed, or whether we have to deal with split products in the one case, or with chemical change due to certain kinds of invasion, toxic or ptomainic or leukemic or otherwise, is a matter beside the question at the present time.

DR. F. SAVARY PEARCE, Philadelphia.—To my mind there is no doubt about heredity being a predisposing cause, and then in addition to that we have the exciting cause, whatever that may be. There are numberless exciting causes for which the broad physician must be on the lookout in order to get the best results. If it is the eye, that should be corrected. The gastro-intestinal tract should receive attention, and every other possible source of irritation should be considered, including the existence of uric acid excretions. In the case mentioned by Dr. Tuckerman, it would be well to have the stools examined, and see whether there is an excess of uric acid or not.

DR. EVANS—The papers on migraine have been extremely interesting, but if they demonstrate one fact it is that the medical profession to-day is in a state of extreme uncertainty as to the causal factors, or at least the most prominent causal factor, in the production of migraine. I do not think that arriving at such a conclusion, even though it should be practically unanimous, should describe the study in a special line. The young, and the older members of the profession, show alike a disposition to find some particular cause along the line of their own special work to explain the production of disease, or to ferret out the real causal factors in the production of certain diseases which afflict the human race. The efforts in this symposium have been along this line.

I am very much interested in the study of epilepsy, and, like migraine, I know very little about the causation; but I am inclined to think that it is a little over-enthusiastic for us to claim that there is such an important relation between migraine and epilepsy. When we take into consideration the fact of the great prevalence of migraine, and how our highly neurotic patients, or patients who are given to various forms of neuropathic manifestations, are likely to have other more serious forms of nervous disease; or, in other words, that since migraine prevails so largely, and there are numerous nervous troubles which are looked on as being developed along with it, we are not justified in saying that we shall have cases of epilepsy coincident with migraine. This is especially true when we consider the large number of cases seen by neurologists in their practice, and then take into consideration the small number of coincident cases.

DR. HENRY T. PATRICK, Chicago.—The statement made by Dr. Fisher, that constant headache is generally due to organic disease of the brain or of its envelope, is true. The only modification I wish to make is this, that there are many patients who come complaining of constant headache which, on careful investigation, is found not to be a constant, agonizing headache at all, but rather the neurasthenic discomfort, which is a rather inaccurate phrase to describe the rather multitudinous collection of symptoms known to neurotics.

I should like to support the assertion of Dr. Walker, that there seems to me some relation between migraine and epilepsy. Whether that be simply a community of cause and a similarity of expression, I think none of us can at this time attempt to define. But when one sees in fifty cases of migraine five cases of alternation, or substitution, or partial alternation, that certainly means something. Take for instance a case like this:

A woman brought a boy with epilepsy. In inquiring into the family history I found that the mother had had typical attacks of epilepsy to the age of 25, as I remember it now. From that time on, without any treatment, the epilepsy spontaneously ceased. From that time on she began to have what she had never had before, repeated typical attacks of migraine. One case is not much; but when you have seen perhaps half a dozen of these it makes one more thoughtful.

In regard to what Dr. Tuckerman said of his father having died at a very advanced age, still having his migrainous attacks, so far as I know I can not claim the credit of having cured a case of migraine. I will take off my hat any time to the man who can cure migraine. I believe that the oculists successfully cure it by the correction of ocular defects. Aside from that, I can not recall at this moment an authenticated case of cure of migraine. Women, of course, very frequently lose their pain at the menopause.

I feel it my duty to caution against taking the statements of Haig's book. I feel it my duty, because I hear them repeated so frequently by persons who have not read his book or have read it carelessly, and have taken his assertions for facts. Dr. Haig is under the same obligation that all of us are to prove his assertions, and I submit that so far he has not done so.

DR. E. D. FISHER, New York City—I simply endeavored to speak of the diagnostic importance of headaches. The weight that I wanted to give to my part of the discussion was the distinction between the so-called continuous or strain headaches, and a paroxysmal headache. There is such a thing as a continuous headache, a constant one, which is present in such cases as I referred to, as Bright's disease or nephritis, and again I wanted to insist on the point of the continuous quality of headache in arterial disease. In all of these continuous headaches, of course, we have exacerbations of pain. We must look to the diseases underlying such conditions whenever we have a continuous headache. There is some fundamental disease, like diabetes, or Bright's, or some growth.

In regard to the relation of epilepsy and migraine, I never could see any distinct connection. The class of patients subject to migraine and those that are subject to epilepsy are absolutely distinct. We are not dealing with the same thing, but the discussion of the point is very valuable.

I wish to emphasize what Dr. Patrick said in regard to Dr. Haig's conclusions. I never have agreed with them.

DR. S. J. WALKER, Chicago—I think it unnecessary to advert again to what I have said in my paper in regard to the relation between epilepsy and migraine. I simply suggested that there might be some such relation, and made no positive statement.

As for the explanation of fever in several of the cases I reported in young people, children react more easily to all sorts of influences, and this would account, in the case which I reported under 5 years, for the temperature. Gowers says that frequently in children migraine is accompanied by fever.

DR. J. A. LICHTY, Clifton Springs, N. Y.—I am very glad Dr. Patrick has made the explanation in regard to continuous headache, for I have had several cases of a similar character.

As to Dr. Haig's book, I can readily indorse all that has been said as to its character. It reads almost like a novel. I studied it carefully before I began my investigation, and the more I studied it the more I found that he did not prove his point.

As to the menopause and migraine, Dr. Haig proves his position against everything by saying that, because during the menstrual period there is an excess of uric acid, hence after the cessation of menstruation the migraine disappears.

In reference to the treatment, Dr. Bridge probably attached more to my treatment than I intended. I simply gave salicylate of soda, because Haig had said it would do such and such things; I had no confidence in it at all. The first case in which I put the patient on the diet of Haig got worse and when I changed the diet, and gave most anything, he improved. In the second case I gave a low diet without reference to uric acid, and also salicylate of soda, and the headache improved and, in fact, disappeared. I do not believe that the salicylate of soda had very much to do with these cases; I think that in nearly every case it was the hygiene and the diet. While I think Dr. Patrick is right in saying that migraine can not be cured, yet in about twenty-five cases which I have watched in the last few years, I have had very satisfactory results by watching the diet and paying attention to hygiene. I had a patient come to me two months ago, who had a severe attack of migraine. I gave her no medicine at all, but I told her to drink lots of water. She was away from her family, who seemed rather irritating to her, and she has not had an attack since.

DR. PHILIP ZENNER, Cincinnati, Ohio—As regards those two

cases which we referred to several times, my only object was to show that one is often mistaken in the supposed cause and manner of treatment of headache, but that the mental element was really the cause in those two cases was shown by their being very susceptible to suggestion. For instance, one of the patients could be relieved of her pain by a drop of sugar water, and so on. All those things indicated the power of suggestion, and it is quite probable that that was also the result of suggestion. My object was to show how one is led astray in a conclusion of that kind.

One word as to the relation of migraine and epilepsy: I suppose there is some relationship between all nervous diseases: I can hardly believe there is a greater relationship between these two. The two are so different; the one is a benign disease, the other is malignant: the one terminates in recovery, it does the patient no harm, it does not interrupt the patient's mental processes; the other, with few exceptions, continues to get worse until the end, and usually, in the great majority of cases, damages the mind. Now that the two might occur together is not surprising, both being such very common ailments, and that with the occurrence of epilepsy migraine should cease is not astonishing, because the occurrence of epilepsy itself has an effect on other disease. It may be that there is in some instances, in rare individuals, a closer relationship. It was said for some time, and possibly is believed yet, that some forms of migraine are directly related to paresis, that they finally terminate in paresis, and that may be true in some instances. It may be that it shows either an existing disease or a tendency in those individuals, and it is just possible that in certain individuals such a relation between epilepsy and migraine occurs. But the more clinical aspects as they appear to us, do not indicate such a relation to my mind.

THE DOUCHE.

ITS RISE AND DECLINE, BUT PRESENT RESTORATION.

BY FRANK A. STAHL, M.D.

INSTRUCTOR IN OBSTETRICS, RUSH MEDICAL COLLEGE,
CHICAGO.

(Concluded from Page 781.)

So far as bacteriologic conclusion may be an index, the following table from Krönig's paper is of interest. Of his 221 cases, 103 were neither examined internally nor douched. Of these he tells us 59 had pathologic secretions, 44 had normal. Now, it would seem that the 59 pathologic-secretion cases would show the greater morbidity; but not so, for of the 59 cases with pathologic secretion, 18 sickened, 30.5 per cent.; and of the 44 cases with normal secretion, 20 sickened, 45.3 per cent. *One can conclude either way.*

There is another point that must be considered. Some maternity gentlemen speak of their cases as if without the douche. Yet every patient, before she goes into labor, is bathed, soaped, and cleansed, in many cases as never before. Have not the genitals partaken in the process? Certainly, for upon the externals special effort is spent; whether or not it is intended, as she breathes in the bath the vagina is flooded; like in the Talmudic dipping, there is an involuntary douching of the vagina. It is not the large quantity of soap or antiseptics that is essential, it is the large amount of water, clean and changeable, running water. The cleansing, stimulating bactericidal action of running water is a fundamental principle in hygiene, seen in all nature.

Though this may be a digression, yet it is opportune. The celebrated Pettenkofer recognized these purifying qualities of running water, and by directing the mountain stream, the Isar, through his system of multiple canals in Munich, he thus successfully overcame the blighting municipal problem that had for many years cost Munich so dearly from the ravages of sicknesses, like the fevers, and for like reasons the financial and social loss of the large English colony, now in Dresden.

In the douche it is the running water that is of superior value; chemical antiseptics play but the minor assisting rôle. Antiseptics can not be used without the

water, they would destroy; but the water alone or with the ancient ash soap will suffice, where chemical antiseptics are not to hand.

As a rule, upon important issues, bacteriologic conclusions based upon bacterial investigation, can as yet show a greater number of errors for therapeusis in oracle than verification. More than once the bacteriologist has startled the clinician with his assertions. The outcome has been that the bacteriologist is gladly heard of in research work, but when he concludes in therapeusis the clinician good-humoredly looks skeptical, but gives him a chance, only too often to be disappointed. In practice and in discussion we have maintained that:

1. The douche is a benefit* and to be recommended, both as a prophylactic and as a preventive measure. It cleans; it stimulates; to the genital economy it is bactericidal, for though it may not destroy, it washes away multitudes of micro-organisms; the patient feels refreshed and strengthened after it; it is a splendid antipyretic.

2. Less injury has been done by the douche than by the non-douche principle. Further, ophthalmia neonatorum is surely discouraged by the douche.

3. Repetition, temperature, force, and quantity of the douche must be regulated by the demands of the problem.

4. Perforating wounds of the cheek and lip, continually bathed in the secretions of the mouth, mammary abscesses, these, like the wounds of labor, will heal and will recover; but neither so pleasantly, so perfectly, so promptly, nor with so little systemic reaction as when the douche is intelligently applied.

5. Its beneficial efficacy in the early labor, the abortion, is a fact. Contrary argument would prove but a boomerang.

6. The dangers of the douche have been exaggerated. The extreme danger of possible air emboli in practice bears the same relation to its reported theoretical possibility as is so correctly suggested in the figure of exaggeration, viz., as the molehill to the mountain.

7. The 1894 departure has not overcome; on the contrary, to-day it but strengthens Ahlfeld's auto-infection.

The above expression of position where thought is divided, and which is but a compilatory effort of previous practice and discussion, taken alone certainly would seem individualistic, carrying with it no greater force than appertains to the individual. But this force, surprisingly added thereto by the authentic reports from the last German Gynecological Congress, held in Berlin, May 24-27, 1899, and from so high an authority of scientific thought, and which but a short time before had doubted and now changed from its 1894

*Though the hygiene of society may vary with field, town, city, density, etc., individual hygiene is usually the same, that is, he who fosters (or otherwise) cleanliness and freedom from infective quality, if this is true of the individual in the field or the city, that individualism is maintained however the environment may change, therefore, I use the douche as follows:

Antepartum.—In the clean cases, as they are already clean, one douche is given as a prophylactic. I have never seen a case where such a douche normally given, induces dryness of the walls. In the unclean cases, or suspicious cases—douche as indicated.

Intrapartum.—Follow indications. In a short and clean labor, usually nature, in a tedious, prolonged labor, where secretion is at first increased by the activities of labor, followed by a hot dry vagina, a douche is cleansing and refreshing; where meconium is in the vagina, or products of maceration; where secretion at first apparently clean, becomes unclean; all unclean or suspicious cases and operative cases—douche as indicated.

Postpartum.—I use the douche twice daily, at 8 A.M. and 8 P.M., as a routine measure for the first three days of the second week. The postpartal douche is best usually either cool or tepid, with about a four-pint volume, always douching the externals first, then introducing the point. Hot water douches in obstetrics, like in gynecology, are to be avoided where possible, because they exhaust. Restriction is indicated by the systemic reaction.

departure, becomes conclusion of considerable weight, and food for more profound consideration than mere desire to controvert.

To avoid extending the limits of this article to too great length, my excerpts of the abstracted Transactions⁵ are short, so as to present each individual's position, and to show the individual and general trend of thought and therapeutics. There were presented two principal themes for discussion on the subject of puerperal fever. The first was by Ahlfeld, the champion of auto-infection; the second by Bumm, a champion of the opposition.

THEMES.

Ahlfeld of Marburg states that the definition of puerperal fever can not yet be established, neither from a bacteriologic nor from a clinical standpoint. Besides the streptococcus, there are other micro-organisms able to induce fatal infections, which clinically are not to be differentiated from streptococcus puerperal fever. Without doubt many streptococci may be found in the uterus without betraying the least evidence of their presence. With free drainage the endometrium can purify itself. The knowledge that besides the etiology of a direct invasion of virus into the tissues, another, a "2 form" of origin of childbed fever exists, the development of a disease process outside of the assistance of doctor and midwife, commences to force for itself more recognition.

He refers to the superiority of warm-water, soap and alcohol hand-disinfection over other methods. With the experienced and conscientious application of that method of hand-disinfection, internal examination is without danger. Forms of puerperal fever occur in cases where no examinations were undertaken. The causing germs were either present in the vagina at the time of labor, or had invaded the vagina; like the gonococci, their virulence may be increased after labor. Finger-coats are nothing for general practice. How the germs of the vagina ascend and under what circumstances they carry out their deleterious effects is to be studied. He states that for the last five years, thanks to the introduction of hot-water-soap-alcohol disinfection, he must consider the fever in the main as a consequence of an ascending of vaginal germs. With the preliminary vaginal douche, pathologic vaginal secretion has no importance. If, further, a series of operative labors determines the fact that thereafter the number of temperature-free puerperae does not materially increase, the thought lies near, that the careful, thorough cleansing of the vagina and frequent repetition of the same is the principal cause of this favorable result.

Bumm of Basel stated that childbed fever is wound fever. It seems of importance to maintain the difference between wound-intoxication and wound-infection. He raises the question as to why the same germs at one time attack the mucous membrane, the next time wander farther, and the third time extend only through the blood. There is as yet no satisfactory knowledge. The severity of the sickness depends especially upon the quality of the infecting agent. The streptococcus which causes fatal sepsis is the same as that one which causes the local endometritis. In comparison we now know that the streptococci of wound infection possess *the faculty of changing their biologic properties and their form of growth*. From a clinical standpoint the type of auto-infection maintained by Ahlfeld is open to

objection. The danger comes from without. If from contact with septic material highly virulent germs cling to the hands, then even the most thorough disinfection is unreliable. In the rubber gloves, therefore, we possess a most valuable addition to our antiseptic instruments. Our antiseptic methods have had no influence in the development of putrid endometritis. The greater probability here is of an external ascending putrefaction; for this speaks the day-to-day increasing germ contents of the lochia during the puerperium, and the often directly observable ascending of the putrefaction. Therefore, douches during parturition will likewise not be of assistance against later putrefaction⁶ because an open wound treatment is not to be avoided.

DISCUSSION.

Döderlein of Tübingen differs from Ahlfeld as to the possibility of disinfecting the hands, especially those of the students. In the lisle operating-gloves, the germs accumulate rapidly. He formerly believed that the germs came from the air, but he feels compelled to rectify this and admit that, in part at least, they come from the fingers. On the virulence of the germs depends the ability of the body to cope with them. Bumm is inclined to the opinion that a part of the infections are due to ascending of germs, supported by the observations of Burckhardt that the germ contents of the uterus increase in the puerperium. Winternitz examined 86 cases, and, in 80 per cent, found the uterus germ-free in late childbed. The healthy uterine cavity must be therefore germ-free. For all that, germ contents indicate no disease.

Bumm of Basel said that it is true that the results of bacteriologic investigators often contradict each other, yet it is to be remembered that these examinations are unusually difficult, and often undertaken by beginners. Concerning the abdominal cavity, Bumm obtains the same results as Döderlein; the longer the operation, the more germs were present everywhere; the air was found germ-free; all pointed toward the fingers. Bumm, even after alcohol and bichlorid treatment, warns against positive hand-disinfection. Personally, he has returned to antiseptics. The oftener during an operation the hands are washed in sublimate, the better. The body can not overcome the introduced germs if they are septic; if the wound conditions are bad; if operative technic be an imperfect one.

Franz of Halle reported results of bacteriologic examinations to determine the cause of slight increase of temperature in the puerperium. The influence of the gonococcus could not be determined, for in no case could the gonococcus be found alone, without the presence of other bacteria. From his examinations he concludes that in many cases the germs alone can not "condition" the fever, that rather the incomplete discharge of the uterine secretions in connection with the germs is the cause of the fever. As to attributing the slight temperature increases to infection during parturition, bacteriologic investigations hardly afford a satisfactory footing for explanation of temperature increases. The explanation becomes easier if one accepts an infection, less during parturition, rather one during the puerperium, therefore a secondary infection of the cavity wound, which the uterus and vagina present in the puerperium.

Fehling of Halle called attention to the little prog-

⁵ In the mammary abscess, during the labor of expelling the pus would the same logic hold true that the douching during its (mammary abscess) parturition would likewise not be of assistance against later putrefaction? Certainly not, if guided by *etiological* facts.

ness that bacteriologic investigation had made in the knowledge of puerperal fever in the past ten years. Of importance in the origin of these slight temperature increases is the clinical examination; this is shown in the 5 to 10 per cent. lower morbidity during the vacation than during the active semester. Examinations with boiled finger-cots during two semesters resulted in a slightly higher morbidity than without the finger-cots. The difference between vacation and semester morbidity, the results of glove examination, suggest that insignificant mechanical conditions in the genital tract must be of importance in the slight temperature increases.

Krönig of Leipsic, like Bumm and Döderlein, finds that alcohol is not a disinfectant; contrary to Bumm, he is of the opinion that the difference between intoxication and infection can not be maintained.

Menge of Leipsic concluded that from the reports of vaginal anaërobe streptococci of obligate nature the justification of douche is not yet to be deduced.

Schauta of Vienna said: "Permit a clinician, after twenty-three years of experience, to mention his conclusions and results. You are acquainted with the poor locality of the Vienna Klinik, its large number of obstetrical cases; because of the large number of clinicians, it necessitates intense utility of the material. If, notwithstanding this, the results can be placed alongside those of the best maternities, it speaks very highly for the antiseptic regulations which are here customary. Out of 20,805 labors, from 1892 to the end of 1898, 1664 febrile (7.9 per cent.); of these 420 were caused by internal disturbances, leaving 1241 puerperal sick (5.9 per cent.). The mortality was 101 (.4 per cent.); of these of non-puerperal causes 47 (.186 per cent.); the remaining 54 (.213 per cent.)." His regulations are disinfection according to Fürbring, debarring students for the whole semester from pursuing anatomical courses; isolation of all suspicious cases; vaginal douches with 1 per cent. lysol solution, the latter, not to remove the vaginal germs⁷, rather to remove the vaginal mucus, replacing this with a layer of disinfecting fluid.

Prochownick of Hamburg stated that the bacteriologic secretion examination *ex utero* is unreliable, of little value for therapeutic, and therefore to be given up in private practice. He mentions his bacteriologic researches with seriously sick puerpera, some of whom died. Among his results he mentions that even in early severe cases, Marmorek's serum proved wholly negative. He likewise recommends digital cureage to remove retention.

Koblank of Berlin held that all authors are a unit that streptococci are found in the vagina of pregnant women. Krönig and Menge believe that these are not the usual fakulative anaërobe, but obligate anaërobe bacteria. It is worth remarking that according to Krönig and Menge, obligate anaërobe streptococci are found in the vagina, as also in the pus of purulent peritonitis.

Hofmeier of Würzburg said that one can not blame the clinicians for regarding bacteriologic results with want of confidence, as they are full of contradictions.

The bacteriologists seem to possess a short memory. Krönig, a short time ago, stated that there existed no germs in the vagina that can induce fever. Now he finds the obligate anaërobe streptococcus, that may become very dangerous. The premises that the vagina is germ-free, is not proven.

Von Rosthorn of Graz, in a case of apparent sepsis, performed vaginal hysterectomy. At the post-mortem it proved a case of typhus abdominalis. The differential diagnosis was difficult; Widal's test is of great importance. The examination at the time showed streptococci in the cervical secretion, so that the diagnosis, puerperal fever, seemed verified. Marmorek's serum always rendered negative results.

Opitz of Berlin believes also that the glove bacteria originate from the skin. Yet it is likely that one can not attribute the temperature increase in singly examined puerpera to skin germs. Even though it is impossible to make the skin bacteriologically germ-free, it is certain that immediately after the alcohol disinfection the skin surface is germ-free, and with simple short touchings, germs from the deeper parts of the skin can not reach the surface. Probably there are concerned germs carried up from the vulva. It would be wrong to give up our present disinfection technic, so long as we have none better.

Krönig of Leipsic certainly believes that germs from the vagina in the puerperium can induce infection and does not believe he has stated the opposite.

Von Franqué of Würzburg believes in the possibility of auto-infection, though, contrary to Ahlfeld, he regards it as occurring relatively seldom. From the standpoint of protecting the parturient from the possibility of harm, douches must be given. Attention is called to coitus shortly before labor; of cases examined by the husband and others. The vaginal douche characterizes itself as a prophylactic measure.

Döderlein of Tübingen thinks the question of judicial (legal) responsibility is certainly very important. In a court case he took the ground that of a personal responsibility on the part of the defendant midwife there could be no question, since we possess no positive disinfecting methods.

Olshausen of Berlin said that clinical experience must be considered. In bacteriology we have experienced too many disappointments. He recommends, therefore, preliminary vaginal disinfection. An auto-infection is to be admitted, though only for few fatal cases.

Bumm, in closing, remarked that the question of hand disinfection is to be decided. To date there is none such. Further, all agree that various forms of streptococci reside in the vagina. Contrary to Hofmeier, Bumm emphasizes the bacteriologic diagnosis. Opposed to Krönig, he maintains a difference between intoxication and infection. The introduction of rubber gloves is not to be insisted upon. Yet they are a valuable acquisition; moreover, they were used by Bischof of Basel twenty-five years ago. Formerly he was an enemy of douches; to-day he acknowledges the more antisepsies the better.

⁷ It is a pleasure to note, that in my "Treatment of Antemature Labor" (American Gyn. and Obs. Journal, May, 1898) there is expressed a similar sentiment: "Irrigate with _____ solution, not especially for its germicidal effect, but for its cleansing, stimulating and alterative qualities." I still prefer a mild—5 to 1 per cent.—carbolic solution, as it is not irritating, not opaque, and is stimulating without the irritation necessary for a like stimulation with lysol; this I attribute to its (Carb.) soapy nature or of a coagulative nature, as do some other antiseptics; this should be avoided, as it hinders external excretion and expression; like the emulsifying overcoating property of creolin, it hinders capillary drainage from the deeper tissues.

DR. NELSON M. BLACK, who has been with the Eighth Army Corps as captain and assistant-surgeon in the Philippines, returned with his regiment, 1st North Dakota Vols., August 1. He is now associated with Dr. H. V. Würdemann, Milwaukee, Wis., with whom he practiced before entering the army.

Therapeutics.

The Use of Iron in Chlorosis.

With reference to the use of iron in the treatment of chlorosis Nothnagel prefers Bland's pills and the tincture of chlorid of iron. It is the opinion of the majority of clinicians, however, that the preparation of iron employed will depend largely on individual conditions.

The following is an outline of treatment strongly advocated by Sir Andrew Clark. With careful attention to the diet and a tepid sponge bath, followed by brisk toweling night and morning, he prescribed the following mixture:

R. Ferri sulphatis.....	gr. xxiv
Magnesi sulphatis.....	3vi
Acidi sulphurici aromati.....	5i
Tinct. zingib.....	5ii
Infusi gentian comp. vel quassie.....	5viii

M. Sig. One-sixth part twice daily, about 11 and 6 o'clock.

Occasionally this acid mixture produces nausea, dries the skin, and is otherwise ill borne. In such cases the following alkaline mixture is employed:

R. Ferri sulphatis.....	gr. xxiv
Sodii bicarb.....	5iii
Sodii sulphatis.....	5vi
Tinct. zingib.....	5ii
Spiritus chloroformi.....	5i
Infusi quassie.....	5viii

M. Sig. One-sixth part twice daily at 11 and 6 o'clock.

The large doses in both of the above prescriptions will hardly be acceptable in this country, but they can be reduced by using less of the infusion, which will but slightly change the therapeutic value of the formulae.

In case neither mixture agrees with the patient, a sulphate of iron pill is given with each meal and a saline aperient on awaking in the morning, while two or three times a week the patient should take a pill of aloes, myrrh and iron.

Quincke, writing in *La Presse Med.*, some time ago, said that in the treatment of this disease with ferruginous remedies, the preparations of iron might be divided into five groups: 1, the ferrocyanides, which have no action; 2, the blood from an organism of the same species, which may be useful during a certain period; 3, hemoglobin in solution, which probably penetrates rapidly into the circulation and is assimilated; 4, the ferruginous salts of vegetable acids, which, at least by subcutaneous injection, are taken up by the circulation and deposited in the liver; 5, insoluble preparations and ferric-oxid salts, which dissolve in the stomach and later form albuminates and absorbable iron. Bland's pills and acid lactate of iron have seemed to be most active in chlorosis. A daily dose of 1 to 1½ grains is sufficient. For hypolemic injection a 5 per cent. solution of ferric citrate may be used, a quantity containing from 1 to 1½ grains being injected daily.

It is our opinion that chlorotic cases could be divided into three classes; those in which iron is absolutely useless; those in which it is fairly valuable, and those in which it is an absolute necessity.

THE INDICATIONS FOR BITTERS.

Nearly all chlorotics are dyspeptic and the mere administration of iron is insufficient. Bitters should be administered before meals; combinations similar to the following are useful:

R. Tinct. gentiane.....	3vi
Tinct. calumbæ.....	5v
Elixir calisayæ. q. s. ad.....	5viii
M. Sig. Dessertspoonful before each meal.	
R. Tinct. gentiane.....	5iiss
Tinct. cardamomi comp.....	5ii
Tinct. nucis vomice.....	5iii
Infusi quassie q. s. ad.....	5viii
M. Sig. Tablespoonful before each meal.	

At the end of the meal or half an hour after it, the patient should take a wineglassful of hydrochloric-acid lemonade—3 or 4 parts to 1000.

INTESTINAL ANTISEPTICS.

P. le Genre advises the administration of intestinal antiseptics in chlorosis accompanied by gastric dilatation. Apropos of this idea may be quoted the interesting results of Townsend, published in the *Boston Med. and Surg. Jour.*, May, 1896: "Summary showing the average gain in hemoglobin per week from the use of various agents: Betanaphthol, 2 grains, three times daily—antiseptics—30 cases, 1.85 per cent.; Bland's iron pills, 5 grains, three times a day, 31 cases, 5.07 per cent.; cathartics alone, 7 cases, lost 1.50 per cent.; twelve cases treated with Bland's pills after a course of betanaphthol showed an average weekly increase of 6.70 per cent.; 19 cases treated with Bland's pills without betanaphthol showed an increase of but 4.50 per cent. Series of 28 cases treated during an average period of 4.3 weeks, with 2 grains of betanaphthol, in tablet form, and 5 grains of Bland's iron pills three times a day. The average gain in hemoglobin per week was 7.9 per cent., the maximum gain being 20 per cent. per week for two weeks in one case, 14 per cent. for three weeks in another, 13 per cent. for four weeks in another, while another patient averaged a gain of 11.4 per cent. per week for five weeks. The average amount of hemoglobin possessed by the patients before beginning the treatment was 48 per cent. After 4.3 weeks of treatment it was 82 per cent. Conclusion: The results of combined treatment are considerably better than those obtained with iron alone, and much better than those obtained with betanaphthol alone."

To Remove Indurated Patches After Eczema and Psoriasis.

When the patches are limited, Uina uses the following formula:

R. Zinc oxid paste.....	
Resorcin, aa.....	5xi
Ichthyl.....	
Vaselin, aa.....	5xx

When the patches are very extensive, a less energetic mixture is applied:

R. Zinc oxid paste.....	5ix
Resorcin.....	
Vaselin, aa.....	5xx

A little of this salve is spread on the patch every morning for one or two days until the epidermis commences to loosen, when it is suspended and the fall of the flap awaited or an anodyne salve applied.—*Semaine Med.*

Pneumonia.

The following discussion of the treatment of this disease is taken from *Progressive Medicine* for March, page 386:

Pilocarpin.—Rosenthal after using pilocarpin in nine cases of pneumonia, comes to the conclusion that the drug is not only of no value, but, further, that it is sometimes actually harmful in its effects. Its use is, therefore, contraindicated.

Diuretics.—Rensner, believing that the critical sweat in pneumonia has a weakening effect on the organism, endeavored to obviate this by giving diuretics at the time of the crisis. He believes that by the use of caffeine with camphor or digitalis he has been able to diminish materially the sweating, the crisis occurring in association with marked diuretics.

Use of Cold.—Mays pleads for the more general use of cold, particularly as local applications, in the treatment of pneumonia. Fussell finds that cold baths give great relief in marked hyperpyrexia. The local application of cold is also of value in relieving pain.

Counter-Irritation.—Stengel, in cases of pneumonia with delayed resolution, advises counter-irritants, active pulmonary exercises, and mentions the fact that there is some evidence to suggest that the production of aseptic abscesses resulting in a leucocytosis may exert a favorable influence on the condition.

Blood Letting.—Maragliano discusses bleeding in pneumonia. Liverato has shown that when there are limited foci of pneumonia, bleeding is followed by a diminution in the oxygen ab-

sorbed, but when the foci are extensive the oxygen absorbed and the arterial tension are considerably increased. Bleeding is particularly indicated in grave toxemia and where there are mechanical disorders of the circulation owing to the consolidation. Toxemia may be combated by digitalis, which antagonizes the bacterial poisons, and with De Renzi's (Pariè's) serum, which neutralizes them; but when the toxemia is marked and these means are not at hand, patients should be bled, and the amount of fluid in the circulation increased by intravenous salt injections. When the circulation is disturbed bleeding is also a good remedy, and one need not be hindered from doing this because the pulse is small and irregular; according to Niemeyer, it is just in these cases that it should be employed. Bleeding, then, is an occasional and not a regular method of treatment. The quantity of blood taken at each bleeding should vary from one-fiftieth to one-tenth of the total amount.

PNEUMONIA IN CHILDREN.

A discussion upon the treatment of pneumonia in children was held before the New York Academy of Medicine, which is reported in full in the *Medical News*, vol. lxxxiii, pp. 641-650. Only a few points can be touched here. Chapin points out the fact that the temperature is not always a true indication of the degree of poisoning in the child. The best means for treating the fever, when treatment is necessary, is by the external application of cold, by ice poultices, or by applying to the chest compresses which have been dipped in water at 75 to 90 degrees. The treatment may be employed until the temperature falls to 102 or 103, and then discontinued until it rises again. He believes that the fear and prostration incident to the giving of cold baths contraindicate them. Holt makes an excellent communication, in which he lays considerable stress upon the necessity of saving the child as far as possible from the worry excited by too much attention. His conclusions are as follows:

1. No depleting measures are ever admissible.
 2. Hygienic treatment, including fresh air, proper feeding, and intelligent care, is of the utmost importance.
 3. No unnecessary medication should be permitted.
 4. Many annoying symptoms may be relieved by local treatment, such as the cough by inhalations, pain by counter-irritation, restlessness by the ice-cap or sponging.
 5. Stimulants should be deferred until demanded by the condition of the pulse.
 6. High temperature is much more safely and effectively controlled by the use of cold than by drugs.
 7. Greater caution is necessary in the use of powerful stimulants than is generally observed.
 8. Rest is quite as important as in other serious diseases.
- Koplik believes that baths may be more frequently used, but advises great care in their administration. Almost all of these observers lay particular stress on the *necessity of good ventilation*, a point which the reviewer would also insist on. The manner in which patients with respiratory affections are still shut in close, ill-ventilated, overheated apartments should be combated by every intelligent physician.

Carr, discussing the treatment of broncho-pneumonia complicating measles, lays stress also on the same fact, advising that the patient be kept in a freely ventilated room, between 65 and 70 degrees. In these cases he advises that the diet should be of about the same quantity as that given to a healthy child; peptonized milk, beef-juce, eggs, custards, jellies, etc., are the best foods. Baths from 85 to 90 degrees are the best antipyretics.

Baruch discusses the methods of giving baths and packs, and lays particular stress on the necessity of employing vigorous friction throughout. Baths are not always necessary—treat the child and not the disease.

Not the Correct Formula.

THE Resinol Chemical Company writes us that the formula purporting to be that of resinol, which we printed in this department August 12, "does not contain one single ingredient that is contained in unguentum resinol" and that "the statements therewith made are absolutely false from start to finish."

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Journal of Experimental Medicine, May-July.

- 1.—The Organism in a Case of Blastomycetic Dermatitis. Ludwig Heiktoen.
- 2.—Case of Hemochromatosis? Relation of Hemochromatosis to Bronzed Diabetes. Eugene L. Opie.
- 3.—Action of Hepatic, Renal and other Cells on Phenol and Indol, under Normal and Pathologic Conditions. C. A. Hertler and A. J. Wakeman.
- 4.—Interpretation of Pulse-Tracings. Arthur R. Cushman.
- 5.—Diplocoecid Form of *Coccus Bacillus*. J. G. Adams, Maude E. Abbott and F. J. Nicholson.
- 6.—Reaction of Dextrose to Production of Toxin in Bouillon Cultures of *Diphtheria Bacillus*. Theobald Smith.
- 7.—Origin of Fat from Protein in the So-called Fatty Metamorphosis of Phosphorus Poisoning. Alonzo Englebert Taylor.
- 8.—Contribution to Knowledge of Pathology of Fragmentation and Segmentation, and Fibrosis of Myocardium. John Bruce MacCallum.
- 9.—Cultures from Blood in Septicæmia, Pneumonia, Meningitis and Chronic Diseases. Franklin Warree White.
- 10.—Case of Suspected Rabies with Isolation of *Bacillus Diphtherie* from the Central Nervous System. George Douglas Head and Louis Blanchard Wilson.

American Journal of Obstetrics, September.

- 11.—Value of Antistreptococcal Serum in Treatment of Puerperal Infection. Report of Committee of the American Gynecological Society.
 - 12.—Treatment of Puerperal Streptococcal Infection by Curettage, the Cul-de-sac Incision, and the Application of Antiseptic Dressings. William R. Pryor.
 - 13.—Antistreptococcal Serum in the Treatment of Puerperal Sepsis. Charles D. Fry.
 - 14.—Use of the Real Catheter in Determining the Seat of Obscure Pain in the Side. Howard A. Kelly.
 - 15.—Diagnosing Curettage. J. Rilus Eastman.
 - 16.—Toxicity of Urine in Pregnancy. Robert W. Stewart.
 - 17.—Vaginal Cystotomy for Cure of Irritable Bladder. R. W. Knox.
 - 18.—Malignant Tumors of Breast. W. P. Carr.
 - 19.—Parotid Gland Therapy in Ovarian Disease. John B. Shober.
 - 20.—Mumps Complicated with Otitis and Nephritis. George N. Acker.
 - 21.—Posterior Rotation of Occiput in Vertex Presentation. Strickler Coles.
 - 22.—Cerebral Complications in Mumps. J. R. Bromwell.
 - 23.—Ovarian Multilocular Cystic Tumor, Existing for Thirty-five Years Without Destroying Life, the Woman Dying from Influenza Bronchitis at the Age of Seventy-four Years. Repeated Tappings. DeForest Willard and S. M. Wilson.
 - 24.—Founding of a Hospital for Consumptives. James Tyson.
 - 25.—Pneumomassage of the External Auditory Canal Compared with Inflation of the Tympanum. Charles H. Burnett.
 - 26.—A Visit to the Loomis Sanitarium for Consumptives. Guy Hinsdale and R. S. Anders.
 - 27.—Case of Obstruction and Perforation of Bowel from a Gall-Stone. C. S. Martin.
 - 28.—Case of Trausposition of Viscera and the Great Vessels, with Pulmonary Stenosis and Perforated Septum Ventrliculorum. J. P. Crozer-Griffith.
 - 29.—LaGrippe. A. F. Van Horn.
 - 30.—An Address Commemorative to the Twenty-fifth Annual Meeting of the American Neurological Association. Wharton Sinkler.
 - 31.—Cancer of the Common Bile-Duct. John H. Musser.
 - 32.—Extensive Defect in the Septum Atriorum Cordis, and Malposition of the Kidneys, without Symptoms or Signs of Heart Disease. Frederick P. Henry.
 - 33.—Medical Treatment of Movable Kidney. Alfred Stengel.
 - 34.—Congenital Dislocation of Knee. James K. Young.
- ### Medical Dial (Minneapolis, Tenn.), September.
- 35.—Value of Leucocyte Count in Appendicitis. Geo. Douglas Head.
 - 36.—Some Abuses in Nasal Surgery. W. S. Latou.
 - 37.—Surgical Tuberculosis. G. G. Eitel.
 - 38.—Supra-renal Extract in Ophthalmic, Aural and Allied Surgery. A. G. Aldrich.
 - 39.—Recurrent Appendicitis with Perforation; Report of a Case; Operation and Recovery. W. Z. Flower.
 - 40.—Do We Need Iodoform? F. A. Dunsmoor.
- ### Journal of Alumni Association of College of Physicians and Surgeons (Baltimore), July.
- 41.—Case of Retrocalceal Bursitis—Albert's Disease. Harvey G. Beck.
 - 42.—Additional Points on Relation of Adenoids to Ear Trouble. Frank Pier Sanger.
 - 43.—Co-Existence of Fibromyoma and Carcinoma of Uterus, with Report of Three Cases. W. Wayne Babcock, Jr.
 - 44.—Concussion and Compression of Spinal Cord. R. Percy Smith.
 - 45.—Treatment of Syphilis. Harvey P. Jack.
- ### North Carolina Medical Journal (Charlotte), September 5.
- 46.—Report of Case of Urethral Calculus, with Amputation of Penis. F. Long.
 - 47.—Report of Case of Prosthetic Ectropion. Robert L. Felts.
 - 48.—Questions and Observations on Pernicious Malaria. E. E. Dickenson.

Archives of Otolaryngology (N. Y.), August.

- 49.—A Modification of Körner's Plastic Operations for Cholesteatoma. F. Siebenmann.
 50.—The Middle Ear Neosartorium. A Contribution to the Embryology of the Middle Ear. L. Aschoff.
 51.—Report of Seventy-Seven Radical Operations. P. Manasse and A. Wintermattel.
 52.—New Symptom of Obstructive Thrombosis of Lateral Sinus. F. Voss.
 53.—Acute Bilateral Brain Abscess after Opening the Mastoid. Recovery. H. Seligmann.
 54.—Additional Cases of Acute Osteomyelitis of the Upper Jaw in Infants. Dr. Ropke.
 55.—Effects of Artillery Practice on the Ears. Richard Möller.
 56.—Complications Following Intraaural Operations. Edmund Wartheim.

Iowa Medical Journal (Des Moines), September.

- 57.—Septic Pneumonia. S. T. Gray.
 58.—History of Boone County Medical Society. A. A. Deering.
 59.—History of Boone County Medical Society. D. S. Fairchild.

Southern California Practitioner (Los Angeles), August.

- 60.—Ectopic Gestation. M. L. Moore.
 61.—Report of Case of Ectopic Pregnancy. E. R. Smith.
 62.—Tubal Pregnancy. Walter Lindley.
 63.—Forcible Straightening of Tubercular Kyphosis. Justin Kay Toles.
 64.—The Century's Progress in Scientific Medicine. William Barber.

Journal of Mississippi State Medical Association (Biloxi), August.

- 65.—Tubercular Laryngitis. Richmond McKinney.
 66.—Some Remarks on Causes of Blindness of Thirty-three Pupils at Mississippi State School for the Blind. W. S. Sims.
 67.—Water Supply in Rural Districts. E. A. Cheek.
 68.—How Do Curative Agents Act? H. A. Minor.
 69.—Examination of Urine for Life Insurance. W. A. Evans.

Women's Medical Journal (Toledo, Ohio), September.

- 70.—Gynecologic Clinic at the Woman's Hospital at Philadelphia. Anna Fullerton.
 71.—Intestinal Obstructions. J. B. Murphy.
 72.—The Art and Teaching of Obstetrics. Eliza H. Root.
 73.—Journal of Medicine and Science (Portland, Me.), September.
 74.—Nasal Catarrh; Its Surgical Treatment. Arthur F. Sumner.
 75.—Extracts from the Ancient History of Medicine. F. J. Robinson.
 76.—Extra-Uterine Pregnancy. W. G. Sawyer.
 77.—Masso-Therapeutics. E. H. Judkins.

Denver Medical Times, September.

- 77.—Toxic Causes of Insanity. Hubert Work.
 78.—Remarks Preliminary to a Discussion on Pneumonia and its Treatment. L. E. Holmes.
 79.—Repeated Intrauterine Pregnancy, with Report of Two Cases. C. K. Fleming.

Atlanta Journal-Record of Medicine, August.

- 80.—The Pathology of Fever. J. Clarence Johnson.
 81.—Something of the Tact and Patience Necessary in the Prognosis and Treatment of Chronic Deafness. Arthur G. Hobbs.
 82.—Report of Two Interesting Cases. Marcus F. Carson.
 83.—Abdomino-Perineal Pæcto-Sigmoidectomy. James N. Ellis.

Medical Bulletin (Philadelphia), September.

- 84.—The Physiological and Medical Treatment of Insomnia. John V. Shoemaker.
 85.—Remarks on a Case of Pulmonary Tuberculosis. George W. Pfromm.
 86.—Masochism, Sadism and Fetichism. Ralph Miner Niles.

Columbus Medical Journal, September 5.

- 87.—Diagnosis and Treatment of Cholelithiasis. W. J. Meaus.
 88.—Causes and Prevention of Infantile Mortality. G. W. Morehouse.

Northwestern Lancet (St. Paul, Minn.), September 1.

- 89.—The Lithemic Habit. Florence Baier.
 90.—Constipation in Infants and Children. Its Cause, Nature and Management. C. G. Slagle.

Relation of Pelvic Disorders to Nervous and Mental Diseases.

- C. Eugene Bines.
 92.—Hygienic Prophylaxis Through Legally Enforced Vaccination Against the Contagion of Smallpox and the Cure of the Climate Changes for Persons Infected with Tubercular Consumption, Through a Gracinated Cottage and Governmental Park System. E. E. Bigelow.

Throat and Nose Disinfection in the Presence of Bacillus Diphtherie.

- J. H. Adair.
 94.—Progress in Medical Diagnosis. H. H. Witherstoe.

Medical Age (Detroit), September 10.

- 95.—Insects as a Means of Spreading Infectious Diseases. A. C. Ellis.
 96.—Epileptic Cerebrospinal Meningitis. Grant G. Speer.

Virginia Medical Semi-Monthly (Richmond), September 8.

- 97.—Traumatic Shock. A Study of its Etiology, Symptomatology, Diagnosis, Prophylaxis, Prognosis, Pathology and Treatment. Liston H. Montgomery.
 98.—Colds. Ephraim Cutter.

Dangers which Lurk in the Schoolroom; How Safeguards may be Easily Provided.

- William B. Meany.
 100.—The Peritoneum and Some of its Morbid Phenomena. W. Lowndes Peple.

Do Patients Recover From General Peritonitis?

- I. S. Stone.
 102.—Use of Tolidio-Blue in External Ocular Inflammations. Clarence A. Veeney.

Case of Brain Abscess With Peculiar Symptoms.

- George K. Sims.
 103.—Pseudo-Catalepsy. Wilbur M. Phelps.

Case of Tubal Abortion.

- J. Wesley Kovce.

Sanitarian (Brooklyn), August.

- 106.—Sanitation in Prisons. W. H. Blake.
 Pacific Medical Journal (San Francisco), August.
 107.—Emergency Surgery. N. Seun.
 108.—Opening of the New Military Hospital at the Presidio, July 9, 1899. W. F. Southard.
 109.—Notes and Observations on Syphilis and Gonorrhoea in their Relation to Marriage. M. Krotoszyner.
 110.—Illustrative Cases of Conservative Operations on the Uterus and Appendages. J. Coplin Stinson.

St. Louis Courier of Medicine, July.

- 111.—Traumatic Shock. Nichols Seun.
 112.—The Differential Diagnosis of Hysteria and Neurasthenia, and their Treatment. Ludwig Bremer.
 113.—History of Opo- or Organic Therapy. Roswell Park.
 114.—Pointers on the Leather Split-Brace. A. J. Steele.

Medical News (N. Y.), September 23.

- 115.—The Bacillus Icteroideus: A Reply to Dr. Sauerelli. F. G. Novy.
 116.—"Inoculation Through the Digestive Tract: A Contribution to the Yellow-Fever Discussion. Felix Vitale.
 117.—Some Surgical Aspects of Syphilis. Frank Hartley.
 118.—Bottini's Operation and other Treatment of the Enlarged Prostate. Robert Newnam.

New York Medical Journal, September 23.

- 119.—Fracture of the Lower End of the Radius. Carl Beck.
 120.—Physiologic Action and Therapeutics of Guaiamar, a Derivative of Guaiacol. George F. Butler.
 121.—Compulsory Reporting of Tuberculosis. S. A. Knopf.
 122.—Exhibition of Case of Stammering, with Demonstration of Methods Employed in Treatment. G. Hudson Maknoe.
 123.—Early Recognition of Kidney Disease, Especially in its Reference to Life Insurance. T. H. Rockwell.
 124.—Foreign Bodies Lodged within the Eyeball. Edward Jackson.
 125.—Pistol-shot Wound of the Abdomen Perforating the Stomach. Recovery. J. N. Le Conte.

Philadelphia Medical Journal, September 23.

- 126.—Tuberculous Peritonitis; Gastrostomy; Acute Appendicitis. Frederick S. Dennis.
 127.—Relation of Headache to Affections of the Eye. S. D. Risley.
 128.—Primary Carcinoma of the Ovary and Sigmoid Flexure. Philip Daggett Bourland.
 129.—X-Ray Examinations of the Chest as Illustrated by Two Cases of Pneumothorax and Two of Pneuothorax. Francis H. Williams.
 130.—Intussusception. J. C. Munro.
 131.—Case of Typhoid Fever with Ulceration of Esophagus, and Complicated with Croupous Pneumonia. David Rissman.

Medical Record (N. Y.), September 23.

- 132.—Legal vs. Scientific Test of Insanity in Criminal Cases. Carlos F. MacDonald.
 133.—Present Status of Appendicitis; with Report of Forty-five Cases. Frank LeMoyné Hupp.
 134.—On Prevention of Tuberculosis. Carl Strueh.
 135.—Removal of Exostosis of the External Auditory Canal by a Hook. Geo. B. McAlliff.
 136.—Nephrorrhaphy and Stripping of the Appendix through a Lumbar Incision with Right Floating Kidney and Painful Appendix. J. Coplin Stinson.
 137.—An Improvised Vaccin Expeller. Arthur Irving Boyer.
 138.—A Typical Case of Vaccinia. W. E. Fowler.
 139.—A Pipe-Stem in Utero. William J. Greenalle.

Boston Medical and Surgical Journal, September 21.

- 140.—Correction in Lateral Curvature. E. H. Bradford and E. G. Brackett.
 141.—The Struggle against Tuberculosis. Edward O. Otis.
 142.—Strabismus in Intestinal Catarrh. G. H. C. Meier.
 143.—Syphilis and Parasymphilic Affections: Two Cases. E. W. Taylor.

Cincinnati Lancet-Clinic, September 23.

- 144.—Mental Element in the Treatment of Headache. Philip Zenger.
 145.—Toxicity of Urine in Pregnancy. Robert W. Stewart.

Maryland Medical Journal (Baltimore), September 23.

- 146.—Importance of a Diagnosis of Uterine Cancer in Early Stages. Thomas A. Ashby.
 147.—How do Faddists and Physicians Cure Diseases? A. D. McConachie.
 148.—Medical and Surgical Treatment. Walter B. Platt.

Medical Review (St. Louis), September 23.

- 149.—Demolition in Medical Practice. James G. Kiernan.
 150.—Strangulated Hernia, Complicated with Retained Testicle and Intra-Abdominal Hydrocele of the Cord. Julius Kohl.
 151.—Case of Gunshot Wound of Abdomen followed by Operation and Recovery. Jacob Frank.

AMERICAN.

1. Blastomycetic Dermatitis.—Holtken's paper describes the results of the histologic and biologic examination of a case of this affection, seen with Professors Hyde and Bevan, in the Presbyterian Hospital, Chicago.

2. Hemochromatosis.—Opie reports a case which he considers as representing an intermediate state between the hemochromatosis of von Recklinghausen and the bronzed diabetes of Hanot and other French authors. The clinical history is brief. The patient had symptoms indicating typhoid, with deep pigmentation of the skin, no jaundice, no sugar in the urine. Death occurred from gradually increasing weakness. Typhoid

bacilli were present. The post-mortem and pathologic findings are reported in full detail and the condition discussed at length. His conclusions are: 1. There exists a distinct morbid entity, hemochromatosis, characterized by the wide-spread deposition of an iron-containing pigment in certain cells, and an associated formation of iron-free pigments in a variety of localities in which pigment is found in moderate amount under physiologic conditions. 2. With the pigment accumulated there is degeneration and death of the containing cells, and consequent interstitial inflammation, notably of the liver and pancreas, which become the seat of inflammatory changes accompanied by hypertrophy of the organ. 3. When chronic interstitial pancreatitis has reached a certain grade of intensity, diabetes ensues and is the terminal event in the disease.

3. **Action of Body Cells on Phenol and Indol.**—The object of Herter and Wakeman's paper is to report experimental observations of the action of various animal cells toward these substances, made with a special view to studying the natural defense of the organism against chemical agents. The experiments were made in two ways: by direct contact of the prepared cells with this substance, and by making intravenous injections of their solution. In the contact method the mixture, after a certain period, was subjected to distillation and the distillate tested for indol and phenol. In twenty-seven observations by this method, the activity of the liver was found to be greater in reacting on phenol than any other organ treated. Next to this came the kidneys. There was less uniformity in this respect as regards indol, but the same general results were obtained. By the infusion method the liver and kidney cells were also more active than other body cells. The authors venture the opinion that the capacity of the cells to act on phenol is only one expression of a function that can be exerted on numerous allied aromatic substances, and possibly on some non-aromatic substances. In order to test the activity of these organs under pathologic conditions, tests were made on rabbits poisoned by various substances, alcohol, ricin, ammonium chromate, staphylococic infection, morphin, etc. The differences were not marked under these conditions, and some of these agents appeared to have no effect whatever on the power of the cells to convert phenol.

5. **Diploccoid Form of Colon Bacillus.**—The author concludes, from observations on rabbits: 1. That the colon bacillus injected into the circulation is rapidly taken up by both the liver and kidney. 2. That within fifteen minutes after inoculation some bacilli are already ingested by the endothelial cells of the liver, this process of ingestion continuing until some of the cells are full of bacilli. 3. That in this process of ingestion the bacilli are broken up into shorter lengths, and that these short stumpy bacillary forms may already, within the endothelial cells, present themselves as two deeply-staining dots, and may thus resemble diplococci. 4. That already in two hours the modified bacilli may be discharged outwardly from the endothelial cells, and be taken up by the underlying liver cells. 5. The exact stages of this discharge we have been unable to follow. In the liver cells the modified bacilli are to be recognized as small diplococci of a size varying from that equal to the diplococci seen in the endothelial cells, down to points of extreme tenuity; evidently these forms are undergoing destruction. In the first place, they lose their power of staining; in the second, if the destruction is not too rapid, they assume a brownish tinge. The causation of this brownish tinge we have not yet determined, but it is to be made out in the unstained sections, and our studies on the human liver indicate to us that not a little of the fine pigmentation common in liver cells is brought about by the existence in these cells of these minute elements of material destruction. During this process of destruction the modified bacilli lie in digestive vacuoles, and the frequent appearance of the halo around these forms is in great part due to the existence of the vacuole. We have occasionally been able to make out what appear to be these vacuoles in the liver cells, without the evidence of the contained microbe, and having apparently been digested. We have also seen the same appearance in peritoneal leucocytes nine hours after intraperitoneal inoculation with modified colon bacilli. 6. In the kidney the same process is at work—we have recognized the diploccoid form within the cells at the expiration of two hours after inoculation, and have also seen the vacuoles within the

cells and convoluted tubules, and have there occasionally met with the two dots just visible as final indications of the process of digestion of the bacillus.

6. **Dextrose and Diphtheria Toxin Production.**—The inhibitory action of muscle sugar in the production of diphtheria toxin, noted by Spronek and von Eurenhoff, started investigation on this point by Park and Williams, Cobbett, Blumenthal, and others. Smith here reports investigations by new methods with which he finds a contrary condition of things from that reported by many of these authors. The methods can not well be abstracted here, but the conclusions are as follows: 1. Dextrose is not in itself injurious, but rather favorable to toxin production. When added in quantities not exceeding 0.2 per cent., to peptone bouillon, freed from fermentable acid-producing substances—muscle sugar—it leads to a maximum accumulation of toxin by utilizing the available peptone to the best advantage. 2. The different courses taken by cultures of diphtheria bacilli in ordinary unfermented peptone bouillon containing muscle sugar, and in peptone bouillon made from fermented infusion to which 0.1 to 0.2 per cent. dextrose has been added, are manifested by an increased production of toxin in the latter as well as by a rapid return from an acid to an alkaline reaction. In the former an acid reaction may prevail even under most favorable conditions. 3. These differences may be explained either by assuming that the acid products of the muscle sugar are different from those of dextrose and non-utilizable, or else that the bouillon contains certain other unknown inhibitory substances removed during fermentation. The use of synthesized media, and an analysis of the acid products in fermented bouillon plus dextrose, and in unfermented bouillon, would aid in explaining the differences. 4. Among the accessory conditions which favor the toxin production in unfermented bouillon as pointed out by Park and Williams, are increased quantities of peptone, well-developed surface growth of the diphtheria bacilli, and a low initial acid reaction—phenolphthalein. In fermented bouillon these accessory conditions are also favoring, though of less importance.

9. **Blood Cultures in Septicæmia, Etc.**—The conclusions derived from examination of ninety-two cases of sepsis, pneumococic pneumonia, cerebrospinal meningitis, and various severe chronic and fatal cases, together with a study of the literature, have led White to the following conclusions: 1. Blood for bacteriologic examination during life should be taken directly from the veins and in considerable quantity. 2. Resorption of toxins is the most important feature in cases of sepsis; pyogenic bacteria invade the general circulation in a rather small proportion even of severe cases, and, as a rule, late in the course of the disease. 3. A general infection of the pneumococcus can be occasionally demonstrated in the late stages of acute lobar pneumonia. 4. The value of blood cultures as a means of diagnosis in obscure cases of sepsis is limited by the fact that invasion of the blood by the specific organism can not be demonstrated during life in the majority of cases. Positive cultures are very valuable; negative cultures do not exclude local septic infections. 5. The detection of specific bacteria in the blood of cases of sepsis and of pneumonia gives a very unfavorable prognosis in most cases. 6. General terminal infections with pyogenic cocci occasionally occur as an immediate cause of death in chronic disease. Local infectious processes play this part more frequently. 7. As far as our experiments have shown, invasion of the blood by bacteria during the death agony, with subsequent distribution of the germs to the organs by the circulation, is a rather uncommon occurrence. 8. Owing to the relative infrequency of agonal invasion, we believe that in the majority of cases where the autopsy is performed promptly after death, the bacteria which are found in the organs succeeded in reaching these organs previously to the death agony, and are associated with the course of disease. 9. The presence of bacteria in the organs of the late autopsies is due in many cases to post-mortem extension from one organ to another, and in some to the post-mortem growth of small numbers of germs which were distributed to the organs by means of the circulation.

11, 12 and 13.—**Antistreptococic Serum in Puerperal Infection.**—The report of the committee of the American Gynecological Society, consisting of Drs. J. Whitridge Williams, Pryor, Fry, and Reynolds, sums up the results of their study and observations as follows: 1. A study of the literature

shows that 352 cases of puerperal infection have been treated, with a mortality of 29.74 per cent.; where streptococci were positively demonstrated, the mortality was 33 per cent. 2. Marmorek's claim, that his anti-streptococcal serum will cure streptococcal puerperal infection, does not appear to be substantiated by the results thus far reported. 3. Experimental work has cast grave doubts on the efficiency of antistreptococcal serum in clinical work, by showing that a serum which is obtained from a given streptococcus may protect an animal against that organism, but may be absolutely inefficient against another streptococcus, and that the number of serums which may be prepared is limited only by the number of varieties of streptococci which may exist. 4. Thus far the only definite result of Marmorek's work is the development of a method by which we can increase the virulence of certain streptococci to an almost inconceivable extent, so that one hundred billionths of a cubic centimeter of a culture will kill a rabbit. 5. Personal experience has shown that the mortality of streptococcal endometritis, if not interfered with, is something less than 5 per cent., and that such cases tend to recover if Nature's work is not undone by too energetic local treatment. 6. The committee unhesitatingly condemns curettage and total hysterectomy in streptococcal infection after full-term delivery, and attributes a large part of the excessive mortality in the literature to the former operation. 7. In puerperal infections a portion of the uterine lochia should be removed by Doderlein's tube, for bacteriologic examination, and an intrauterine douche of four or five liters of sterile salt solution given just afterward. If the infection be due to streptococci, the uterus should not be again touched, but the patient should be given very large doses of strychnia and alcohol if necessary. If the infection be due to other organisms, repeated douchings and even curettage may be advisable. 8. If the infection extends toward the peritoneal cavity, and in gravely septicemic cases, Pryor's method of isolating the uterus by packing the pelvis with iodoform gauze may be of service. 9. The experience of one of the members of the committee with antistreptococcal serum has shown that it has no deleterious effect on the patient, and, therefore, may be tried if desired. But nothing in the clinical or experimental literature or in the members' experience was found to indicate that its employment will materially improve the general results in the treatment of streptococcal puerperal infection.

The supplementary reports of the treatment of puerperal streptococcal infection by curettage, the cul-de-sac incision and the application of antiseptic dressings by Dr. Pryor show that all cocci are destroyed by this method and that the colon bacillus remains present. Dr. Fry adds a supplementary report of 8 cases of infection all treated by serum, in which 3 died and 5 recovered. In one of the fatal cases the injection was followed by apparent improvement, in another the treatment was begun only eighteen hours before death. In the other case the patient died from exhaustion, in spite of the treatment. Dr. Fry insists on the importance of preventing introduction of infection post-partum, and he holds that curetting is contraindicated in pure streptococcal infection.

16.—See title 145, p. 855.

17. **Vaginal Cystostomy.**—Knox reports two cases of irritable bladder, rebellious to treatment, in which operation by opening through the vagina between the cervix and mouth of the urethra was resorted to. In both cases great relief attended the operation, and subsequent closure of the fistula presented no difficulty. He thinks the more frequent adoption of this method would result in the cure of many thus far incurable cases.

19. **Parotid Gland Therapy in Ovarian Disease.**—Shober briefly reports nine cases of ovarian pain treated with parotid gland extract, with complete success. The cases are those usually spoken of as ovarian congestion and chronic oöphoritis unattended with excessive pelvic disease and without much exudate.

33. **Medical Treatment of Movable Kidney.**—The treatment of movable kidney, Stengel says, must be directed solely to its restoration to its normal position. It may be permanent if we can restore normal conditions, or it may be temporary. There are two plans, therefore, of medical treatment, the first intended to supply the perirenal fat which has become deficient, and the second to support the kidney by a proper abdominal

bandage and pad. The first of these is not applicable in cases where the loss of adipose tissue has played no considerable part in the production of the disease, but where this has been the case there is a distinct possibility of improvement or recovery. He cites one case in which this method of treatment was most satisfactory, though a relapse took place three years later, on account of loss of flesh from overwork and worry, and surgery was called in to rectify the condition. The use of an artificial support for the kidneys is necessary where other methods will not effect a cure. Sometimes a combination of both methods will secure temporary relief. While many authors are inclined to condemn the abdominal belt and pad in these cases, Stengel is convinced that if properly made they may be effective. A pad to be effective should be so shaped and applied as to make pressure upward, backward and toward the right, so as to push the kidney toward its normal position. It has had various pads made and applied and has had striking results in four cases, two of which are here reported. This paper was presented to the Section on Practice of Medicine at the recent meeting of the Association.

35. **Leucocyte Count in Appendicitis.**—Head calls attention to the value of the leucocyte count as an aid to diagnosis in appendicitis, as a means of determining the character of the inflammation, whether catarrhal or suppurative, and as a help in following the course of the disorder and determining whether or not it is extending or receding. Leucocyte count is almost diagnostic between appendicitis and typhoid, almost without exception showing increase in the former. The same is true to a great extent as regards the diagnosis of gall-stones and intestinal obstruction. Other conditions in which it has diagnostic value are stercoreal colitis and floating kidney, in each of which conditions the leucocytosis is a marked distinction. As regards the character of the inflammation, it is useful between suppurative and catarrhal cases. Cases of appendicitis with a white count over 14,000 are suppurative. This is of value in about 86 per cent. of all cases. The leucocyte count may, he shows by a table, be very high and yet the patient recover without operation. The whole blood count is also of great value in interpreting the course of the inflammation, an increase of the white globules indicating an advancing process, and a decrease the reverse. This is true when the counts can be made regularly from the beginning of the trouble. There is a small percentage of cases, suppurative or necrotic, in which the white count is low, and these may be misleading. He sums up by saying that the count may be of value: 1, where doubt existed as to the diagnosis between appendicitis and diseases which simulate its symptoms, but cause no leucocytosis; 2, where the diagnostician was uncertain whether pus was present, in or about the appendix; 3, where the clinical symptoms mystified the clinician and gave him no clue as to the course the inflammation was pursuing.

37. **Surgical Tuberculosis.**—Aside from general remarks on the subject, the most important point in Eitel's article is the importance of complete operations when dealing with surgical tuberculosis. Incomplete operations often aggravate the disease.

43. **Fibromyoma and Carcinoma.**—Remarking that the old notions of the malignant degeneration of myomata have been discarded and of late given place to a tendency to consider them as entirely distinct and independent of malignant growths, and that the co-existence of both forms in the same organ has a certain clinical interest, Babcock reports three cases in which both were found. After discussing the condition and the opinions in regard to it, as given by different authors, he concludes: 1. The frequency of association of fibromyoma with adenocarcinoma of the corpus uteri is greater than would be *a priori* expected, and relatively much greater than with the more common epithelioma of the cervix. 2. A coincidence of the two growths is favored by their individual proneness to affect the nulliparous; but the frequency of the association seems greater than is thus explained, or than is explained by the frequency of fibromyomas in all uteri after middle life. 3. The endometrial hyperplasia and the congestive and irritative influences produced by fibromyomas would seem to favor the development of the malignant tumor. 4. Further investigation is desirable before the old theory that fibroids predispose to cancers in the uterus is considered as disproved. 5. The occasional serious errors of diagnosis from this association render the routine

examination of the endometrium desirable in elderly women with fibroids, and imperative when there is excessive or odorous discharge, or abundance of scrapings.

48. **Pernicious Malaria.**—After noticing the symptoms of hemorrhagic malaria, or yellow disease, Dickinson asks how we will prevent its occurrence and spread. He notes that the negroes have been as a rule free, and suggests that their serum may possibly be of value. In treating the disease the chief importance is to avoid those remedies that are sure to kill. These are morphin, atropin, heroic purging and heroic emochizing. A gentle sarsaparilla is efficient and demanded, but too much only exhausts the already depressed vitality. He asks what are the conditions that must be relieved, and says that after arranging to get 15 grs. of quinin hydrochlorate every twelve hours into the circulation, two important conditions must be met, and these successfully combated and the patient tidled over twenty-four hours—then one may feel comfortable. These two conditions are nausea and anæmia. The former may almost always be relieved by avoiding morphin and giving 20 to 30 grs. of lithium bromid every two or three hours. These are all that is necessary for the restlessness. The circulation might be renewed by transfusion, but he has never done it. He has instead used large subcutaneous injection of normal salt solution, and large saline injections per rectum. Give no remedy for hæmaturia. If the kidneys act well, Nature is relieving herself of the decomposed blood. If fever is high, the skin hot and dry, or the liver at fault, he gives 2 grs. each of caffein citrate and acetanilid, and 4 grs. each of sodium salicylate and ammonium bromid, all in one powder or capsule, every two or three hours, with good effect. His mortality under this treatment was 33 1/3 per cent.

50. **Embryology of Middle Ear.**—It has long been known that the middle ear in children frequently contains fluid of a suppurative character, and the question whether this is due to suppurative inflammation has not yet been fully settled. It is discussed here at length, by Aschoff, who answers the question as to whether it is due to a bacterial process in the negative, supporting himself by the bacteriologic investigations of Gradenigo and Penzo. There is therefore no otitis media neonatorum. The older statements as to the intrauterine inflammatory diseases of the middle ear with functional paralysis and drum perforation no longer hold. It is found, however, that particles of the amnion and meconium reach the middle ear during intrauterine life, through intrauterine respiratory movements. It is this contamination, whether it occurs early or late, that produces the collection of leucocytes in the cavity tympani.

55. **Effects of Artillery Practice on the Ear.**—The effects on the ears of artillery firing is commonly known, and is here investigated by Müller of Berlin. He examined 51 men, mostly private soldiers, but some officers, both before and after firing. The results showed that violent detonations of heavy artillery did greater harm to ears with retracted membranes and middle ear catarrh than to healthy ones. Permanent injury to ears that are not exactly normal is more likely to occur as the result of prolonged exposure to detonations of heavy artillery.

56. **Complications Following Intra-nasal Operations.**—Wertheim, after noticing the natural protective arrangement of the nose, shows that different morbid processes may develop when this is defective, such as fibrinous rhinitis from the specific infection of Löffler's bacillus, and pseudo membranes from pyogenic germs. He illustrates the predisposing effect of such acute inflammatory processes in the nose at the time of operation, by a case in which there was high fever, and general prostration occurred after cauterizing for nose-bleed, and he states that local therapeutic measures, especially nasal plugging, may increase the disposition to infection. The galvanocautery is more liable to be followed by complications than are operations with the knife. He reports two cases of pulmonary and kidney infarction following operation for polyp. The use of peroxid of hydrogen entails the danger of gas embolism by the entrance of gas bubbles into the open blood-spaces. The general result of his observations is the absolute necessity of asepsis in nasal operations. Antiseptic operations are useless, as the microbes can not be reached. The chief care should be not to transfer the infective agents from without, since the microbes existing in the nose remain harmless under normal

conditions. Cauterization of the middle turbinals should be avoided on account of endocranial complications that have been observed to follow. Plugging should be done with antiseptic gauze, sterilized by steam, which should not be left in place over twenty-four hours. In all cases the direct treatment of the bleeding spot should be attempted, though plugging can not be spared during the first hours. After the cessation of the hemorrhage the parts should be covered by anti-septic iodol or iodoform or indifferent sterilizable—dermatol powders.

57. **Septic Pneumonia.**—Gray remarks that the literature of septic pneumonia is scant, and after noticing what he has found in this line, he reports an epidemic of a malignant type near Albia, Iowa. In these cases the possibility of direct contagion could not be excluded.

72.—This paper appeared in the *JOURNAL* of August 26.

77.—See abstract in *JOURNAL*, August 19, p. 482.

79.—*Ibid.*, August 12, p. 414.

84.—*Ibid.*, July 8, p. 101.

87. **Cholelithiasis.**—Means reports ten cases of gall-stones, and analyzes them and their symptoms. The conclusions at which he arrives are as follow: 1. There are no pathognomonic symptoms of the existence of gall-stones in the early stages of the disease. 2. While the symptoms of gall-stones are obscure in the early stages, those of disease of the gall-bladder and ducts are sufficiently pronounced to make a diagnosis of the latter with much certainty. 3. A patient complaining of recurrent stomach cramps, slight jaundice, tenderness of the liver, and digestive disturbances, should receive treatment for biliary trouble, and if the conditions do not improve, should have an exploratory operation. 4. A patient suffering from recurrent attacks of colic in the region of the stomach, followed by jaundice, rigors, fever, digestive disturbances, and light colored stools, is probably suffering from gall-stones and should be treated by an operation. 5. Early operations in cholelithiasis will reduce the mortality of the disease as certainly as early operations do in appendicitis. 6. A large percentage of patients suffering from gall-stones will not receive any benefit from medicinal treatment, therefore surgical interference is the rational method of treatment. 7. Cholecystostomy, where there are no complications, is a comparatively easy and safe operation. 8. Cholecystostomy should be completed in one operation, and the gall-bladder attached to the peritoneum and aponeurosis and drained. 9. Cholecholeostomy is a difficult and dangerous operation, and therefore should not be attempted by any one who is not experienced in abdominal surgery.

89. **The Lithemic Habit.**—Isaier's paper treats of the lithemic condition and its management, holding the uric acid theory in full. She believes that in treating the disease we must secure a restricted diet, not too generous in the nitrogenous element, or in sugar and starchy substances that impede proteid metabolism. There must be exercise, either active or passive, varied and increasing. There must be free use of water, both internally and externally. Electricity, of one form or another, is a valuable adjunct. Among medicines, such may be sparingly used as temporarily meet urgent symptoms. Sodium phosphate is the best to stimulate the liver and act as a laxative. Reliance for permanent relief must be placed on the lithia salts, bitartrate of lithium being one to be preferred.

91. **Pelvic Disorders and Nervous Diseases.**—According to Riggs, the neurologist and gynecologist have been approaching each other in their opinions in regard to the relation of pelvic and nervous or mental disorders, within the last few years. He holds that all sources of irritation, pelvic or otherwise, should be done away with in treating nervous and mental conditions, though it is his belief that no operative procedure can directly relieve the abnormal irritability of the nerve-cell, or the accompanying lack of inhibition. The benefit to be derived will be in the generally improved condition of the patient, not in any specific local action. As regards the suggestive action of operative procedures on the hysteric or the insane, he says that it is a two-edged sword, especially in hysteric cases. He gives the opinions of a number of authorities, alienists and others, advocating conservatism as regards active gynecologic work among the insane, and he states that the general results of such work are likely to be disappointing as regards the direct mental results, though valuable in building up the general

death. This, he thinks, will be found to be more and more accepted view among candid physicians.

93. **Throat and Nose Disinfection in Diphtheria.**—From study of cases, Adair concludes that while the diphtheria bacillus is undoubtedly present with other germs in every case of diphtheria, its mere presence is no guide as to the virulence or otherwise. This bacillus, or one morphologically identical with it, is present in nearly one-third of all children, and is found about as frequently in those who have never had diphtheria as in those who have had acute attacks, but is in the one or liable to be variant in type. It is found more frequently in the nose than in the throat, and is not dependent on abnormal conditions. The theory that the apparent non-virulence in these cases is due to toxin absorption and the consequent immunity is plausible but not proved. Efforts to permanently dislodge the bacillus from the tissues of the throat and nose, with our present means and knowledge, unavailing. These conclusions were obtained in part by bacteriologic findings in the laboratory of the State Board of Health of Minnesota.

96. **Cerebrospinal Meningitis.**—Speer reports an epidemic of tetanus occurring during the winter of 1898-99, at Manistee, Mich., giving full notes of two cases. As regards the treatment, he lays down four principal heads: relief of pain; cleansing out and keeping clean the alimentary tract; drawing the blood away from the nerve-centers, especially at the base of the brain and medulla; and causing the absorption of the inflammatory products as soon as they are found to be producing pressure on the nerve-centers. When a case is first seen, morphia is generally required. It should be given in quantities sufficient to make the patient comfortable. It can not, however, be continued as long as required in these cases, and he prescribes a mixture of chloral hydrate and potassium bromid, 2 drams of each with a grain each of cannabis indica and nuxvomycin in a one-ounce mixture. He gives 5 to 10 drops to a child 2½ years old, repeating every ten minutes until the full effect is secured, to be resumed again when restlessness appears. In one of his cases, a powerful adult, 30 drops of this mixture was given every half hour for three days, with good effect. To cleanse out the bowels, calomel is preferable, given in small doses frequently repeated. To draw away the blood from the nerve-centers he uses hot packs or hot poultices along the spinal column, replaced later by mustard plasters applied not only to the back but to the back of the thighs, calves, soles of the feet, removing before the danger of blistering. He has used ice to the head and has kept it on. When symptoms of pressure occur the iodids are indicated, a saturated solution of the potassium salt, which he has found well tolerated by a child. For fever he has given aconite in small doses frequently repeated or alternated with belladonna. Other aspects of the disease are treated symptomatically. He has found giving fruit to these patients in certain stages harmless and beneficial. The results of his treatment have been good, in six cases only one death, and similar success has attended other physicians in his epidemic.

97. **Traumatic Shock.**—Montgomery's paper is one presented in the Section of Surgery and Anatomy, at the recent meeting of the ASSOCIATION. He believes that the etiology depends on the amount of constitutional disturbance that has been produced by the "solution of continuity," or, as he says: "In a restricted sense, therefore, shock is the inhibitive action of the nervous system accompanied with paralysis of a more or less general character, of the reflexes, in which the circulatory *vis a tergo* force becomes seriously involved so as to preclude or temporarily suspend or prevent the supply of the vascular system from being properly or equally distributed throughout the tissues of the body, and that which tends to operate to check the functions of organic activity is necessarily followed by a degenerative tendency leading toward serious results." He also considers the symptoms, diagnosis, prophylaxis and management, and goes at length into the treatment.

101. **General Peritonitis.**—The argument of Stone's paper is that complete peritonitis involving the whole peritoneum is not relievable or curable. Cases like the one which he reports are apparently generalized and yet recover, but he does not believe the entire peritoneum was affected.

115. **Bacillus Icteroides.**—NAY'S paper is a reply to that of Dr. Sanarelli, which appeared in the *News* of August 12.

(See *JOURNAL*, August 19, p. 474; also September 16, p. 723, p. 725.)

116. **Yellow Fever and the Digestive Tract.**—This paper is a translation of one by Vitale, who was a student with Professor Sanarelli at the time the latter was carrying on his investigations concerning the bacillus ictericoides. Vitale discusses the question of the difficulty in inoculation through the digestive tract, and of the value of experimental results thus obtained. Concerning the microbes, which, either because of their immediate pathologic effects or their quality of resisting the action of the gastric juice, are able to gain a foothold in the gastro-intestinal tract, he points out that the cholera vibrio is able to traverse the acid stomach and preserve its vitality in the intestine for a longer or shorter period without producing cholera. The rabbit is the animal most susceptible to the bacillus ictericoides, succumbing to the minutest intravenous injections of a culture of the bacillus within forty-eight hours, and to a subcutaneous injection in four to five days. He has, however, in a number of instances fed large quantities of warm cultures to rabbits without their even becoming sick. He considers that the conclusion of Drs. Reed and Carroll, that the bacillus ictericoides is a variety of the hog cholera bacillus, is hardly established.

117. **Surgical Aspects of Syphilis.**—Hartley limits his remarks to a discussion of the manifestations of syphilis occurring in the muscles, sheaths and tendons, bursa, bones, joints, lymphatic glands and rectum. He says that the tongue is a favorite seat for the granuloma of syphilis. Lesions involving muscles generally occur in the late variety, and either as a circumscribed mass or as a diffuse connective tissue induration, with or without disseminated gummatous cocci. He also points out that syphiloma in the muscles has great surgical interest on account of the size it may attain, thus leading to a mistaken diagnosis of tumor. He presents two cases and considers differential diagnosis between syphilis, tuberculosis and actinomycosis. The paper will be concluded in a future issue.

118. **Treatment of Enlarged Prostate.**—Newman says that the treatment of prostatitis should first be directed toward allaying pain and irritation, before radical measures for cure can be commenced. He considers irrigation with hot water very important. He also employs anodyne suppositories, and local galvanization when the painful irritation has subsided, the galvanic current being from 3 to 5 milliamperes. Hypertrophy of the prostate differs from prostatitis in being a disease of advanced age and not painful. He describes the Bottini operation for this condition, but objects to it for the following reasons: 1. The instrument is clumsy, unhandy and heavy. 2. The platinum burner is so thick that it gets hot too slowly, and when hot loses its shape by bending, so that sometimes it will not move back into its beak. 3. The very large storage battery is too heavy for transportation and a smaller one does not generate enough heat. 4. The instrument is shaped like Heurleloup's lithotrite, the end having only a short condyle. Such an instrument is exceedingly difficult to introduce, and, in many cases of hypertrophy nonintroducible, the mechanical obstruction leaving no space for its passage. The intention is to push the instrument into the bladder over and beyond the enlargement of the prostate, then to reverse it so that the beak is turned downward. The galvanocautery knife is hidden inside the beak and moves outward when the dial is turned on the handle, as the battery heats it, thereby making a central cut in the obstructing prostate. 5. The result of this operation is very uncertain. 6. The patient has to remain in bed for weeks, and from some reports made by Bottini himself it has been shown that voluntary micturition occurred only after twenty-four days. 7. The operation is not free from danger. He has, therefore, constructed his own galvanocautery sound, which "is catheter-shaped, of smooth, polished metal with a short curve at one end. At this end is a fenestrum in which is placed the platinum wire, the burner to be heated. A serpentine form is best for this wire. Each end is firmly attached to one of the two copper rods inside the tube and represents respectively the positive and negative pole. The other end of the instrument is straight and forms the handle, in which extend the copper rods, each of which is fastened to one of the pins or heat conductors. These two pins are connected with electric cords by binding screws. The

other ends of the two electric cords are fastened respectively to the positive and negative pole of the battery. The current-breaker is movable, and when set straight and present, firmly down on the screw, electricity is evolved and the burner instantaneously heated. The improvements consist in: 1, the handle being in one light, convenient piece; 2, having the current-breaker under the immediate control of the index finger; 3, having the fenestrum filled up, by which means the instrument is more thoroughly insulated and less liable to become heated; 4, having the tube filled up, thus preventing it from getting wet or blocked with debris. A storage battery is used to heat the wire.

119. Fracture of Lower End of Radius.—This article is continued from the *Journal* of September 9. Beck says that the first requirement, accurate reduction, may be carried out with little difficulty by moderate extension, the flexed hand being grasped as in a firm hand-shaking, with downward pressure by the surgeon's thumb, while counterextension is used on the forearm, which is flexed rectangularly. If this procedure should fail, anesthesia must be employed. Fracture of the lower end of the radius combined with fracture or fissure of the lower end of the ulna is frequent, but in case of fissure of the ulna no displacement is present, the symptoms being the same as for complete fracture. The symptoms of lateral displacement are well pronounced in complete fracture of the ulna, which is a rarer accident, but this combination is the main cause of impairment of supination and pronation. The treatment is practically the same as that of complete fracture with lateral displacement, lateral pressure, by attaching an adhesive-plaster pad over the ulnar fragment after reduction, being well kept up. In case of displacement, a plaster-of-Paris dressing is preferable for the first ten days. Fracture of the lower end of the radius, combined with fracture of the styloid process of the ulna represented 42 per cent. of all the author's cases of fracture of the lower end of the radius. In this variety the radio-ulnar joint is always more or less involved. He here considers it advisable to apply a plaster-of-Paris dressing while traction is used, the hand being firmly grasped by an assistant and held in slight ulnar flexion. Since the discovery of the X-rays, he says there are no more fractures the presence of which can not be established beyond doubt, and he thinks the danger of using them is much less than the danger of not using them, and he now declines to treat any fracture until he has first been given the privilege of taking a skiagram thereof.

120. Guaiamar.—This preparation is a glycerol ether of guaiacol, a definite chemical prepared by the reaction taking place between pure guaiacol and anhydrous glycerin. It is a dry, white, crystalline powder, melting at 75 C., soluble in alcohol, chloroform, ether, glycerin and in 20 parts of water. It is neutral, non-hygroscopic, possesses a bitter, aromatic taste, is compatible and may be advantageously administered with quinin, cod-liver oil, malt, hypophosphites and pepsin. While it has antiseptic properties, its chief value lies in the liberation of nascent guaiacol, partly in the stomach but chiefly in the intestinal canal. During the past year Butler has employed this preparation in twenty cases of typhoid fever, exclusive of any other remedy, except the cold bath, each case running an unusually mild course. He is satisfied that those to whom guaiamar was given did not have so high a temperature and the general symptoms were less severe than in the other cases where no therapeutic measure was resorted to except the cold bath. He reports three cases in detail.

124.—See abstract in *JOURNAL*, July 29, p. 280.

127.—See abstract in *JOURNAL*, September 23, p. 757.

128. Carcinoma of Ovary and Sigmoid Flexure.—First noticing the communication of Warthin in the *JOURNAL*, May 26, Bourland reports a case in which death occurred from cancer of the sigmoid flexure six months after the removal of two large multilocular ovarian cysts. This caused a reexamination of the tumors, which had been preserved, and it was found that they also presented evidence of malignancy. The character of the two growths, however, was so different that Bourland concludes that no direct relation existed between them. He considers the tumors, therefore, as primary coincident carcinomata. He also remarks on the case as being another example of the development of malignant growths from adenoma.

129. X-Rays in Chest Disorders.—Williams reports an

illustration of pneumohydrothorax and two of hydrothorax, as shown by the X-ray. The figures are very striking as evidence of the value of these methods in diagnosis.

130.—See abstract in *JOURNAL*, September 23, p. 790.

131.—*Ibid*, March 26, p. 664.

132.—See *JOURNAL*, September 23, p. 784.

133. Appendicitis.—Hupp's paper gives the responses to a series of questions sent to various surgeons, in regard to the necessity of operation in appendicitis, its signs and causes, and the proportion of cases recovering without surgery. The majority of these answers, which are from such surgeons as Scam, McBurney, Morris, Hunter McGuire and others, agree pretty closely in the main, with only slight differences in regard to the necessity of operation and the symptoms of fulminating appendicitis. In only one answer is operation advised when diagnosis is certain in all cases of primary attacks. Forty-five cases are reported in brief, and the author expresses the opinion that balancing the lives that will be saved, and the suffering obviated on one side, and on the other the risk of modern surgical operations, the answer can be but one way, in regard to the propriety of operation in such cases. He concludes his paper with letters from medical directors of various insurance companies, giving the latest facts as to the attitude of these organizations to persons who have had appendicitis.

134. Prevention of Tuberculosis.—The article by Struch is a plea for conservative views in regard to tuberculosis, and the necessity of building up the system as a defense.

140. Lateral Curvature of the Spine.—The conditions of lateral curvature are stated by Bradford and Brackett as follows: 1. Faulty attitudes with absolute flexibility of the spine, and without structural changes of ligaments, cartilage or bone. 2. A curved position of the spine with flexibility, except to a limited degree in certain portions where the normal flexibility is checked by slight structural alterations of muscles, ligaments, or cartilage. 3. Curves with limited flexibility of the spine, and with structural changes of the ligaments and cartilages. 4. Stiffness of the spine, the curve being fixed by structural changes in the ligaments, cartilages and bone. The treatment of the first and second of these classes would necessarily be largely gymnastic, in the second supplemented by measures to increase the flexibility of the spine. In the third class, where firm structural changes exist, mechanical measures will be required and the difficulties have been such as to seriously tax the surgeon. The authors think, however, that in young children there is hope for relief with proper applications which should be fixed so as to apply, exert and maintain pressure as long as necessary. Their paper is illustrated by figures of cases and appliances which they have used. Three cases are reported.

141. Tuberculosis.—Otis maintains that with proper measures it is probable that tuberculosis can be largely eradicated, and quotes the history of leprosy in Europe as a corresponding illustration. He makes a plea for sanatoria for isolation and treatment, and outlines a plan for the management of the condition and prevention of tuberculosis in a city like Boston.

142. Astringents in Intestinal Catarrh.—Noticing the changes in practice as regards the treatment of diarrhea within the last twenty years, and the modern dependence on antiseptics in these disorders, Meier maintains that there is still a use for intestinal astringents in the treatment of these cases.

144.—See abstract in *JOURNAL*, August 26, p. 127, p. 537.

145. Urine in Pregnancy.—Stewart reviews the work of investigators on this subject. See title 16, p. 822.

146. Uterine Cancer.—The importance of early diagnosis of uterine cancer is insisted on by Ashby, who points out that its origin is often insidious, and that it may reach an advanced stage before alarming symptoms appear. The early symptoms simulate simple functional disturbances of the menstruation, but hemorrhage during or subsequent to the climacteric should always be promptly investigated, and all forms of uterine disease not responding to judicious local treatment should arouse suspicion and lead to a microscopic examination. Lesions about the cervix should be corrected, or at least examined at short intervals. When in doubt as to the cause of uterine disease, investigate for cancer.

147. Faddism.—McConaenie notices the medical superstitions of the day, and points out the methods of cure of disease

and its limitations. He believes that we should teach the public these facts and in this way correct the growing tendency to superstition and fads.

148. **Medical and Surgical Treatment.**—Platt notices the lack of details as to treatment in modern medical works, and deprecates the fact.

149. **Demonology in Medical Practice.**—Kiernan notices some modern medical superstitions, including "Christian Science," Dowicism, etc., and attributes them to the influence of commercial conditions, raising individuals of a low grade of culture to comparative affluence. Thus these superstitions ostensibly appear in the higher ranks of society.

FOREIGN.

British Medical Journal, September 2 and 9.

Bacillus Diphtheriae in Milk. J. W. H. EYRE.—The author reports on examination of the milk in an epidemic of diphtheria which occurred among the inmates of a large school, receiving its milk-supply from one source. He gives the details of his experiments, the results, staining reaction, and culture character of the germs found, and shows that the typical appearance of the diphtheria bacillus was clearly recognized.

Early Decay of Teeth in Britain. JAMES CANTLIE.—This author calls attention to a condition of things which we had not supposed was so prevalent in Great Britain as in this country, but it appears that the children's teeth in Her Majesty's dominion are suffering more at the present time than was formerly the case. He believes that the cause is to be found in deficient and artificial feeding in infants. This causes abnormal development of the jaws, which is the source of nasal abnormalities, and the arched jaw, which is coming to be so common, is produced within the first twelve months of infant life by abnormal feeding. The early decay of the teeth is one of the symptoms of want of care of the infant. He calls for a commission of the British Medical Association to investigate the subject, and to ask for the co-operation of the Americans, and probably also the Germans, French and Italians in this matter.

Frequency of Sick Room Infection in Typhoid Fever. HERBERT BECK.—The observations and deductions of this paper are derived from 206 cases of typhoid fever observed by the author during the 6½ years ending September, 1898. He investigated all the probable cases of typhoid among these patients and tabulates them. He finds that 12.5 per cent. of the cases investigated were certainly due to sick-room infection. Other cases were probably due to this, but he prefers to exclude them from his percentage as not being absolutely proved. His conclusions are that sick-room infection is more common than is ordinarily supposed, and that its dangers do not receive the attention they deserve. It is much more common in the small crowded houses of the poor than in the large dwellings of the well-to-do.

Prolonged Standing and Women's Diseases. STUART NAIRNE.—The author has here prepared tables showing the effects of prolonged standing in the production of gynecologic disorders, and concludes that 7 per cent. of unmarried shop girls only come for medical attendance, but 40 per cent. of married women who have been shop girls come under medical attention at a very early period in married life, namely, mostly under 30 years of age. Out of the 7 per cent. of single women, 3 per cent. come with diseases special to women, and out of the 40 per cent. of married 21 per cent. with the same class of disease, so that we have a clear 30 per cent. who are or have been shop girls, suffering from these special diseases. "Why should there be," he says, "comparatively such a small percentage of single girls in actual employment under treatment, and such a large percentage of married women? This looks very extraordinary at first sight, and seems to somewhat minimize the importance of the position I have maintained. A moment's consideration will, however, put this right. The girls in work are, as a rule, kept busy from morn till night: they are young and have not yet exhausted their energies; they have little time to rest and no time to complain. Parents and masters are alike frequently unobservant of the early symptoms of exhaustion and overwork. The girls themselves are anxious to work: they like to be considered strong, the world is before them, and much brighter if they look or pretend to be

healthy. They are much more likely to form a suitable 'match' if they are strong, and therefore they go on, and only the 3 per cent. come for advice and assistance who can go on no longer. Now, with regard to the 40 per cent., the alarmingly large proportion of 27 who suffer from special uterine and ovarian disease shows emphatically that it is no chance illness, but that it must be a regular and frequent consequence of some condition of their daily work. One of the conditions, and I have no hesitation in saying it, one of the most potent, is the long period of standing and hanging about on their feet."

Psilosis or Sprue; Its Relations to Other Forms of Tropical Diarrhea and Its Treatment. GEORGE THIN, EDWARD HENDERSON, JAMES WATSON, W. J. BUCHANAN and others.—Thin takes up the subject of psilosis or sprue, which includes, according to his view, a considerable range of tropical diarrheas. Following, Henderson takes up the classification of cases, pathology and treatment, and Watson reports a case and considers the treatment. Buchanan's views are as follows: 1. Primary or protopathic sprue is common among natives of India. 2. Secondary sprue following on a, dysentery; b, acute enterocolitis or enteritis, is common. 3. Incomplete or arrested sprue is probably very common. 4. The condition known as "famine diarrhæa" is essentially the same in its symptoms and ultimate results as sprue. 5. In many cases of chronic relapsing dysentery, a condition strongly resembling fully-developed psilosis is met with, and characteristic frothy pultaceous diarrhæa alternates with the dysentery. In the discussion following, Dr. Manson said that this condition is not to be regarded as one disease, but as a variety of diseases with a series of common symptoms. There was no exclusive treatment, and there would not be until its etiology was known. The general principles, however, were the same for all types, that is, physiologic rest, rest in bed, warmth and simple diet. Dr. Sambon does not agree with Dr. Thin in recognizing two separate varieties. He thinks much importance should be given to its geographic distribution, which separates it from dysentery and hill diarrhæa.

Insects, Arachnids, and Myriapods and the Propagation of Infective Diseases of Man and Animals. GEORGE H. F. NUTTALL.—The part played by insects in the dissemination of disease is summarized by Nuttall, who classifies them in two groups, the passive and active. Among the diseases passively carried by insects, we have anthrax, plague, typhoid fever, cholera, yaws, etc. In most of these cases flies have been the transporters, but ants and other insects may have their share. The active transmission of disease through the agency of insects that may act as intermediary hosts and convey the disorder by being passively eaten, or actively by their bites, are numerous, and he gives quite an extensive table of these forms. The animals that may act as definite hosts of the parasite include many of our domestic animals as well as the household pests, rats, mice, beetles, bugs, etc., and the intermediate hosts are equally numerous.

Hemoglobinuric Fever and Paludism. W. H. STALKART.—After reviewing the nature, distribution, symptoms and etiology of blackwater fever, the author says: As far as our knowledge at present goes, it would seem that: 1. Blackwater fever is only found associated with malaria. The circumstances under which it occurs, or which appear to be propagating factors, would indicate this. 2. Blackwater fever is not simply malaria, but a distinct disease, possibly malarial in nature, due probably to an organism having a specific action, or one of peculiar intensity, in giving rise to great blood destruction. 3. Quinin is not the cause of true blackwater fever, although in certain cases it may aggravate it. 4. Quinin has been distinctly beneficial in this malady; to what extent is uncertain, but with mixed malarial infection, or in warding off subsequent malaria, it should be given a foremost place. Few, indeed, would care to omit it from their medicinal equipment. In the main these conclusions were supported by those who took part in the discussion.

Thermic Fever (So Called Siriasis), With Special Reference to Its Alleged Microbic Causation. KENNETH MACLEOD, C. M. GILES, L. W. SAMBON, PATRICK MANSON and others.—In opening the discussion on thermic fever, Macleod questioned the parasitic action of microbes in this condition as had been suggested by Sambon. He criticizes his argument and

maintains it as reasonable that fatigue of the heat-regulating nerve-centers, as well as to the heat-dispersing agency, is an essential, or the essential, factor in the production of thermic fever. Sambon in reply repeated his argument, referring to the micro-organism of Cagical and Lapierre, though he has not been able himself to confirm it. He alludes to the geographic distribution of sunstroke, claiming that in some of the hottest parts of the world it does not occur, and holds that the theory attributing the disease to heat alone is purely hypothetical, and does not agree with post-mortem findings. The only theory that fully covers the natural history of siriasis is the parasitic. He quotes Van Gieson, that there is no other interpretation open, as to the significance of the acute parenchymatous degeneration of the ganglion cells of the nerve-centers, than the action of a toxic substance in these cells. Manson supports Sambon, while Wood, Watson and others take the opposite view.

Lancet, September 9.

Reerudescence of Plague in the East, and Its Relations to Europe. W. J. SIMPSON.—The author, after reviewing the history of European invasions of the plague, considers the present one rather a pandemic than an epidemic and possessing what other plague epidemics for the last 200 years have lacked, the quality of diffusiveness, which defies the precautions hitherto used against its progress. The present commercial conditions are favorable to its diffusion, but fortunately we are better prepared with preventives, especially the Haflkine serum.

Mediterranean or Malta Fever, with Special Reference to the Specific Agglutinating Substances Which Make Their Appearance in the Blood in the Course of That Disease. C. BIET and G. LAMB.—This paper is rather an extensive one. The authors describe the biologic character of the micrococci, the effect of specific serum on it, and the appearance, etiology and significance of the agglutinating substances in the blood as an aid to prognosis. They hold that an abundance of agglutinins seems to be a favorable indication, while their decrease justifies caution in prognosis. They also quote, as giving the same findings and results, the memoir of Courmont of Lyons.

Medical Press and Circular (London), September 6.

Albuminuric Retinitis. SAMUEL WEST.—West brings this communication to a conclusion by summing up the facts which he thinks justify the drawing of a sharp distinction between the two forms of albuminuric retinitis, the degenerative and the exudative. He says they stand in strong contrast with each other in the following respects: 1. Of the forms of disease with which they are usually associated; the degenerative with granular kidney, the exudative especially with parenchymatous nephritis. 2. Of their nature and cause; the exudative being inflammatory and probably toxic in origin, the degenerative consequent on vascular changes and more or less mechanical in origin. 3. Of sight; for the exudative, even in extreme forms, may recover, with little or no defect of sight, but with the degenerative, if there is any impairment of sight, it is usually progressive. 4. Of diagnostic value; the exudative being an interesting by-phenomenon of chronic parenchymatous nephritis, an affection the existence of which is obvious enough, while in granular kidney the degenerative often makes the diagnosis certain in cases which have been hitherto obscure. 5. Of risk of life; for while in both cases it indicates a grave form of renal disease which may of itself prove fatal, in granular kidney it indicates in addition all those dangers to which arterial disease exposes the patient. He thinks, therefore, that the distinction is not only justified by the facts, but explains many of the apparent contradictions which are made by different authors.

Alcoholism in Its Relation to Heredity. GEO. ARCHBALL REID.—The author reiterates here his well-known views as to the racial immunity produced by alcohol. He claims that races and nations crave for alcohol in inverse proportion to their past familiarity, and that the plan of abolishing drink will destroy the immunity and in time produce aggravation of intemperance and its effects.

Practitioner (London) September.

On Achondroplasia. WILLIAM TURNER.—Achondroplasia is the name here given to a condition having some of the pe-

culiarities both of fetal rickets and of cretinism. The title, however, is criticised, as it gives the idea of there being no growths of cartilage cells, while the reverse is the case, but it is not in such a direction as to increase the length of the bones. The essential change, according to those who have studied this condition, Shattock, Barlow, Ziegler and Kaufman, is located at the line of ossifying cartilage where the epiphysis joins the diaphysis. Here the cells are altered in size, shape and arrangement, becoming larger and more spherical, while the columnar arrangement is deficient or altogether lacking. There is, therefore, no attempt at the formation of primary bone areole, and consequently no increase in the length of the diaphysis. With this there is a fibrous ingrowth of the periosteum between the epiphyseal cartilage and the adjacent diaphysis, completely preventing the possibility of the cartilage cells developing into bone areole, and there is sometimes non-union of the diaphysis and epiphysis during life. Together with these changes there is a premature synostosis of the basi-occipital and basi-sphenoid, so that the growth of the base of the skull ceases and the depressed condition of the bridge of the nose, always present at birth, persists. The bones of the calvarium are not impeded in their growth, and the skull is comparatively larger than usual. With these changes there is also thickening of the long bones, and sometimes beading of the ribs. The pelvis is always deformed and small, and there invariably is lordosis. The cause of this change in the cartilage cells is absolutely unknown, and no real cause can be given for the disease. The paper is well illustrated with pictures of the patient described and skiagraphs of the deformity of the bones.

Occurrence of Rheumatic Fever Without Arthritis. C. O. HAWTHORN.—The question as to whether the rheumatic poison may produce pyrexia without the arthritic symptoms is here discussed, and the author reports a case which he considers illustrative. The diagnosis was not at all clear during the febrile state, but later, when the temperature was sub-normal, arthritic symptoms appeared. He quotes various authorities who support the view that rheumatism may occur without arthritic disturbances.

Australasian Medical Gazette (Sydney, N. S. W.), July 20.

The Epidemics of 1898. WALTER SPENCER.—The author reports his experience with two epidemics of measles and rubella, 231 cases of the former and 147 of the latter. Of his measles cases, 28 were adults, and 7 of these claimed to have had it before. In 29 instances, second attacks were claimed in children, and 13 of these he had attended at their first, in 1893. He has no notes of second attacks of rubella. From his limited experience, he would say: that the signs and symptoms ascribed to measles and rubella are common to both; that any of them may be absent or modified, and that in measles they are more prolonged and of more severity; that measles or rubella may be expected to confer immunity against itself, but does not invariably do so; that second attacks of measles in children are milder than the first; that Duke's law is consequently not absolute, being subject to limitations which are as yet imperfectly understood. Influenza has been endemic, and for seven years he has seen it every week. For diagnosis he has been led to place most reliance in the sign of Faisan, a sort of opaline film on the tongue, which can not be removed, though sometimes obscured by fur. A puzzling complication of the ordinary variety is the onset of hepatic congestion and severe gastro-enteritis twenty-four hours after apparent convalescence. He found his grippé not only predisposing to other diseases, but also to it self, and his patients suffer from severe successive attacks rapidly following each other.

Observations on Ether Anesthesia Preceded by Administration of Morphia and Atropin Hypodermically. W. C. McCLELLAND and L. H. L. HARRIS.—The experience of these authors, with the administration of morphin and atropin hypodermically, before ether anesthesia, in 100 cases taken as they came, rejecting only those that proved to have albuminuria, lead them to the following conclusions: 1. The patient's nervous system is quieted, being rendered more susceptible to the influence of ether. 2. The patient becomes anesthetized in a very short time, on an average in less than four minutes; only a small quantity of ether is required to produce and to maintain the anesthesia. 3. Salivation is the

exception and practically never occurs. 4. The patient breathes tranquilly and regularly. 5. The atropin exerts its action on the heart as a stimulant, and thus the patient is less liable to shock following the operation. 6. Should the patient inadvertently come out during the operation, or just before its termination, there is no straining or tendency to vomit. 7. The patient generally emerges from the anesthesia in a gradual and tranquil manner, and seldom complains of pain, sleeping quietly for several hours. 8. The tendency to nausea and vomiting after the operation is greatly diminished, and when present is very slight and does not cause much distress. 9. No deleterious after-effects appear to follow this method.

Intercolonial Medical Journal, Australasia (Melbourne), July 20.

Management of Injuries to Lower Epiphysis of Humerus. R. HAMILTON RUSSELL.—The principal features of Russell's article are his condemnation of the angular splint, which he considers a clumsy, uncomfortable and stupid appliance. His method to treat injuries of the lower humeral epiphysis is that of the late Mr. Szme of Edinburgh. The fragments are brought into good position, by gentle traction of the forearm, held at a right angle, with counter-pressure of the flexor surface of the humerus. A pad of lint is applied to the front of the humerus, and another small pad over the olecranon. A strip of strapping to keep the pads in position, and a figure-of-eight bandage over all completes the retentive apparatus. It is essential that the arm be retained altogether underneath the clothing. No splint is required. He claims that this arrangement, if applied with moderate dexterity, meets all the requirements. After four weeks the arm is released and gently put into the sleeves, and passive motion, which is another measure he strongly condemns, is never employed. The cases to which he refers appear to be mostly in children.

Journal de Medicine et de Chirurgie (Paris), txx, 15.

Syphilis Contracted After Sixty. LEBARD.—Untreated syphilis contracted after 60 years of age is almost always fatal. Thirteen observations, reported by Lebard, indicated that the incubation is longer, cicatrization extremely tardy, adenopathy very voluminous and diffuse, and extragenital chancre unusually frequent. Emaciation, asthenia and anorexia appear with the secondary period, with frequent nervous and psychic disturbances, iritis and cutaneous manifestations. The tertiary period follows closely, and gummata are not infrequently observed during the first year. Treatment should be exceptionally prompt and effective, sparing the stomach. Lebard endorses Gancher's subcutaneous injections of bichlorate of mercury, 1 to 2 eg. a day, potassium iodid given early and careful local treatment.

Presse Medicale (Paris), August 30 and September 6.

Tabetic Laryngeal Paroxysmal Attacks. TOUCHE.—Forty patients with tabes were examined in reference to the frequency of laryngeal attacks and their relation to visceral attacks or crises, as the French call them. It was found that more than one-fourth were affected with them. The intensity was variable, ranging from fatal suffocation in one to a few pertussis-like coughs. An isolated laryngeal crisis was rare. It was usually associated with a gastric, very rarely with an isolated diarrhetic, crisis; usually with a gastric crisis associated with a rectal and diarrhetic one.

Social Danger of Syphilis. FOUENIER.—In this address, presented to the International Prophylactic Conference at Brussels, Fournier paints the picture of the damage inflicted on individuals, families, children, children yet to be born and children's children, in the blackest colors and asserts the unquestionable right of society to protect itself against this scourge, to protect the innocent and those who do not care for protection, but who must be protected because of the contagion from them of others who do not expose themselves. "It is the right of society, it is the duty of society."

Social Danger of Gonorrhoea. NEISSER.—This address, similar to the above, urges the necessity of educating the public to the dangers and significance of venereal affections. "If physicians and the public only utilized what science has established in regard to them, individual protection would be more effective than all legal and administrative measures in preventing their propagation."

Progres Medicale (Paris), September 2.

Typhoid Fever at the Bicetre Hospital. BOURNEVILLE.—An epidemic of twenty-one cases, occurring among the idiot children at Bicetre, was noticeable on account of the mortality—six deaths—and the peculiar state of excitement which marked the disease instead of the usual stupor; the idiots seemed to acquire increased mental powers; also the predominance of pulmonary symptoms masking the gastrointestinal, and the difficulty of diagnosis where the first symptom to call attention was the lack of appetite, no details being obtainable from the subjects. Another feature of the epidemic was that seven patients were epileptics, and all seizures were suspended during the disease. This inhibiting effect has persisted since recovery, only one or two attacks having been noticed since in all.

Revue de Gynecologie (Paris), August.

Solid Tumors of the Ovary. L. DARTIGUES.—Among the general conclusions of this comparative study of these neoplasms, from the literature, classified as fibroma, sarcoma and their mixed forms, and cancer or "massive and medullary epithelioma" we note that the malignancy increases with the frequency and also with the age of the subject. Hereditary neoplastic antecedents seem to be rare; when encountered, there was no similitude between the nature and site. Bilaterality increases with the malignancy; fibroma is usually unilateral, while cancer is almost invariably bilateral. A knobby appearance usually coincides with malignancy, also a deep red or violet color. The hematic color of the ascitic fluid is another characteristic of malignancy. Fibroma is of a solid consistency; sarcoma more resistant. Cancer is hard, almost woody, although friable. The variety of tissues constituting the ovary explains the variety of neoplasms which develop from it, and the transformation of one kind into another. Generalization is rarer and less rapid with sarcoma, and does not follow the lymphatic route, like cancer, but occurs at a distance and more scattered. The grafts of cancerous tissue observed in wounds of laparotomies for extirpation of cancer plead for its inoculability, and impose extreme caution on the surgeon not to allow any of the cancerous matter to come in contact with any cut or denuded surface.

Mechanical Seismotherapy in Gynecology. F. JAYLE.—This new term is derived from the Greek word for earthquake, meaning to express treatment by rapid regular vibrations imparted to a part of or the whole body—an improved kind of massage, simpler and less fatiguing, and free from the disadvantages of manual massage of the vagina. Except in cases of tumors or suppurations of the uterus or adnexa, it will be found an excellent palliative treatment, reducing congestion and intestinal atony, favoring the circulation in the intestines and favorably affecting the local and general nervous system. Thirty-six observations and the small electric apparatus are described in detail.

Abdominal Migrations of Abscesses of the Liver. J. FONTAN.—An abscess on the point of migrating into the abdomen usually forms an arching protuberance along the lower margin of the liver, elongating down into the abdomen, while perihaptic friction has disappeared; edema of the wall extends over the abdomen; pus obtained by puncture is white or grayish instead of chocolate. As a general rule the incision must hug the lower limit of the thorax, corresponding to the normal position of the liver, as after operation it usually recedes to its normal position, and it is very important to maintain the parallelism between the wound and the organ, to promote drainage, etc. The migrating pus shows a tendency to follow the anterior abdominal wall, and in one autopsy the hepato-peritoneal abscess extended across the abdomen to the crural ring, like a vase, broad top and bottom, entirely in front of the intestines. If diagnosed in time, intervention would have been easy and effective. Another case had pain at the umbilicus; palpation of right side of the abdomen extremely painful but no marked "doughiness," bilious vomiting, slight fever, and a history of sudden pain two months before in the right iliac fossa. During tropical dysentery, two years before, there was pain in the liver, but hepatitis was not suspected. Appendicitis was diagnosed. The operation showed the peritoneal cavity, especially in the small pelvis, full of yellow pus which had emigrated along the colon from a focus in the in-

ferior aspect of the liver. When the abscess opens into the intestine the liver does not evacuate all its contents and still requires an operation, even if the intestine has healed over at the point of juxtaposition when the liver has retracted. In most cases the contents of the intestine back up into the liver and produce severe infection. In one of his observations he found both liver and intestine gangrened, requiring marsupialization, and an abscess in the hypocondrium. The recovery demonstrates that these cases can be successfully operated on even in *catenae*. Migration into the stomach is so grave that the mere menace of it requires operation, as when an abscess of the liver presses on the stomach and causes vomiting.

Value of Electro-Hemostasis. C. JACOBS.—This communication describes the use and results of Skene's electric forceps, —described in the *JOURNAL*, xxxii, March 4, 1899, p. 490—and "numerous tests which have brilliantly confirmed all and more than the American surgeon claims for this new method of hemostasis."

Centralblatt f. Chirurgie (Leipzig), September 2.

Improved Technic for Ensuring Good Weight-Bearing Stumps After Amputation of the Leg. A. BIER.—It is generally conceded that Bier's method—retaining a living bone flap for the base of the stump—insures the best stumps, but the double amputation required has deterred many surgeons from adopting it, although time and experience have confirmed its great value. He now describes a modification which obviates the necessity of the two amputations, the cutting of the bone flap and the amputation being all performed with one sweep of the saw. The cutaneous incision is the same as described in his original communication, in No. 31, 1897, starting very high on one side and brought down very low on the other, the flap thus formed turned up on the leg like a high collar on a woman's jacket. The bone flap is then cut out, using a strong, slightly modified Hehrlich bow saw, the span very wide and high, the blade not wider than 3 mm. from the tip of the teeth to the back, and inserted in the bow almost at a right angle to its plane. In making the first transverse incision—the depth corresponding to the desired thickness of the bone flap, and the distance below the turned up skin flap corresponding to the area of the base of the stump to be covered—the bow is held sloping to the left. When this is completed the blade is turned parallel to the surface and the bone flap is sewed up nearly to the base of the skin flap, with the soft parts left projecting on all three sides of the bone flap to afford a good hold for the stitches. A wedge is then inserted under the bone flap, and by slanting the bow to the right the upper end of the bone flap is cut across on a line with the first incision, approaching the surface and stopping just short of the periosteum, the final connection of the bone broken by prying up with the wedge. The end of the blade of the saw is then transferred to a hole just beyond, in the bow, which brings it into the same plane as the latter, and the entire leg is sawed across just above the bone flap and below the turned-up skin flap. The four-sided bone flap is then brought across the base of the stump and sutured to the soft parts, and the skin flap brought down over it from the other side and fitted over the end of the stump, the operation completed by a short transverse suture of this flap a little distance above the end of the stump.

Deutsche Medicinische Wochenschrift (Berlin), September 2.

Surgical Intervention in Hysteria. M. SANDER.—A man of 23 presented the clinical picture of intestinal occlusion, and a young woman, that of perforating peritonitis. Each was operated on and everything found normal, the first undergoing operation twice and the second four times, until it was suggested to tattoo "Beware" on their abdomens. Sanders thinks that such mistakes could be avoided by more careful search for hysterical antecedents. In the observations reported, the lack of proportion between the pulse and the fever, and also between the general appearance and the severe symptoms, the rapid changes in the symptoms, their severity in the presence of the physician and subsidence in his absence, combined with evidences of hysteria, should have warned against intervention. He also notes the "elective" character of the vomiting, and that meteorism can be caused by voluntary swallowing of air. He classifies hysteria as a form of degenerative psychosis with many points in common with the severer forms. Hospital treatment is directly injurious. The patient should be in a "closed

establishment" and all his complaints systematically ignored and attention diverted, with general tonic treatment, suggestion and faradization later.

Partial Substitution of the Cornea. KUHN.—An experience with nearly a thousand patients in the last fifteen years, with ulcerative processes, perforations after ulcerations, or after removal of fresh or old prolapse of the iris, fistulae, keratoceles, incipient partial staphylomata, injuries with or without an opening into the inner eye or after various operations, all treated by applying a flap of the bulbar conjunctiva with or without a stem, as the substituting plastic material, enables Kuhn to affirm the extreme benefits derived from this simple process. The shape of the eye is retained, and sometimes part of the vision, even after severe injuries or lesions. The flap is sometimes left attached at both ends, sometimes re-enforced with a second flap, freshening the edges of the wound before covering it. In case of an ulceration, after evacuation and cleansing, the flap is applied, and the success is surprising. Pain disappears and healing is complete in five to seven days, after which the flap gradually vanishes, finally leaving nothing but a kind of *pannus tenuis*.

Muenchener Medicinische Wochenschrift, September 2.

New Problems in the Pathology of the Cell. E. ARBRECHT.—Further investigation has confirmed Albrecht's announcement of the fluid character of the cell; that the nucleus as well as the nucleolus of the immature cell, also the mature nucleus of the ovum, the segmentation nucleus and the nuclei of the blastomeres, are all drops of fluid in a likewise fluid cell body. They all have the properties peculiar to fluids, and these properties alone. The conclusion follows that all physiologic alterations in the shape of the cell must be interpreted according to the laws of fluid bodies, processes of mixing and unmixing, etc., e. g., such as we might imagine if we were able to restore, to its original form, the drop of fat saponified and dissolved in an alkaline solution. It is evident that various causes will affect the different elements in the cell differently, and numerous experiments with cells from warm and cold-blooded animals, suddenly heated or exposed to the action of diluted acids, showed a production inside the cell of a moderate number of tiny granules. It is impossible to determine, however, whether this fractional precipitation of living substance corresponds to the albuminous substance or to more complex combinations in the cell, and whether these changes regress or not, that is, whether they are localized lesions or partial necrosis. The direct microscopic picture, as well as the microchemical reactions, establish that at least a large part of the contents of the cell in cases of fatty degeneration, "coagulation necrosis," and albuminous degeneration of cloudy swelling, are coagulated bodies in the physiologic chemistry sense. The question then arises: Is coagulation necrosis a necrosis of the cell from or with coagulation, or is it merely a necrosis with consecutive, post-mortal accidental coagulation? Whether we regard the cell as a living element or an agglomeration of chemical substances, its complete physical interpretation must proceed from the premises of our knowledge of nature. The first and foremost question is, therefore, the "aggregate condition" of the mass. To determine this by objective methods is the most important task of cytophysics for the future.

Wiener Klinische Rundschau, September 2.

Parenchymatous Keratitis in Acquired Syphilis. E. ROUBICEK.—While specific treatment is unmistakably effective in this affection with acquired syphilis, mercurial inunctions have no effect on congenital cases, and hence inunctions are not applied to children in Deyl's clinic. Roubicek reports several observations which differ in several points from the schema established by Valude; he claims that in case of acquired syphilis the keratitis is unilateral, disproved by two of the observations; also that the pain is less than in congenital cases, with no lachrymation or shrinking from light, which was the reverse of what was observed in another case. But the observations confirmed his other points: the lesser vascularization with acquired syphilis, and the fact that the cloudiness of the cornea commences at the edge with distinct cloudy patches which slowly merge together. With congenital syphilis the tongue-shaped patches of cloudiness soon spread over the entire area of the cornea. Many cases of the affection with ac-

quired syphilis have probably been included with the congenital, especially in children, as we are apt to forget that children can acquire syphilis. Roubicek considers it almost impossible to distinguish between interstitial keratitis from acquired or congenital syphilis, as experience has shown that Hutchinson's stigmata can occur with acquired syphilis. Fournier advises the following questions: syphilis in the family; do the parents acknowledge it; syphilitic stigmata on them; occurrence of abortions, premature births, eclampsia and convulsions, bearing in mind the possibility of lead and tobacco intoxication, as women in tobacco factories abort regularly.

Zeitschrift f. Hygiene u. Inf. (Leipzig), xxxvi, 2.

Blackwater Fever (Hemoglobinuria). R. KOCH.—A large number of observations (41) are reported, which sustain Koch's previous assertions that blackwater fever is an acute intoxication with quinin, in persons who are naturally peculiarly susceptible to this drug or have acquired this idiosyncrasy from malarial infection or the continued use of it. One observation is particularly interesting: a person who had always taken a gram of quinin without inconvenience, became so sensitive that finally a half, a quarter or a tenth of a gram induced the typical attack of blackwater fever—chill, hemoglobinuria. He does not attempt to explain why this fever is frequent in some localities and rare in others, and adds that hemoglobinuria has also been observed in connection with the administration of phenacetin, sodium salicylate, antipyrin and phenol.

Gazzetta degli Ospedali e delle Cliniche (Milan), August 27.

Prognosis of Hydrophobia Complicated with Albuminuria. G. GRAZIANI.—A number of experiments on rabbits, and personal observations, have shown that the congestion of the kidneys with the other organs leads to albuminuria by the action of the virus on the renal lesion, and when this has occurred the antirabic treatment is powerless to arrest the disease at this stage, and the prognosis is exceedingly grave.

Injections of Phenic Acid in Tetanus and Erysipelas. S. PASCOLETTI AND S. TERESI.—The first writer describes two cases of tetanus cured with Bacelli's subcutaneous injections of 1 to 2 per cent. solution of phenic acid. The other describes his successful treatment of four cases of generalized erysipelas with similar injections at a distance from the localized lesions. Both comment on the tolerance of subjects with tetanus and erysipelas for large doses of phenic acid, and its prompt influence on the pathogenic agents and their toxins, which they ascribe chiefly to a modification of the soil.

Nord Medicale (Lille), September 1.

Vulvar Edema and Gangrene in the Puerperium. V. BUE.—In one of the observations described, the enormous edema was the classic albuminuric type; in the other, its early appearance, the coexistence of twin pregnancy, and the absence of albuminuria indicated that it was due to compression. Both cases were scarified and gangrene ensued. The first died, the other recovered. Bue adds that rest and milk diet may relieve the albuminuric type, but not the other, and warns that scarification should only be done in case of extreme necessity and the resulting wounds closely supervised.

Societies.

COMING MEETINGS.

Mississippi Valley Medical Association, Chicago, October 3-6.
Idaho State Medical Society, Lewiston, October 5-6.
Utah State Medical Society, Salt Lake City, October 6-7.
Wyoming State Medical Society, Laramie City, October 10.
American Academy of Railway Surgeons, Omaha, Neb., October 12-13.
Vermont State Medical Society, Burlington, October 12-13.
Tri-State Medical Society of Alabama, Georgia and Tennessee, Chattanooga, October 24-26.
New York State Medical Association, New York City, October 24-26.
Medical Society of Virginia, Richmond, October 24-26.
American Public Health Association, Minneapolis, Minn., October 31.

New York State Medical Association.—The preliminary program of this Association, which holds its sixteenth annual meeting October 24 to 26, in the New York Academy of Medicine, New York City, has been received. There will be a discussion on typhoid fever, participated in by Drs. Herman M. Biggs, William Osler, Reginald Fitz, A. Jacobi, W. W. Keen

and others, with a medicolegal symposium on expert testimony. In addition the program announces a large number of miscellaneous papers by leading practitioners, and a reception on the evening of October 25, to Dr. W. W. Keen, president of the AMERICAN MEDICAL ASSOCIATION.

Executive Health Officers of Ontario.—The fourteenth annual session of this association met in London, Ont., September 13 and 14, Dr. M. Rae of Guelph, the chairman, presiding, and Dr. J. J. McKenzie, Toronto, acting as secretary. A large number of the health officers from all over the province were present. Dr. J. J. McKenzie, bacteriologist of the Provincial Board of Health, read a paper on the "Odors of Water Supplies," and after that had been fully discussed, read another prepared by Dr. McDonald of Hamilton, on "Tuberculosis in Cattle." This paper elicited a very interesting and animated discussion, several of the members differing as to the amount and also the causes of this disease in Canada. On the morning of the second day, the delegates visited the asylum for insane, and inspected the sewage farm in operation there: afterward papers were read on "School Ventilation," by Mr. A. B. Shantz of Caledonia; "Anthrax," by Dr. W. T. Connell, Kingston, and one, "Sewage Disposal," provoked a long discussion which occupied the major part of the afternoon session.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Abstract of Proceedings of Twelfth Annual Meeting, Held at Indianapolis, Ind., Sept. 19, 20 and 21, 1899.

FIRST DAY—MORNING SESSION.

The Association convened in the Century Club Rooms of the Denison House, under the presidency of Dr. Edward J. III, of Newark, N. J.

An address of welcome was delivered by Mayor Taggart, which was responded to by the President.

After the transaction of routine business in executive session, the reading of papers was proceeded with.

THREE RARE CASES OF KIDNEY CYSTS.

DR. JAMES F. BALDWIN, Columbus, Ohio, reported these cases:

CASE 1.—*Enormous Hydronephrosis Simulating Ovarian Cystoma.* The tumor in this case filled the entire abdomen and entered the true pelvis, pushing the uterus to the left. The patient was unaware of the existence of any tumor, but thought that she had been getting stout for two years. There was no history whatever of any disturbance about the kidney. The enlargement was much more marked on the left side of the abdomen. At the operation the tumor was found to be hydronephrotic, of the right side, and with entire destruction of all kidney tissue. The blood-vessels had so far disappeared that the only pedicle was an enormously distended ureter resembling a piece of small intestine. The cyst, which was retrocolic, was enucleated without special difficulty, and recovery was uninterrupted.

CASE 2.—This was a large paranephric cyst containing about one and a half pints of straw-colored fluid resembling urine. The cyst wall was exceedingly thin, but was successfully enucleated and the cavity closed with temporary drainage. Healing occurred by first intention.

CASE 3.—*Hydronephrosis of a Retrorectal Congenitally Misplaced and Sarcomatous Kidney.* This tumor filled the pelvis, pushing the uterus up and pressing so firmly on the urethra as to necessitate the use of a catheter. The rectum was so pressed on as to render defecation almost impossible. After separating the tissues the cyst was tapped through the vagina and about one quart of urinous fluid drawn off. The completion of the enucleation had to be made through the abdomen. The specimen proved to be a sarcomatous kidney congenitally misplaced in the pelvis. During the development of the disease, hydronephrosis resulted, giving rise to the cyst which obstructed the pelvis. The patient recovered without difficulty and continued well at the time of the report.

While hydronephrosis simulating ovarian cystoma is not excessively rare, paranephric cysts, of any considerable size at least, have been very seldom reported. The case of hydronephrosis of a pelvic kidney is, so far as the reporter could ascertain, after a somewhat extended correspondence, entirely unique.

DR. JAMES F. W. ROSS, Toronto, Ont., called attention to a point in connection with the diagnosis of cystic tumors of the kidney, and it was this: Given a tumor that is unilocular by fluctuation, but looks like a multilocular tumor, in consequence of the stric it is always a tumor of the kidney, and not of the ovary. He also drew attention to one other point, relative to the treatment of the ureter. He believes that if the end of the ureter is tied with catgut, it can be left in the course of nephrectomy, and he does not think it is necessary to follow the ureter down to the bladder.

DR. LEWIS S. McMURTRY, Louisville, Ky., concurred in the remarks of Dr. Ross in regard to dealing with the ureter. In a number of cases of nephrectomy that he had done the ureter was not dilated as much as in the case described by the essayist. In one case particularly he did not attempt to trace the ureter up to the bladder and remove it, but left it, and it did not give any trouble.

DR. L. H. DUNNING, Indianapolis, Ind., directed attention to an important diagnostic point in dealing with cysts of the kidney, namely, the presence of the colon in front of the tumor. He has been able to demonstrate this in large sarcomatous tumors of the kidney, and by pumping the colon with air, the distended colon can be seen running over the outer border or center of the tumor. He has removed three kidneys for tuberculosis. In one instance he did not tie the ureter; he did not dissect and remove it far down toward the bladder, and he had considerable trouble in that case, following it for some time. He thinks it is unsafe, in tuberculosis of the kidney, to leave the ureter, and believes it ought to be removed low down in the pelvis and tied wherever it is left, and not followed down clear to the bladder.

DR. J. HENRY CARSTENS, Detroit, Mich., said that surgeons always had more or less difficulty in making the diagnosis in the cases under discussion, and while the point brought out by Dr. Dunning was a good one, it did not always hold good. He recalled one case in which he supposed he had an ovarian tumor, but found a hydronephrotic kidney as large as that of the first case reported by the essayist. The kidney was very loose, and afterward a stone was found in it. The stone was quite large. He believes that when we have a loose kidney which flops around, it may grow over the colon, and the colon in some of these cases is behind instead of in front of the tumor.

DR. JOSEPH EASTMAN, Indianapolis, Ind.—by invitation—stated that he had recently had a case of pancreatic cyst as large as a good-sized head or larger, and it was very satisfactory to notice the ascent and descent of this tumor during inspiration and expiration, a thing not possible if the tumor had been post-peritoneal or connected with the kidney. The pancreatic cyst had distended the mesocolon to such an extent that the transverse colon was very perceptible, lying across in front of the enormous pancreatic cyst; so the diagnostic point mentioned by Dr. Dunning, he thinks, is applicable to pancreatic cysts.

DR. JOHN M. DUFF, Pittsburg, Pa., narrated an instructive case in which a diagnosis of abscess of the spleen had been made, but a more careful subsequent examination revealed the fact that the tumor was connected with the kidney, as he had suspected. A median incision was made; the tumor had pushed up the mesocolon; the colon was adherent to the tumor around at the side, and the mesocolon was almost ulcerated through. The kidney was removed through the mesocolon. There was no secretion of urine from the kidney, an examination not having been made with the Harris instrument for the purpose of ascertaining the condition of the urine from both kidneys.

DR. DUNNING asked as to the reliability of the Harris instrument, to which Dr. Baldwin replied that it was a very satisfactory one. He had used it several times in the female. It can be used more quickly and with less trouble than ureteral catheterization.

ECTOPIC GESTATION: SHALL THE CASE BE OPERATED ON AT OR NEAR THE FULL TERM, THE CHILD BEING ALIVE?

DR. L. H. DUNNING, Indianapolis, Ind., read a paper on this subject. As preliminary to a discussion of this theme, he reported the history of a case of ectopic gestation of eight months' duration, and operated on five weeks after the death of the fetus. He said that the proper treatment of ectopic pregnancy

after the sixth month, when the child is still living, is yet under discussion. He wrote his paper for the purpose of considering only one phase of the subject, namely, shall operative intervention be instituted during the period of viability of the child, or shall we await the death of the child and the cessation of the active circulation of the placenta, and then operate? The settlement of this question, he said, must hinge on the relative mortality of the different procedures to the mother. The ectopic infant is of such low vitality and so frequently deformed that if to resuscitate it greatly jeopardizes the life of the mother, then ethically one must withhold the hand and permit it to die that the greater life may be saved. Such have been the sentiments of the writer for many years. He has had three cases of ectopic gestation at or near full term. In the first, the operation was done during spurious labor at full term. In this case, although fetal movements were detected one hour before operation, the child never breathed after removal by abdominal incision. The mother died the eighth day after operation, of hemorrhage resulting from the removal of the placenta, which was left at the time of the initial operation. The placenta was removed thus early in consequence of impending death from septicemia. The other two cases were briefly narrated. A statistical table accompanied the paper. He stated that if the tables given by him approximately show the percentage of recoveries to mothers, then there was an answer to the perplexing and heretofore mooted question, "Shall operative intervention be instituted during the life of the child or only after its death?" We are not compelled to longer consider and weigh the probability of the length of life in days of the child, the safety of the mother alone demands intervention. Undoubtedly other questions will urge themselves on us, such, for instance, as, "Is it less dangerous to operate at six months or at nine months, and what treatment of the placenta yields the least mortality?" These are still under discussion, but it was aside from the writer's purpose to discuss them. His only endeavor is to strive to arrive at a correct and fruitful answer of the question, "Is it safer for the mother to be operated upon in a case of ectopic gestation during the viability of the fetus?" He believes that the statistics collected and compiled by him are so nearly complete and correct that the answer may now be given unqualifiedly in the affirmative. There will undoubtedly be individual cases in which the good judgment of the surgeon will direct him to await the death of the fetus. These will be exceptional ones. The rule will be to operate at or near term during the life of the child.

DR. J. HENRY CARSTENS agreed with the essayist that the proper way, other things being equal, is to operate at once when the child is living and viable. The placenta is not always attached to the broad ligament. Often rupture takes place, and the placenta is attached to the intestines, the colon, the rectum, or the sigmoid, and in cases of that kind it is utterly impossible to remove the placenta when an operation is performed when the child is alive. He had seen such operations performed by other surgeons, and the patients invariably died from hemorrhage.

DR. LEWIS S. McMURTRY endorsed what Dr. Carstens said, with one slight qualification. He thought Dr. Carstens struck the keynote in determining the course to pursue in these cases. By referring to one of the earlier volumes of Transactions of the Association, the report of a case may be found where the fetus went to full term, was dead, and some weeks after a spurious labor, when there were beginning septic symptoms, he operated. No fetal movements had been observed for nearly three weeks. The placenta was very large; there was no sign of any atrophic changes in it in consequence of the death of the fetus; it was spread out over one side of the uterus, over the colon and ileum, and there was such a profuse hemorrhage as will obtain from an attempt to enucleate the placenta as never will be seen at the operating-table under any other circumstances. It was perfectly dreadful, the woman being exsanguinated within a minute, the pelvis being full of blood. When the placenta is disposed toward the broad ligament and uterus, as in the case described by Dr. Dunning, he believes there is a good opportunity for complete enucleation of it.

DR. X. O. WERDER, Pittsburg, Pa., said he had reported, in the Transactions of the Association, a case in which he did a celiotomy for ectopic gestation at full term, or within two weeks of full term, in which he succeeded in enucleating the

placenta and removing at least two-thirds of the sac. The rest of the sac was adherent to the intestines, and he found it advisable to stitch it to the abdominal wall. Hemorrhage during the removal of the placenta was very profuse, but he succeeded in controlling it promptly by clamping the uterine and ovarian arteries. The woman recovered, and the child lived four days.

Dr. JOSEPH EASTMAN fully concurred in the conclusions of the essayist, and narrated an interesting case of ectopic gestation that had come under his observation ten years ago.

Dr. JOHN M. DUFF believes that in every case of extrauterine pregnancy, as soon as the diagnosis is made, arrangements should be perfected for an operation as soon as possible.

The paper was further discussed by Drs. Gilliam, Ricketts, Ross, all of whom agreed with the essayist with slight differences of opinion.

WHAT SHALL WE DO WITH THE POST-OPERATIVE HEMORRHAGE OF CELIOTOMY?

Dr. D. TOP GILLIAM, Columbus, Ohio, presented this paper. Cases of post-operative hemorrhage were cited, and he said he had very little to offer in the way of suggestion. As a burnt child dreads the fire, so his most painful experience in the tragic cases he had cited had imbued him with a wholesome dread of delayed interference after celiotomy. He has on several occasions opened the abdominal incision down to the peritoneum, for hemorrhage from the walls, without untoward result. This class of cases can usually be easily distinguished from intraperitoneal bleeding by the puffed and discolored appearance of the tissues along the line of incision. If he was satisfied that a large vessel had let go, as indicated by the rapid development of symptoms indicative of hemorrhage, he would open the abdomen with the utmost celerity. But the author's paper was not inspired by any hope or expectation of being able to suggest any line of action, his sole object being to elicit an expression of the prevailing views of his fellows. Still he would like to make one suggestion with reference to the medical treatment of such cases, and that is the use of atropin. Some time since he had in charge a young woman who was subject to the most violent and persistent uterine hemorrhage of unaccountable origin. She had passed through many hands before coming to him, and he had tried many of the vaunted remedies without avail, as she could not make up her mind to have a curettage, and during one of her spells she fell into the hands of his brother, Dr. Charles F. Gilliam. He placed her on atropin, with the result that, after the physiologic effects of the atropin became manifest, the bleeding ceased. Since then her attacks have been less frequent and always promptly amenable to the atropin treatment. Other cases followed in the practice of Dr. Gilliam and his brother, among which were some intractable cases that had been curetted, and in every instance so far the hemorrhage had been controlled by the atropin. The results had been so convincing in these cases that had fallen under his observation as to force conviction.

As to the *modus operandi* of atropin, he could only speculate. It is known that it increases the cutaneous circulation, producing a general and marked hyperemia of the surface, and that the cutaneous vessels are capable of containing nearly one-half of the blood of the body, hence by derivation it diminishes the amount of blood circulating in the internal organs. The author thinks it quite likely that the vasomotor action which dilates the cutaneous vessels coincidentally and by way of equation constricts the visceral vessels. The duodenal ulcers resulting from extensive burns of the skin would argue in favor of compensatory vasculature. It is not expected that this or any other medicinal agent will arrest the torrential hemorrhage of the larger vessels, such as the uterine or ovarian arteries, but is especially applicable to that troublesome form of hemorrhage which emanates from numerous vessels of smaller caliber.

As to the vital question, when to interfere surgically, and when to refrain, the paper ended where it began—in an interrogation point.

Dr. CHARLES A. L. REED, Cincinnati, Ohio, said that when he observes symptoms unmistakably indicative of internal hemorrhage, he wants to get at the bleeding point as quickly as possible. He cited some cases in which he had had to deal with post-operative hemorrhage following celiotomy.

Dr. H. W. LONGYEAR, Detroit, Mich., said there was nothing

more puzzling than to know just what to do in cases which showed the condition of collapse described by the essayist, indicative of internal hemorrhage. And yet there were other conditions which produced the same symptoms, and the surgeon must use fine discrimination. If he knows a vessel is bleeding, he considers it his duty to cut down and search for the bleeding point, no matter what the condition of the patient may be. In a case of ruptured tubal pregnancy, where there is internal hemorrhage going on, it is the duty of the surgeon to reopen and do the best he can. It is not always easy to find the bleeding vessel. Dr. Longyear cited two cases that had come under his observation in the last two years, that brought this forcibly to his mind.

Dr. RUFUS B. HALL, Cincinnati, Ohio, stated that hemorrhage or shock could be determined largely by the operator himself. When a patient is put to bed after an operation, the surgeon is rather well aware whether there is great danger of secondary hemorrhage or not. If the operation has been a complicated one, and a condition is left which adds to the risk of hemorrhage, this materially aids the surgeon in determining whether or not the patient is bleeding or suffering from shock. He would not hesitate a moment to take out a stitch, after the abdomen is closed without drainage, and he believes that without very extensive exploration he could readily and certainly determine whether hemorrhage was taking place or not.

Dr. LEWIS S. McMURTRY called attention to the fact that post-operative hemorrhage was very much less frequent now than formerly. In the early days, before operative technic was improved as it is now, and the drainage-tube was more universally used, it was common twenty-four or forty-eight hours after an operation to see great quantities of blood pumped out of the drainage-tube. Hemostasis was not as thorough then as it is now. To-day the small vessels are carefully ligated. He has pursued the course of securing the ends of vessels with a small ligature, which gives additional security.

Dr. J. HENRY CARSTENS dwelt on the differential diagnosis between hemorrhage and shock. He believes in the efficacy of medication for the control of hemorrhage, and thinks that atropin or belladonna is a good thing. He uses them in preference to strychnia.

Dr. JAMES F. W. ROSS said that in cases of thick pus-tubes with a very edematous pedicle, the surgeon was liable to have such a hemorrhage, particularly from the edematous pedicle and rotten condition of the tissues afterward. He would not hesitate to remove a stitch, after the abdomen had been closed, and search for the bleeding vessel.

Dr. L. H. DEXNER called attention to what he considered a valuable diagnostic sign in differentiating between shock and hemorrhage. He has seen shock occur in twelve, twenty-four, and thirty-six hours after operations. He has also seen patients recover from shock, who could not have recovered from hemorrhage. This differential diagnostic sign is that of irregular capillary circulation or congestions here and there. He recalled three or four cases in which he spent hours at the bedside of patients, hesitating between shock and hemorrhage, and on the appearance of localized spots, as a purple ear or purple lip, or a spot on the face, he decided it was shock.

Dr. X. O. WEBER stated that it is his rule, as soon as he suspects a hemorrhage, after an operation, to take out a stitch, after the abdomen has been closed, and insert his finger for the purpose of making a diagnosis of hemorrhage, and if it is confirmed he reopens the abdominal wound and ties the bleeding vessel without putting the patient under the influence of an anesthetic.

Dr. EDWIN RICKETTS, Cincinnati, Ohio, said that whenever ligatures are used, there is one procedure that he wished to refer to, one always resorted to by Bantock, that is, crushing the tissues for one-half or one-quarter of a minute by the heavy jaw clamp, and after removal of the clamp the ligature is applied. The angiotribe, which is being advocated by some operators, in which the ligature is not used at all, is applied and permitted to remain for two and a half minutes, and then removed, and it is claimed no hemorrhage follows its application. The plan, however, suggested by Bantock, is one that should not be lost sight of in applying the ligature.

Dr. WILLIAM H. HURSTON, Cleveland, Ohio, stated that if each vessel was caught separately, and tied with fine catgut or silk, reinforced by seizing the ovarian artery as it comes off the pelvic wall and inserting one stitch and one near the cornu of the uterus, one need not have hemorrhage. He thinks it is unnecessary to crush the tissues after the method mentioned by Dr. Ricketts.

(To be continued.)

THE

Journal of the American Medical Association

PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:

Per Annum, in Advance	\$5.00
Foreign Postage	2.00
Single Copies	10 Cents

In requesting change of address, give old as well as new location

Subscriptions may begin at any time and be sent to

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

No. 61 Market Street, Chicago, Illinois.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Henry P. Newman, 100 Washington St., Chicago, Ill., sending him a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership.

On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

These new members of the Association should send their annual subscription direct to the Treasurer, Dr. Henry P. Newman.

All communications and manuscripts of whatever character, intended for publication in the JOURNAL, should be addressed to the Editor, and all communications relative to the business of the JOURNAL, proof-sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 61 Market Street Chicago.

Original communications are accepted with the understanding that they are exclusively contributed to this JOURNAL.

SATURDAY, SEPTEMBER 30, 1899.

ADENOMYOMATA OF THE FEMALE SEXUAL APPARATUS.

In his studies of the origin, nature and destiny of the adenomyomata of the female sexual apparatus, Leopold Landau, Berlin, has developed some new knowledge of an old subject. The new matter has for the most part been accumulated within the last five years, and is so complete that the story of the origin, construction and treatment of these neoplasms may now be told in a purely pragmatic and sequential way.

As early as 1896 Von Recklinghausen observed, in addition to the ordinary fibromata, myomata and fibromyomata of the uterus, certain muscle tumors in which glands and cysts were present. The epithelium of the glands and cysts of these neoplasms, which he denominated "organoid myomata," he believed to be derived, either from prenatal inclusion within the tissues of the coalescing tubes of Mueller, of fragments of the Wolffian bodies, or from cut off post-fetal out-shoots of epithelium, growing from the uterine mucosa deeply into the muscularis.

Landau recalls that the tubes of Mueller, which in the female become the Fallopian tubes, and by the blending of their lower extremities form the uterus and vagina, are so situated in the embryo that the upper segment of each tube lies laterally to the Wolffian body of the same side; also that at a lower point which corresponds to the tubo-uterine junction of post-fetal life, the tube of Mueller crosses the Wolffian duct, coursing in a median-ventral direction, and that the lowest or vaginal segment lies median to the duct of the Wolffian body. With these relations in mind it is not difficult to

understand how, as Recklinghausen has shown, fetal inclusion of epithelium from the Wolffian ducts within the substance of the uterine extremity of the Fallopian tube, or the muscularis uteri, could come to pass.

The first substantial proof of Von Recklinghausen's theory is to be found in the fact that these tumors occur with overwhelming frequency in the peripheral layers of the uterine muscularis near the tubo-uterine junction, and are very often bilaterally symmetric.

The second and most remarkable proof consists in the fact that the gland tubules of the adenomyomata under discussion, both in systematic anastomosis and character of epithelium, are strikingly similar to the Wolffian canals. In these tumors there may be traced out the systems of winding, secreting tubules with dilated extremities emptying into a straight connecting tubule or main canal, comb fashion, like miniature parovaria. In other words, we see in a neoplasm of adult life, the complicated anatomic structure of an elaborate embryonic organ.

Landau has always sought for epithelial inclusions whenever a myoma presented which had entangled itself in uterine muscularis, displaying no distinct line of demarcation, and each time with a positive result. Contrary to V. Recklinghausen, he states that adenomata which grow out from the uterine mucosa after birth may arise from the entire mucosa corporis or from a small circumscribed area, and may grow centrifugally through the uterine wall to the serosa and even into the pars uterina tube and ligamentum latum. He has shown, moreover, on the basis of L. Pick's observation, that not all of these included epithelial outshoots from the mucous membrane represent post-fetal inclusions, but that some are developed from epithelium and connective tissue which grows deeply into the muscularis—peripheral layers—in fetal life. Pick has found glands of the fetal endometrium corporis occupying the subserous layer of the myometrium in adults, and has demonstrated that myomatous proliferation may take place about such displaced fragments of mucous membrane and remains of the tubes of Mueller. He has shown that mucous membrane adenomata exist, which are primarily of fetal origin.

It is well known that the stroma of the normal mucosa corporis uteri is made up of the so-called cytogenic tissue. In other words, it is a connective tissue composed of abundant round and spindle cells and intercellular substance containing fine reticulating fibers. This tissue is not found in the Wolffian body nor in its post-fetal remains, neither in the epi-ovarium nor parovarium. It is likewise absent in parovarian adenomata showing the scattered arrangement and which have not attained considerable growth. If, however, the Wolffian tubules proliferate extensively, developing many adenomatous systems—closed arrangement—there then appears an accompanying growth of cytogenic connective tissue. The appearance, therefore, of cytogenic tissue in adenomyomata as the stroma of Wolffian body epithelium

is not dependent on the localization of the neoplasm, but on the extent and intensity of the growth, but if epithelium lined tubules are found anywhere in the female genital apparatus where such structures do not histologically belong, the presence of cytogenic connective tissue as their supporting substance gives evidence of their origin from the tube of Mueller or from the mucosa corporis uteri.

Landau very appropriately calls attention to the great practical importance of knowledge of the origin of these neoplasms. He believes that juxta-uterine adenomata, and even voluminous subserous uterine adenomata, despite the diffuse transition of their bases into the normal muscularis, may often be treated successfully by conservative myomectomy.

Pick and Landau have, moreover, encountered adenomata in the round ligament and in the posterior fornix of the vagina. Adenomata of the round ligament are hard, varying in bulk from the size of a walnut to that of a plum. They are not sharply defined from the surrounding tissues. In all cases of adenomyomata of the vagina the neoplasms are situated in the muscularis of the posterior fornix. They project as knotty masses into the perivaginal cellular tissue or protrude, polypus-like, into the vagina. In macroscopic section the fiber bundles are distinct, as in ordinary fibroids. Here and there are scattered yellowish and brown spots of pigment and irregular splits and cracks. On microscopic examination the supporting structure is seen to be composed of atypical fibromyomatous tissue. The little pigmented spots are seen to be gland and cyst formations presenting cylindrical and ciliated epithelium.

The adenomyomata of the ligamentum rotundum and posterior fornix offer valuable evidence in substantiation of Von Recklinghausen's theory of the origin of such neoplasms from displaced tubules of the Wolffian bodies. As in the male, the epididymis is transported during the "descensus testicularum" through the gubernaculum Hunteri, so in the female the cord of the primordial kidney in descending may draw a portion of this embryonic organ down with it into the inguinal canal. The Wolffian tubes, particularly of the distal parovarian segment, may thus descend into the canal of Nuck or into the labia majora.

The transport of epithelium from the primordial kidney through the ligamentum teres uteri to the inguinal region may be assumed without misgivings. Even Kossman, who denies the parovarian origin of uterine and tubal adenomyomata, concedes that the epithelium of adenomyomata of the round ligament comes to this region along the route indicated.

If the Wolffian body is abnormally long and extends down over the dorsum of the sinus urogenitalis, or the canals at its lower pole persist until the tubes of Mueller blend at the sinus, the parovarian segment of the Wolffian body could easily be swallowed up in the dorsum of the uterus or vaginal fornix. The adenomyomata of the posterior fornix present further evidence of their prim-

ordial kidney source in the dichotomous branching of their tubules. In the case of those adenomata originating from the epöoöphoron we have to deal not with hypothetical Wolffian canals, but with physiologically preserved masses of primordial kidney.

To the adenomyomata derived from the Wolffian body, L. Pick has given the name "meso-nephritic adenomyomata" and to those derived from the mucous membrane the name of "mucous membrane adenomata." The adenomyomata of the female sexual apparatus, therefore, belong to one or the other of these groups, and must not be confused with the ordinary histoid myomata which represent simple circumscribed outgrowths from the muscularis uteri, and which, according to Virchow, are the result of irritative or inflammatory processes and are not developed in any way from displaced epithelium.

THE ORIGIN AND OCCURRENCE OF EOSINOPHILOUS CELLS IN THE SPUTUM.

One of the most conspicuous elements in the richly-colored blood preparation, made according to Ehrlich's method, is the eosinophilous cell. The brilliantly stained granules in its protoplasm make this cell a marked object. Nevertheless, but very little is known concerning the place and the mode of its origin; the opinions of the investigators on these points vary greatly. The occurrence of eosinophilous cells in the sputum, under various conditions, has also attracted considerable attention. Their presence in the sputum is explained in two directly contradictory ways: Ehrlich and others derive them from the blood; but their presence in the sputum in enormous numbers in bronchitis and bronchial asthma without a corresponding eosinophilia in the blood has given rise to the opinion that they are formed in the respiratory tract. Fuchs¹ recently called attention to the possibility that eosinophile cells and free granules in the sputum might in some cases stand in relation to disintegrating red blood-corpuscles. In a case of hemorrhagic pleuritis, undergoing absorption, Klein² observed the development of an increasing eosinophilia in the exudate followed by an increased eosinophilia of the blood. It does seem quite natural that red blood-discs should furnish the material for eosinophilous granules, both in bloody exudates and in sputum. These granules are, like the red corpuscles, albuminous, and contain hemoglobin as well as iron. Fuchs found eosinophile cells in large numbers in sputum which was hemorrhagic on account of various processes in the lungs.

Eosinophile cells are, according to Fuchs, also frequently present in large numbers in the sputum in bronchial asthma, in catarrhal bronchitis, passive congestion of the lungs, bronchiectasia, pulmonary infarct, carcinoma and syphilis of the lungs, and also in coryza and pharyngeal catarrh. Teichmüller found these cells in the sputum in 73 per cent. of 167 tuberculous patients, and Fuchs in 66 per cent. of 38 cases. Teichmüller attributes to the eosinophile cell a pronounced protective influ-

¹ Deutsche Arch. f. Klin. Med., 1899, 63, 427.

² Chl. f. Innere Med., 1899, 20, 97.

ence against tuberculosis, and he would in a measure estimate the resistance of the patient on the basis of the sputum eosinophilia. Fuchs does not fully agree in this; he believes that the absence from the sputum of the cells stands in some relation to the presence of fever in tuberculous cases, because the number of eosinophile cells is generally small in fever; eosinophile cells occur in varying numbers in the sputum in all diseases of the respiratory tract not immediately accompanied with fever. These cells are not all of the same origin; some are probably derived from leucocytes with neutrophile granules, others develop by phagocytosis of changed red blood-corpuscles. Neither do they originate in any single definite place, but may develop in practically all organs and tissues. Their general significance may be interpreted as a manifestation of the protective and reparative powers of the organism.

MENTAL ABERRATION AND LABOR DISTURBANCES.

The observation that would-be leaders of men are not infrequently representatives of degenerate and unsound types of mind, is by no means novel. History, modern and ancient, furnishes an overabundance of illustrations of this tendency of the mentally deficient to attempt to dominate the sober but less active minds of the toiling classes. Those of the degenerate type hold atavistic views and wish society to be recognized on the basis of the primordial communal system when the community held all things in common, including wives, and when individual property, with its incentive to the energetic, was not permitted. It may be noted as a historic fact that civilization consisted largely in the emergence of society from this chrysalis stage. The otherwise unsound type of leader may be known by his advocacy of dreamy, supposed reforms, and his expressed desire to tear down every institution of modern social organization. No one of sense, of course, maintains that the present organization of society is perfect, and so all these "cranks," as we call them, get a hearing. A recent uncontradicted published report of an address delivered by an "agitator," well known in his own community for his anarchistic beliefs, on the subject of one of the late labor demonstrations, discloses a marked example of this mental twist.

Referring to the action of a riotous mob, he said: "This wholesale gathering of people opposed to constituted authority was a grand thing. This gathering of mobs will continue. The opposition against constituted authority will grow, and some day the mob will act." "There has been little violence done but there will be some time." "The people will rise up, and mobs will gather to put down constituted authority." To this type of insanity—for who will maintain it is not really insanity?—the rising of the people, to put down by violence authority peaceably erected by themselves for their own protection, is not absurd. Had he but an opportunity, the alienist would here surely find a paranoiac. The true reformer proposes a peaceful remedy for social

ills, the insane reformer merely wishes to destroy all restraint on license. The physician, as the only ubiquitous physiologic student of human psychology, has herein a manifest duty to society in pointing out to the untrained the patent earmarks of mental strabismus. In the past the degenerate and the paranoiac have at times accomplished tremendous harm, because the world lacked the data for discriminating between honest solicitude and insane plausibility. To-day the medical profession, with its well-founded psychiatry, must stand between the public welfare and those aberrant minds that seek to upset social order. The paranoiac and the degenerate are abroad in the land, not, it is true, accomplishing as much harm as in former more ignorant ages, but yet doing much to make mankind uselessly unhappy and to hinder true social progress. To the medical profession is committed the great trust of studying and analyzing these mild but infinitely dangerous types of warped mentality. On the profession must rest some at least of the responsibility of continually restricting the influence on the public of these diseased minds.

NO COMMERCIALISM IN SWEDEN.

The medical profession in Sweden enjoys a most enviable existence, if we are to believe a writer in the *British Medical Journal*. This gentleman writes to call attention to the commercialism which he thinks is too prevalent in England, especially objecting to the habit of putting up one's own prescriptions, selling and buying practices, etc. As a contrast, he calls attention to the professional sensitiveness of the Swedish doctors, who do not even send bills for their attendance. "Most Swedish families send their doctor a check once a year; the amount varies according to their means. The doctor does not send a receipt but simply his card, 'with many thanks and wishes for a happy New Year.'" This, we repeat, indicates a very enviable condition for the Swedish doctor, but we are afraid it would not "go" here. We opine the butter would be very thin on the bread of the average practitioner, if the bread itself did not finally come up missing, were the Swedish method adopted in this country. However, the idea is a beautiful, yes, an ideal one, and if some of our readers will adopt it for a few years and report, we shall be delighted to publish their experiences.

"FORCED" EDUCATION.

The damage to the nervous organization of the child, and the generally disastrous effects of forcing in the school curriculum, have been often remarked, but the evil still continues. The *N. Y. Medical Journal* (September 16) notices with approval an address made before a provincial Canadian medical society last summer, in which this subject was taken up. The special point made was that the course of study should be carefully adapted to the average, or rather, the under-average child, and this both as regards mental and physical development. "Fundimentary education is all that the community should set peremptorily before the mass of children; those who have the capacity for more ad-

vanced education are few in number, and their aspirations may well be met by a few high schools." These are truths, we might better say truisms, but our educational authorities do not always seem to regard them, and their repetition can not well be too emphatic. With all our boasted intelligence, we might as well recognize the fact that mediocrity is the rule and talent and genius are the exceptions. We can not follow the *Journal*, however, if we understand it correctly, in its view that the same evil exists to a flagrant extent in our medical schools. The errors of the medical curricula—and they may be numerous enough in the present transition state of medical education—are not that they are too thorough and advanced. Up to date they have not been advanced enough. Nor do we want a low average in our profession, something above mediocrity should be the aim. The foolishness of "forcing" has not yet revealed itself in American medical education.

AN ENVIABLE PRINCIPALITY.

We are not accustomed to think of an Indian prince, ruling some tributary state in British India, as a man of advanced ideas. In the *Indian Medical Record*, however, we read that the Thakore Sahib of Gondal, the ruler of a principality of some thousand square miles, is a medical graduate of Edinburgh University and the author of a medical work; that in his dominions sanitary regulations are thoroughly carried out, vaccination enforced, hospitals and dispensaries maintained, and an efficient health organization that enforces local sanitation and reports reliable statistics exists. Inquests are made over every accidental, violent or suspicious case of death, food and water infection, etc., in short, everything apparently that we expect to find in all these particulars in a highly civilized Caucasian community. The only Oriental feature in the report is the order to remove a village bodily from an unhealthy locality to a better one, which was carried out and "hailed with delight by the villagers concerned," who received "every facility, pecuniary or otherwise," in the removal. Notwithstanding the fact that the principality appears to be within the plague-stricken section of India, it has escaped the pest, owing to the extreme precautions taken. It has an increasing birth-rate, with a decreasing death-rate to top off its sanitary prosperity. Agriculture is aided by the government, which maintains public gardens and an experimental farm, and there is an "agricultural association" under its direct patronage. The exports are increasing and the imports decreasing, while the gross public revenue exceeds expenditures nearly 50 per cent. If all the minor states in British India were like the one here described, that section of the world would be a most enviable one in many, if not all, respects.

VENEREAL DISEASE AND THE BRUSSELS CONFERENCE.

The discussion of regulation of venereal diseases at the Brussels conference of social hygiene, September 4 and 5, was notable for the number of participants and the very widely differing views expressed. As the report in the *British Medical Journal* states it, no decision of any kind was arrived at in the two days' discussions, it

having revealed the greatest differences of opinion and the utter absence of any trustworthy data for the formation of sound conclusions. Statistics were handled freely on both sides; there was no lack of authority in favor of either of the combated views. The zeal of the speakers is evidenced by the fact that calls to order by the president appeared to be frequent. It is perhaps to be regretted that the expression of opinions was not confined to medical men, as the participation of lay advocates of abolition of supervision detracted somewhat from the purely scientific character of the discussion. The differences of opinion, however, among high medical authorities, were great enough to demonstrate that the question is still an unsettled one, and to leave it open for further study. The main point seemed to be confined to the spread of syphilis, and it was admitted that some statistics showed that regulations had not affected the frequency of chancroid and gonorrhoea. Since, according to modern medical theories, gonorrhoea is hardly, if at all, behind syphilis as a danger to public health, this is a serious fact—if it is a fact. Regulation that only suppresses syphilis does only half or less than half its work. Considering all things, any system that supervises only one sex is inefficient; an infected man is as much a source of danger as an infected woman and, as an active rather than a passive agent, even a greater peril to public health. We are not much surprised, therefore, at the character and outcome of the discussion. We shall await the publication of the final conclusions of the conference with some interest.

DR. OGSTON'S CRITICISMS.

The English people, while comparatively pacha, dermatous as regards criticism from without, do not take kindly to public acknowledgements of their faults from home sources, even in a modified and comparatively harmless way. Dr. Ogston's recent address on the faults of the British army and navy medical services has therefore stirred up something of a wasp's nest sort of turmoil. Army and navy surgeons are inclined to resent some of his criticisms, and medical men in civil life have found some features of his address unacceptable. We wonder what the British public would have to say to such rampant criticism of all kinds as everything in our late unpleasantness with Spain received from responsible and irresponsible writers last year. It would be a new experience to them, but we can dismiss it from our imaginations as an impossibility in any country but our own. The saving fact is that we know how to take it, though we are altogether too negligent as to the reputation it gives us abroad. Apropos to the above, a recent letter to the *London Times* has again stirred up our British confrères on the subject of secret commissions. Public charges have been made, not too well supported, it is true, but such as are likely to impress the lay mind, and the profession therefore naturally resents them. There are mercenary individuals in every profession, and some of these are beyond doubt to be found among British physicians, but they are there, as here, the exceptions and not the rule. Wholesale accusations fall of their own weight; they are incapable of proof and their effect is only temporary. It does not seem to us that the charges of Sir Edward Fry need cause

our British professional brethren any serious anxiety, but should only quicken their ethical instincts to avoid even the most innocent contaminations with the prevalent commercialism of the day. We in this country have abundant evidence of this necessity.

RHEUMATIC FEVER WITHOUT ARTHRITIS.

The symptoms of disease may be looked on as an expression of the reaction between the causative irritants and the invaded body. In most cases the irritants are micro-organisms, which sometimes cause local lesions at the site of entrance into the body, and almost invariably give rise to the generation of poisons, to the activity of which often the most pronounced phenomena of the disease are due. Febrile multiple arthritis may result from numerous causes, and it is possible that what is clinically designated acute rheumatism may have a like diversity of origin. Such evidence as exists indicates that acute rheumatism is an infectious disease, but, although a number of micro-organisms have been found in the articular and complicating lesions, there is as yet no agreement as to a specific etiologic factor. While the arthritis is generally considered the most characteristic manifestation of acute rheumatism, it can be conceived that the disease may exist without articular manifestations. These must be viewed as dependent on the activity of the causative micro-organisms or their toxins, and it requires no stretch of the imagination to believe that for some unexplained reason the joints may resist the invasion of the irritants, although pain, fever, and sweats may be present. Of the possibility of such an occurrence, evidence is afforded by a case reported by Hawthorne¹: A woman, 18 years old, had for several days been complaining of headache and aching in the back, with thirst and want of appetite. Her throat was sore and the temperature was 103.6 F., and the fauces were congested. The knees and shins were tender on pressure, and the skin was moist. The febrile temperature continued for a week, when it became subnormal. Two weeks later the patient complained of acute pain in the right knee, and the joint soon became distended with fluid. This condition improved under rest, and the patient was shortly dismissed quite well. It is known that acute rheumatism may attack a single joint, and it has also been pointed out that the tonsils probably constitute a common portal of entry for the hypothetic micro-organism of the disease, so that, in the case reported, there is no sufficient reason for excluding the diagnosis of acute rheumatism, although the attack proper was unattended with articular symptoms.

Medical News.

FIRE destroyed St. Vincent's Hospital, Norfolk, Va., recently, and five patients lost their lives.

THE ONTARIO Medical Council building, Toronto, is for sale; the price being asked is \$100,000.

OUR RUSSIAN exchanges announce that the small epidemic of supposed plague in the Astrachan district has died out.

DR. GEORGE W. GROVE, Kansas City, Mo., has gone,

and Dr. J. H. Austin, of the same city, will now go, to New Mexico.

AMONG the charitable bequests of the late E. Ray Thompson, Troy, N. Y., is a gift of \$5,000 to the Child's Hospital at Albany.

GRACE CHURCH, Winnipeg, at the sacramental service on the evening of September 17, adopted the system of individual communion cups.

DR. G. FRANK LYSTON, Chicago, was recently operated on in New York City, for appendicitis. He has gone to Florida to recuperate.

BY THE will of William J. Pinkerton, who recently died in Mt. Joy, Pa., \$1000 has been left the Presbyterian Hospital of Philadelphia.

DR. PEARCE KINTZING, B. Sc., has been elected professor of anatomy and clinical surgery at the Woman's Medical College, Baltimore, Md.

DR. J. CLARENCE WEBSTER has returned from abroad, to enter on the duties of his recent appointment to the chair of obstetrics and gynecology in Rush Medical College, Chicago.

THE LAYING of the corner-stone of the Lucien Moss Home for Incurables, Philadelphia, took place September 22. Many prominent physicians took part in the opening exercises.

W. W. FORD, B.A., Adelbert College, M.D., Johns Hopkins, is associated with Dr. McCrae as being one of the first holders of the newly founded research fellowships in pathology, of McGill University, Montreal.

A COMMITTEE has been appointed by the Philadelphia County Medical Society, to confer with the mayor of Philadelphia, relative to the growing practice of blocking the public streets to physicians on their round of duty, by parades, etc.

IN A RECENT ruling made by Judge Buffington of Philadelphia, in the case of Howard Butler and Joseph Wilkins for alleged violations of the oleomargarin laws, the decision is in favor of the Federal Government, and a penalty has been assessed.

DR. WILLIAM A. DAVIS, Baltimore, Md., has been appointed assistant instructor in histology and biology at the Baltimore Medical College. Dr. Davis has been assistant demonstrator of anatomy there for several seasons, being also engaged in practice.

DR. PROCTOR, Kamloops, B. C., is stirring up that town to a better and more efficient sewerage system. A system of cesspools is being constructed there, and he advocates some system of inspection as to where these are to be placed and how they are to be built.

THE AMSTERDAM Congress appointed an international committee on obstetric nomenclature, including Trub, Bar, La Torre, Rapin, Queirel, De Rein, Davis, Edwards, Simpson and Freund. Bar is to report to the obstetric section at the International Congress of 1900.

A NEW departure has been made in the Baltimore Medical College, in the adoption of physical instruction and athletics. Dietrich Stolte, formerly of the Bangor (Me.) Training School, has been elected physical instructor, and a gymnasium will be secured, and football and other teams organized.

ACCORDING to the *Argonaut*, a wealthy Russian named Astroff, who recently died, left (1,000,000 roubles) \$500,000 toward the foundation of a university for women in Moscow, to comprise a mathematic, scientific, and medical faculty. The Municipal Council of Moscow

¹ Practitioner, September, 1899, p. 278.

has voted an annual grant of (3000 roubles) \$1500 to the institution.

COUNT K. BRANICKI, Warsaw, has donated an estate and over two hundred thousand roubles in money to found an establishment for the shelter of incurable and cancer patients, with a further endowment of twelve thousand roubles a year, according to *St. Petersburg Med. Week.*, September 9.

IT WILL BE a year October 23 since young Dr. Mueller lost his life in the "laboratory plague epidemic in Vienna." An imposing memorial to him will be unveiled on that date, in the grounds of the General Hospital opposite Nothnagel's clinic, the expenses defrayed by subscriptions from the profession.

AT THE FIFTIETH anniversary of the Woman's Medical College, Philadelphia, to be held next spring, an interesting feature will be the presentation of a portrait of the late Dr. Ann Preston, who was a member of the first graduating class, and subsequently of the college faculty, and the first woman to hold the office of Dean.

A RECENTLY graduated French M.D. is the Reverend Dr. Migot, pastor of a large protestant parish in the Faubourg Saint-Antoine, Paris. He replied to the question whether he were going to give up the cure of souls for the cure of the body, that there is no antagonism between them, and that he intends to practice both.

ST. JOHN, N. B., has received word from the Minister of Marine and Fisheries, that the marine hospital of that city will be handed over to the civic authorities, immediately, for the purpose of a home for incurables. In connection with this, Mr. Ellis, M. P., and Dr. Walker, have been sent to Toronto to investigate the working of a similar institution in that city.

THE FOLLOWING changes in the faculty of the Maryland Medical College, Baltimore, are announced: Richard L. McNear, associate professor of histology, pathology and bacteriology; S. Griffith Davis, associate professor of anatomy and clinical surgery; J. T. Burkhalter, associate demonstrator of anatomy; Alex. McKee, demonstrator of histology and pathology.

EVER SINCE the microbe of bubonic plague was discovered, the Paris Institut Pasteur has been studying and producing the antipneumonic serum in readiness for an emergency, and Metchnikoff informally states that sufficient is on hand to supply the needs of Europe for the moment, without encroaching on the reserve for home use. Its efficacy is well established.

AT A meeting of the New York State Board of Health, held in New York City, September 22, resolutions were adopted approving of the establishment of special hospitals for tuberculosis, in connection with large cities, and urging the state legislature to enact the necessary legal measures for the organization and maintenance of such institutions under municipal control.

THE NEW Institut de Biologie, at Paris, will be in operation by the end of the year, another memorial to Baroness Hirsch, who presented nearly a half million for the purpose, says *Gaz. Med. de Paris*. It is built in the same style as the adjoining Institut Pasteur, but is much more extensive, reaching from the rue Dutot to the rue de Vaugirard, and containing a large amphitheater and a series of vast laboratories.

PHILADELPHIA begins to take hope in its conquest of bribed aldermen, ignominious politics, and foul water, with which it has been afflicted for so many years. After long months of waiting, the mayor has been furnished with the report of the experts, recommending that sand

filtration be instituted. It is hoped Councils will recommend the passage of an ordinance providing for a loan of \$12,000,000 necessary for sand filtration.

THE COLLEGE OF PHYSICIANS AND SURGEONS, Baltimore, will reopen October 2, with the extensive improvements costing \$100,000 nearly completed. The old college building has given place to a modern one, and there will be a house-warming at the opening of the course. The two new members of the faculty are Dr. Wm. F. Lockwood, chair of therapeutics, and Dr. L. R. Trimble, anatomy.

FOR SOME time past rabies has been very prevalent in Erie County, N. Y., and on September 19 the State Commissioner of Agriculture placed the entire county under quarantine. In the notice promulgated, he warns all persons to seclude, for a period of sixty days, in or on the premises where they are kept, all dogs and other domestic animals which are susceptible to the disease, and which may in any way have been exposed to it.

JOHN McCRAE, B.A., M.B., late fellow in biology at Toronto University, and sometime resident physician on the staff of the general hospital of the same city, has been appointed to the research and teaching fellowship in pathology at McGill University, Montreal. He was graduated in 1896 as gold medalist from Toronto University, and immediately became resident physician at the Garrett Hospital for Sick Children, Mount Airy, Md.

ACCORDING to the *Medical News*, September 23, there is a likelihood of a breaking down of the quinin trust organized by German manufacturers. This trust had its culmination through a movement said to have been started recently by leading cinchona planters of Java for the purpose of keeping the raw material out of the hands of the syndicate of manufacturers. There seems moreover to be no good reason why the United States should not get both the cinchona bark and the sulphate of quinin direct from Java, and thus avoid the trust.

IT IS stated that two druggists of York, Pa., recently entered into a lively competition regarding the sale of morphin, and one of them offered the drug as low as 15 grains for 10 cents. As a result of the increased consumption, at the low price, many young men have become addicted to the habit. The local press states that there are 100 habitués. A crusade has been made against the sale of the drug, owing to the death of one of the prominent young men of the town, which followed a hypodermic injection administered by a friend.

THE PROSPECT of San Francisco at last getting a new City and County Hospital seems good. The Board of Supervisors has signified its willingness to grant an initial appropriation of \$50,000, and the Board of Health is considering the question of plans. Judge Hunt, of the superior court, has decided that under the existing statutes the Board of Health may appoint as many assistants as in its judgment are necessary, and that the auditor will have to audit the bills. Consequently we may expect to see the merry quarantine war once more on the carpet, on the first good opportunity.

ACCORDING to the *Gazzetta degli Ospedale* (Milan, September 12), a number of cases of the plague have occurred in France, at Marseilles, Havre, Bordeaux and even at Paris, and refugees constantly arriving from Egypt and India are a constant menace, especially traveling variety shows, etc., which, finding no audiences in the infected regions, are all flocking to Paris. It concludes: "The efforts to keep the secret have been enormous and

have been crowned with success to date, the French Government proclaiming that the public health is excellent, but the army maneuvers in the West have been suspended and tourists are rapidly leaving Paris."

THE ONE HUNDRED AND FORTY-EIGHTH annual report of the Board of Managers of the Pennsylvania Hospital, Philadelphia, issued during the week just passed, reviews the part taken by this institution in the relief of soldiers treated during the late war, the total number treated being 326. To meet the increased attendance required in the additional wards, all of the medical staff offered their services. The number of resident physicians, only four four years ago, has now been increased to eight. Since the foundation, in 1751, there have been 143,788 patients admitted to the wards, of whom 99,887 were supported at the expense of the Hospital. Since the reorganization of the out-patient department, in 1872, 187,112 out-patients have been treated, making 713,874 visits.

THE LIBRARY of the medical department of the University of California is now properly housed, properly cared for, and is being rapidly catalogued and extensively indexed. It already contains some 2000 bound volumes, including complete files of many journals, such as *Virehow's Archiv*, *Schmidt's Jahrbuch*, the *Lancet*, etc., and a large and valuable collection of pamphlets, over 6000 in number. The librarian, Dr. Philip Mills Jones, respectfully requests that books, pamphlets, journals, etc., may be sent to the library; proper recognition will be made at once and the material will be well looked after. If necessary, and where no provision is made for transportation, parcels may be sent collect. Address the library of the medical department, University of California, San Francisco.

AGNEW'S INSANE ASYLUM, California, is having a sort of two-ring circus. Dr. Sponogle, who was dismissed from the position of superintendent, as previously noted in the JOURNAL, now refuses to give up the command to his regularly, or as he claims, "irregularly appointed" successor. There are, therefore, now "two superintendents" at the asylum, both giving orders, both signing papers, and both, quite amicably, carrying on the business of the institution. The courts are being kept busy with the legal difficulties of the superintendent, or the ex-superintendent, and the Board of Trustees; an injunction was issued, has been argued and dismissed, but Dr. Sponogle still refuses to be dispossessed and will not give up the keys. As soon as the present crisis no longer demands his attention, he says, he intends to file the \$100,000 damage suit against the governor.

CALMETTE and Salimbeni, officially delegated by the Paris authorities to study the plague at Oporto, confirm Jorge's diagnosis and the extreme virulence of the germs. They were inoculated with preventive injections of anti-plague serum before starting, and report that the three cases they have treated with the serum are all convalescing. In a communication to the Paris lay press (*Figaro*, September 11), they state that the epidemic may last months, or even years, at Oporto, without increasing in intensity. They claim that the plague should be regarded as an infectious disease propagated by certain conditions of poverty and filth, the same as typhoid fever by contaminated water. There have been sixty-four cases in Oporto, all among the working classes, with twenty-six deaths, to September 9. The unsanitary conditions, lack of sewers, etc., invite almost any disease. All the members of the profession, local and foreign, denounce the sanitary cordon around the city as ineffectual and ill-advised, a barbarous measure resulting only in

increasing the financial distress and famine in the city and thus fanning the flame of infection.

Correspondence.

The Government Hospital for the Insane.

BRIDGEWATER, MASS., Sept. 19, 1899.

To the Editor:—In the JOURNAL of September 2, an unsigned letter was published, under the above heading, which, for fairness' sake, I wish to review. The ostensible object of the letter was to express condemnation of a "vicious" system of appointment, which, according to the writer, secures incompetent men as chief executives of insane asylums.

If the writer's premises were correct, if it were a fact, that "few of them (superintendents) before appointment, have had either practical or theoretic experiences in the treatment of mental or nervous disease," he would deserve the thanks of the profession generally, and particularly of those assistant physicians who are doing painstaking medical work in the hospitals for the insane, for his so-called "arraignment" of their chiefs. But because his premises are only true in exceptional cases, his conclusions are invalid.

A brief letter is sufficient to formulate a long list of aspersive propositions reflecting on other physicians, if no attempt to produce proof is made. If it is counted ethical and honorable, among specialists, to publish unsigned letters extolling their own class and deprecating others, it may harmonize with the same sense of "judicial fairness" to leave the burden of proof on the "arraigned."

It is fair to assume that every physician giving his energy and his best days to the care of the insane has a natural regard for the respect and good-will of his brother physicians. It ought to be remembered that the young man who begins his professional life as a junior assistant in a hospital for the insane is as well qualified as he who enters on any other line of medical work. In New York, and some other states, he has been the successful candidate in a rigid competitive examination. In other states he is chosen from the best available material, and is promoted according to experience and competency, as vacancies occur. His duties are more nearly akin to that of the general practitioner than to that of any specialist, because of the fact that the symptom-complex we call insanity is as often dependent on, or aggravated by, disease of the digestive, respiratory or reproductive system, that to treat mental alienation successfully, means to intelligently treat all the diseases to which human flesh is heir.

The asylum physician, as a rule, is well acquainted with such standard authors as Gowers, Dana, Starr, Spitzka and Clouston, and is seen fairly well posted in general medicine. He depends for his reputation, limited as it may be, on devoting himself to the many unfortunates who look to him for daily cheer, as well as relief from bodily ills.

Experience has proved that the natural rule has been most successful, that the best superintendents have been those who have served from junior assistant physicians to assistant superintendents. Departures from this common rule are becoming less frequent. When your correspondent asserts that "no one ever connected with an insane asylum has made any important discovery regarding the brain and nervous system, he echoes the personal opinions of a prominent neurologist, from whose public address, a few years ago, he presumably gets his cue. As "important discovery" is a relative phrase, the ungracious allegation can not be met in positive terms.

When he seeks to make the general profession believe, by insinuation, that the representative superintendent is capable of telling the court, that "there is no such thing as nocturnal epilepsy; that quinia has no effect on the brain; that heredity is not a factor in insanity, etc.," we wonder what considerations could induce an honorable physician to adopt such methods. If he ever knew a superintendent to so testify, would not every impulse of fairness and honor suggest that it be pointed out as an anomaly, rather than representative of the medical knowledge of the asylum physician?

Does he not know that nearly every insane hospital report emphasizes the importance of heredity as a factor in insanity,

and that "hysterical insanity" will be found in the classified list of forms of mental alienation in almost every case?

The truth is, psychiatry, as an art must include the science of economics, as well as the science of neuropathology. It has advanced by a process of evolution, rather than by startling discoveries. It is no dishonor to psychiatry that it must utilize, to the best advantage, the fruits of the field, water, fresh air and sunlight, nor does it reflect to the disadvantage of the asylum superintendent that, after serving several years as assistant physician, he delegates the bedside attendance, the prescribing of drugs, the examination of urine, blood and sputum to the younger men; to assume the duties of executive director and consultant.

To maintain a healthy discipline, to wisely select department heads, to protect the tax-payers from wasteful extravagance; to encourage the scientific efforts of the younger medical men; to follow the varying mental condition of the acute cases admitted, and to defend the interests of the insane against ward politicians, are not all purely medical functions, it is true, yet hygiene and preventive medicine are such important elements of the whole, that one is not the less a physician if he performs these manifold duties well.

C. A. DREW, M.D.

"A Possible Check to Quackery."

WASHINGTON, D.C., Sept. 19, 1899.

To the Editor:—I have the honor to acknowledge the receipt of your letter of the 31st ult., inclosing a newspaper slip relative to the liability to the internal revenue stamp tax of remedies furnished to patients, by physicians and companies who advertise in the public prints their ability to cure the various diseases incident to the human body, and requesting to be fully informed as to the rulings of this office on the subject.

In reply I inclose you a copy of Circular 501 Revised, dated Jan. 24, 1899, containing the regulations of this office as to the liability of medicinal preparations to the stamp tax under Schedule B, Act of June 13, 1898. On page 5 of said regulations will be found a ruling that the tax is also imposed on the following:

All mixtures or prescriptions by whomsoever sold, the demand for which is created by circulars, circular letters, or public advertisements, and which by reason of such solicitation pass through the mails or express office to the consumer. This includes preparations made by physicians or other persons who seek patronage by post-office or by printed circulars or advertisement, or who solicit the afflicted by means of classified lists of afflicted persons.

This office having been reliably informed that the method indicated above, of soliciting the patronage of the sick and afflicted, was being extensively employed throughout the country by physicians who failed to stamp the remedies furnished, the attention of collectors and revenue agents was recently called to the matter with a view to a more thorough enforcement of the law.

The only difficulty in enforcing the law in this respect has arisen from the difference in the manner employed by the advertising physicians in collecting the amount charged for medicines.

In the first place, it must be stated that this office does not assume to tax in any manner the sum received for professional services by any physician.

Among the physicians advertising as above indicated, there appear to be three methods of making charges, as follows: 1. A specific charge is made for services and a specific charge is made for the medicines. The case presents no difficulties, as the medicines must be stamped according to the amount charged for them—unless manifestly and intentionally inadequate—and no account made of the services. 2. Where nothing is charged for the services, and the only charge is made for the medicines. In this case the medicines are to be stamped according to the price fixed by the physicians. 3. Where the advertising physicians profess to furnish medicines free to patients and only charge for advice. In such a case this office rules that payment for the value of the medicines is included in the sum charged for advice. The amount charged for the medicines can be segregated from the amount charged for advice by the physician making the charges, if he so desires, but if in any case the advertising physician refuses to separate the

charges, the whole amount charged will be estimated as the price of the medicines, and the tax will be computed accordingly, under the authority conferred on the Commissioner of Internal Revenue by the provisions of Sec. 3437, Revised Statutes of the United States.

In conclusion I will state that where an advertising physician professes only to give advice in regard to the treatment of diseases and furnishes no medicines or remedies, either directly or indirectly, no tax accrues under the Internal Revenue Laws.

Respectfully,
G. W. WILSON,
Commissioner.

See JOURNAL, September 16, p. 738.

Gall-Stones.

NEW YORK CITY, Sept. 15, 1899.

To the Editor:—The enclosed tabular statement of my operations on the common-bile duct has been omitted from my article on "Gall-stones," published in the JOURNAL of September 16.

Age.	Date.	Gall-Bladder.	Calculi.	Duct Sutured.	Leakage.	Result.
1. Mrs. J. M. 42	Feb. 19, 1885.	Thickened, Size 1 large and 2 small.	Size 1 large and 2 small.	Yes.	None.	Recovery.
2. Mrs. B. B. 37	May 1, 1885.	Thickened and shrunken.	1 large.	Yes.	Yes.	Died fourth day. Pneumonia.
3. Mrs. E. H. S. 37	Oct. 27, 1895.	Distended.	1 large.	Yes.	None.	Recovery. At time of operation patient was very weak.
4. Mrs. T. L. 41	Feb. 18, 1897.	Distended.	1 large.	Yes.	For 18 days.	Recovery. Patient died of an abscess of the neck. She did not abort.
5. Mrs. R. H. 50	May 29, 1897.	Thickened and shrunken.	2 large.	Yes.	Slight for 31 days.	Recovery.
6. Mrs. E. D. 60	Jan. 18, 1898.	Thickened and shrunken.	3 large.	Yes.	Slight for 45 days.	Recovery.
7. Mr. P. D. 60	Jan. 18, 1898.	Thickened and shrunken.	2 large.	Yes.	For 22 days.	Died on second day of pneumonia.
8. Mrs. E. J. 32	May 19, 1898.	Thickened and shrunken.	Size 1 very large.	Yes.	For 15 days.	Recovery.
9. Mrs. N. 59	Aug. 10, 1898.	Thickened and shrunken.	3 large.	Yes.	For 15 days.	Recovery.

CHOLEDOCHOTOMIES.

This omission occurred because of failure to correct the proof, owing to my absence. Will you kindly publish the table and oblige.
Yours, very truly,
A. J. McCOSH, M.D.

Canada.

(From Our Regular Correspondent.)

TORONTO, Sept. 23, 1899.

ONTARIO'S HEALTH IS BAD.

The Provincial Health Board has just issued its regular monthly bulletin, which shows that there were in the Province no less than 2069 deaths recorded in the month of August, the returns being derived from over 75 per cent. of the total population. This shows an increase of 426 over the preceding month of July. Deaths from typhoid fever and whooping-cough are more than for any month during the last four years. In Aug-

ust, 54 persons died from typhoid fever, while in 1896, for the same month, the deaths were 46; in 1897, 22; in 1898, 34. Fifteen deaths are reported from whooping-cough, 3 more than for the corresponding month of last year. The total number from contagious diseases is 269, 59 more than in July; of these, 171 were due to tuberculosis. The drouth of last month has had a direct effect in the production of the typhoid cases, the wells having become dried up, and the drinking water as a consequence rendered impure. The recent rains have exercised beneficial effects noticeable in a reduction of the disease.

JUBILEE HOSPITAL, VICTORIA, B. C.

The Board of Directors of this institution met on the 11th inst. On January 14, last, a committee was appointed to devise ways and means for the erection and maintenance of a children's ward, a maternity ward, a residence for the medical officer, increased accommodation for the nurses, the completion of a sewerage system, the draining and beautifying of the hospital grounds and the promoting of such other necessary adjuncts, with the adoption of modern appliances, as would place this institution in the van of similar hospitals. This committee reported at length at the aforesaid meeting; and the report was handed over to the printing committee, to be combined with the annual report of the Board. It further suggested that the government grant should be doubled, and this was strongly supported by many of the members of the Board, as they considered that the hospital was more provincial in its character and work than a mere local civic institution. The medical health officer, Dr. Hasell, reported that the daily average of patients was 42.35, the total days' stay was 1373, and the average cost \$1.28. His Excellency, G. Digby Barker, C. B., commander-in-chief and governor of the Bermudas, wrote thanking the authorities for the excellent treatment Mrs. Barker had received there; and enclosed his check for \$100, to be applied to the women's auxiliary fund.

MORTALITY FROM INFANTILE DIARRHEA.

Winnipeg is congratulating herself on the fact that the mortality this past summer has not been so great as in previous years. Last winter the question of a pure milk-supply was agitated, with the result that the Copenhagen system was adopted to a considerable extent, and the resulting decrease in infant mortality has proven the wisdom of the agitation. The city further calls on the authorities to enforce the by-laws with regard to milk inspection, etc.

As regards Toronto, in 1897, for example, 31.23 per cent. of all deaths were under 1 year, and 5.15 per cent. of all occurred from diarrheas, under 1 year. The total number of deaths from diarrheas under 1 year was 161, out of 977 deaths all told, i. e., 16.48 per cent. These figures compare very favorably with those of the large American cities. A perusal of a table of figures prepared by the registrar-general's department shows that July, August and September are notoriously bad months, mostly for those in the first year of their existence. From 1894 to 1898, inclusive, the total number of deaths in these three months was as follows: July, 278; August, 273; September, 156. The totals in the other months were as follows: January, 1; February, 8; March, 4; April, 8; May, 11; June, 45; October, 61; November, 13; December, 15. Inspection of the table as regards age is equally interesting: First year, in 1897, 173; in 1897, 161; in 1896, 150; in 1895, 178; in 1894, 136; second year, in 1898, 9; in 1897, 10; in 1896, 0; in 1895, 0; in 1894, 0; third year, in 1898, 1; in 1897, 1; in 1896, 9; in 1895, 18; in 1894, 26.

As regards the whole province of Ontario, the total number of deaths from all causes—still keeping to the same year, 1897—was 25,307; and of these, 1082 were due to cholera infantum and infant diarrheas, i. e., 1 in every 25 deaths in Ontario was due to this disease. Commencing with January, consecutively, these are the numbers: 13, 18, 14, 13, 12, 52, 166, 338, 293, 103, 25, 18. By ages: first year, 925; second year, 121; third year, 11; fourth year, 25. Since 1897, the Health Department of Ontario has had the Bertillon system in use, and it has proved eminently satisfactory.

THE MEDICAL ALLIANCE OF CANADA.

This "association," "institution" or "concern" has been and is at the present time exploiting the profession and the general public in Montreal, soliciting on all sides for the people to enroll themselves in its membership. It claims to be "a con-

clave of physicians and surgeons organized for the purpose of supplying medical attendance and medicines in sickness or accidents for a small weekly investment." Certain inducements are held out to the physician if he will only become a member of the society: 1. The physician shall receive at least one dollar for every visit paid to every member of the alliance. 2. He will still have the privilege of attending his own private patients—provided they, too, are willing to become members of the society—the members being allowed to select any doctor connected with the society, to attend them. 3. As there are many persons joining, who have no regular physician, these individuals will become patients of the various doctors connected with the alliance. 4. The principle on which the physician is paid for his services is completely the opposite to the ordinary benefit society and free from the objections arising from that system. Now, what do these people offer the public to join? "For the small sum of 10 cents, weekly, they will be entitled to call in any of the physicians or surgeons of the alliance at any time for the slightest cause," and the doctor "will supply the necessary medicines free of charge." When ten years have elapsed each member will receive back \$52, thus getting medical attendance and medicine all that time for nothing. Here is a paragraph, taken from the agreement between the society and the doctor, who is to become a member: "For and in consideration of such services the first party (the alliance) agrees to compensate the said second party (the doctor) as follows: To place in a fund to be known as the "Medical Expense Fund" the sum of 12 cents, monthly, for each and every member entitled to the above mentioned attendance and medicines as shown by the books of the alliance, and to divide the sum total (monthly) by the total number of visits made and reported by the physicians of the district, which division will show the actual amount due each physician for each call made; but in no case shall any physician receive an amount in excess of two dollars for each house-visit and one dollar for each office call (which amount will include the cost of medicines furnished), and the excess, if any, will be carried over to the succeeding month; and if, on the first day of January of each year there still remains a surplus, the same will be divided equally among all the physicians employed by the alliance *pro rata* to the number of calls reported during the preceding year." The following is a paragraph relating to an ordinary member: "In consideration of the prompt payment of 10 cents weekly, John Smith shall be entitled to medical attendance and medicines from any of the physicians of the alliance, in case of sickness or accident of any kind except chronic or venereal diseases or diseases not common to both sexes. And in further consideration of the prompt payment of the amount above mentioned for a period of or exceeding ten years, the said member will upon surrender of this book at the office of the company be entitled to a sum in cash not exceeding the amount stated in the following 'table of values' (\$52 at the end of ten years) as his or her proportion of the profits of the alliance." When any member of the profession in Canada is approached by the agents of this alliance, they should be careful to read the following on the reverse side of the contract: "Failure to make payments for thirty days will cause the agreement to be lapsed, void and of no effect." If on joining, the physician gets dissatisfied with the affair, he can terminate his connection at any time under the following ambiguous rule: "This agreement will terminate January 1, —, or may at any time be terminated by the mutual consent of the parties thereto." It will behoove the profession in Canada to make a careful examination of the whole subject before they allow themselves to be duped into becoming connected with any such undertaking. The *Montreal Medical Journal* for September gives a clear and clever criticism of the whole affair.

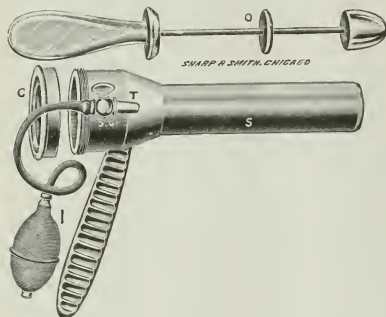
New Instrument.

INFLATING RECTAL SPECULA.

BY J. RAWSON PENNINGTON, M.D.
CHICAGO.

The various rectal specula at my command, together with the advantages of atmospheric pressure not being adequate in many cases to inflate the bowel sufficiently to obtain a

satisfactory inspection, I have devised a set of inflating rectal instruments, and have demonstrated their superiority in investigating the lower intestinal tract. All of the specula in the practical set have a common diameter of 21 mm., except the anoscope, which is conical, being 30 mm. in diameter at the junction of the flange and cylinder. Its cylinder is 5 cm. long, that of the proctoscope 12 cm. The distinctive features are the cap (C) and the tube (T) for connecting the insufflator (I).



Technique.—The obturator (O), being placed in the speculum (S), is warmed and well coated with vaselin. When introduced into the bowel, the obturator is withdrawn and the cap (C) thoroughly screwed on the flange. The nozzle of the insufflator (I) is then pushed firmly into the tube (T). By compressing the bulb and, at the same time, with the aid of reflected light, looking through the glass window in the cap, you will notice the bowel becoming distended, when it can be thoroughly inspected and examined. The entire colon may be inflated for diagnostic purposes if desired. A part, only, of the air escapes on removal of the cap, the bowel remaining more or less distended. These instruments were manufactured for me by Sharp & Smith, Chicago.

Deaths and Obituaries.

G. A. HENDRICKS, M.D., professor of anatomy in the University of Minnesota, died of acute Bright's disease, September 24, in Minneapolis. The Doctor went to Minneapolis in 1889, from the University of Michigan, where he had been an assistant in the department of anatomy.

WILLIAM HEMBEL TAGGART, M.D., Reading, Pa., died September 20, aged 70 years. Dr. Taggart was born in Winchester, Va., July 15, 1830, and graduated from the University of Pennsylvania in 1849, when he became resident physician to the Philadelphia Hospital, where he remained one year, subsequently finishing in the hospitals of Paris. In 1857 he was elected to the chair of materia medica and therapeutics in the Philadelphia College of Medicine, and in 1859 was appointed to the same chair in the Pennsylvania Medical College. At the outbreak of the Civil War, Dr. Taggart was appointed surgeon of the Tenth Regiment, Penn. infantry, and later surgeon of the Second Regiment, Penn. cavalry. Ill health compelled his resignation. For ten years he was surgeon of the Philadelphia City Troop, and for many years he was a member of the Philadelphia College of Physicians and of the Academy of Natural Sciences of Philadelphia.

W. H. BALTZELL, M.D., Frederick City, Md., died of heart disease on September 12, at the age of 67 years. The Doctor was a graduate of the University of Pennsylvania, class of

1854, and in 1855 practiced in Chicago, but returned to Maryland on the breaking out of the Civil War.

L. L. BENNETT, M.D., Harpersfield, Ohio, died September 17. . . . GEORGE M. BUTLER, M.D., Wellsburg, Va., September 12, aged 77 years. . . . E. P. CARTER, M.D., Orangeville, Ind., September 17. . . . RUDOLPH HANSEN, M.D., Woodstock, Ill., September 15. . . . C. K. HARRIS, M.D., Iager, W. Va., September 19. . . . E. P. HENDERSON, M.D., Zanesville, Ohio, September 12, aged 42 years. . . . H. C. HUBBARD, M.D., Bloomington, Ill., September 24, aged 53 years. . . . JOHN M. McNULTY, M.D., Fort Dodge, Iowa, September 14, aged 75 years. . . . HENRY NORTON PORTER, M.D., Washington, D. C., September 12. . . . EDWARD L. REEVES, M.D., Paulsboro, N. J., September 21, aged 68 years. . . . J. C. ROBERTSON, M.D., Council Bluffs, Iowa, September 12, aged 54 years. . . . GEORGE WOODWARD, M.D., Springfield, Ill., September 18, aged 25 years.

DEATHS ABROAD.

K. B. BRUHL, Graz, died recently in his 80th year. He had been professor at Craeow and Vienna, and leaves several important works on comparative anatomy. . . . Professor Binaud of Bordeaux is dead at the age of 39 years.

Miscellany.

Cemetery for Pets.—A cemetery for domestic pets has been established in Paris, on a small island in the Seine. A young man appears at the door, in response to a telephone call, with a suitable casket for the defunct pet and transports it to the cemetery.

Portrait Busts From the Stone Age.—An interesting experiment is reported by Professor Kollmann of Basle, who took a cast of a female skull dating from the stone age, and had a sculptor model the soft parts over it. The bust thus produced scarcely differs from the young women of Switzerland of the present day. Professor Merkel of Göttingen also reports similar experiments with skulls of a later age. The resemblance to modern types is most striking.

Hemorrhage After Operations on Biliary Passages.—Weiss reports a couple of cases of sheet hemorrhage or hemothosis after cholecystostomy, in which no wound nor rupture of a vessel could be found to explain the hemorrhage. From his experience he concludes that the surgeon must examine the urine, etc., to determine the condition of the liver function, and not interfere in case it is entirely compromised.—*Semaine Med.*, September 6.

Temporary Elastic Ligature of Abdominal Aorta.—Faure highly recommends this measure as a means of provisional hemostasis in the course of abdominal operations threatening excessive hemorrhage from extremely vascular tumors, etc., says the *Revue d'Gen.*, August. It is especially simple and effective when the pelvis is elevated. He cites several instances in which death would certainly have occurred on the table if he had not at once sought and applied the temporary ligature on the aorta.

Mercury Bath for Massage of the Hand.—Massage can not usually be borne in gouty arthritis, although it would prove as useful in this as in all other chronic arthropathies. Professor Rindfleisch of Würzburg (*S. u. Med.*, September 6) found by experience with himself, that plunging the hand or part affected in a vessel filled with mercury produced a gentle, even pressure to a certain degree resembling massage, which caused the rapid disappearance of the tumefaction of the joints, especially in chiroagra. Moving the hand to and fro augments the massage action of the mercury.

Goethe as an Anatomist.—Galen noted an intermaxillary bone in animals, and also ascribed them to man, but centuries later Camper claimed that the lack of these bones is an es-

sentinal mark of distinction between man and animals, especially the monkey. Goethe revived the discussion and after considerable research compelled the recognition of the site of the incisors as rudimentary intermaxillary bones. He also tried to prove that the skull is but a higher developed vertebra, and urged that the three portions of the temporal bone should be considered distinct.

Benefit of Rest After Operations on the Eye.—E. Clarke recently exhibited a set of rabbits' eyes on which operations had been performed, showing that when the animals were kept under the influence of an anesthetic for ten minutes to half an hour afterward, the wound closed and the anterior chamber re-formed very rapidly, until it was scarcely possible to distinguish the operated from the sound eye. Animals allowed to recover from the anesthetic and not killed for half to two and three-quarters hours afterward, showed evidences of irritation in the eye, turbid aqueous, etc. His experiments confirm the extreme rapidity with which the aqueous is resected under favorable conditions and the value of rigid rest.—*Clinical Journal*, August 30.

Roentgen Rays Data Wanted.—The editors of the *Fort-schritte a. d. Geb. der Roentgen-Strahlen* are collecting material for a comprehensive report on the application of the Roentgen rays, and appeal to physicians to assist them in their task, by replying to the following questions: 1. Kind of affection of skin, hair, nails, etc., and of other parts of the body, induced by the rays. 2. General constitution of patient—whether anemic, tuberculous, syphilitic, etc. 3. Severity of affection induced. 4. Termination, whether in recovery, and method of treatment followed. 5. Subjective sensations of patient. 6. Number and length of sésances. 7. After how many sésances did the first symptoms appear—redness, etc.? 8. What measures were taken to protect parts not to be exposed to the rays? 9. Which tubes were most effective, soft (low), or hard (high)? 10. Distance between tube and part to be treated. 11. Was the tube perpendicular to the part treated? 12. Length of sparks. 13. Voltage and amprage. 14. Number of interruptions per minute. 15. For what pathologic conditions were the rays employ'd? 16. Remarks.

"Ten Per Cent." Doctors.—One of the latest stories about doctors is worth repeating, even though it is not true: Some college students—not medical of course—of expensive tastes find it necessary to resort to subterfuges that often tax human ingenuity. One of these is the "10 per cent. doctor." This member of the medical fraternity is a played-out practitioner residing in the vicinity of the college, who makes a goodly sum out of students who have "blown in" their allowances long before their next is due. The student whose pocket-book has suddenly become depleted goes to this "medic," and for the consideration of 10 per cent. of the amount gets a receipt for "professional" services. This receipt is sent home and usually a remittance for that amount is received in return. One student last year had two expensive "operations," thus realizing a neat sum.

Formaldehyde in Disinfection.—The Secretary of the Illinois State Board of Health advises us concerning a series of experiments in aerial disinfection by the use of formaldehyde, carried on under the direction of Prof. T. J. Burrill, mostly at the state laboratory, the tests being made on the various lamps and generators producing formaldehyde from methyl alcohol, also on different apparatus regenerating the gas by the heating or boiling of the 40 per cent. aqueous solution. There were also experiments with the method of spraying suspended sheets with the 40 per cent. solution, this having been recommended by various state and other health departments, and being in use exclusively by some railroad companies as their means of disinfection. The results showed that all portable generators producing formaldehyde by the oxidation

of methyl alcohol were unreliable and in many instances worthless. As to surface disinfection, it was seldom accomplished, and the gas apparently possessed no penetrating power whatever, probably due to the fact that by this manner of generation but a small quantity of the alcohol is converted into formaldehyde. With the machines evolving the gas from the solution, the investigators had better success, but even here the effect on cultures was not constant, the action of the gas seemingly being entirely dependent on atmospheric and other conditions which prevailed. While sometimes complete surface disinfection was frequently not obtained, even in instances where the organisms were themselves the least tenacious of life, as with the generators using methyl alcohol, the penetrating power of the resulting gas was almost nothing.

In experiments where the vapor of formaldehyde was exposed in the room with sprayed sheets hung across it, 40 per cent. solution being used, commercially known as formalin, little better results were secured, although the tests were made in the most painstaking manner, and repeatedly during a period of three months, and were conducted in living rooms, railroad cars, and stores. Practical surface disinfection by the use of 150 c.c. of formaldehyde per 1000 cubic feet, commonly recommended and used, also gave unsatisfactory results, but where the amount of the material was considerably increased in proportion to space, where freely exposed bacteria were concerned, disinfection was possible. It was, however, necessary to use 250 to 300 c.c. per 1000 cubic feet to insure success in these experiments, 250 c.c. being the smallest amount that could be relied on to destroy dry bacteria.

The temperature of the room greatly influenced this method of disinfection, as did the relative humidity of the atmosphere and the character of the room's contents. Satisfactory results were seldom obtained with the thermometer 50 F. or below, with the gas produced by the oxidation of wood alcohol or liberated by the action of heat on the solution.

The Board has concluded that formaldehyde as employed in the tests conducted can not be relied on as an efficient germicide, as the destruction of pathogenic organisms is only accomplished under certain conditions which are not always at hand. Further investigations will be carried on, but in the meantime the Board advises physicians and local health authorities to use and recommend sulphur dioxide, 4 pounds to each 1000 cubic feet of air space, preferably burned in the presence of moisture, the time of exposure being twelve hours, longer if possible. The Board also recommends that the use of this be followed by a thorough washing with a 1/1000 solution of bichlorid, and in all cases by a liberal application of fresh air and sun-line if procurable.

Appropos to this investigation of the Board, the following from the press dispatches of September 25 is of interest, as appearing in the report of the Surgeon-General of the Marine-Hospital Service: "Passed Assistant Surgeon E. K. Sprague desires it to be distinctly understood that he does not recommend formaldehyde as a disinfectant agent on which reliance can always be placed for the treatment of articles requiring much penetration. His conclusions are as follows:

"A review of the experiments will show," he says, "that in twelve series in which the quantity of formalin mixture varied from 300 c.c. to 1000 c.c., or, taking the ratio given from one to five, and one to two, mattresses and pillows were sterilized; but in two series in which the proportion of the mixture was as one to five the mattresses and pillows were not penetrated. A critical examination of nearly all the published experiments with this agent also reveals instances in which organisms that there was every reason to expect would be killed have survived, and vice versa. It is that occasional unaccountable uncertainty of action that calls forth the warning not to attempt disinfection with formaldehyde in a case in which there is any doubt as to the results."

Queries and Minor Notes.

ARTIFICIAL GUANOS.

VANCOUVER, B. C., Sept. 18, 1899.

To the Editor:—Will you kindly inform me where I can obtain a book containing the method for analyzing artificial guanos, with special regard to fish guanos. I believe there is one generally used by the U. S. Agricultural Society, but of this I am not quite certain. F. T. U.

ANSWER:—The only recent work meeting our correspondent's needs, that occurs to us, is "Willey's Principles and Practices of Agricultural Analysis," published by the Chemical Publishing Co., Washington, Pa., 1895, the second volume of which is devoted to fertilizers. Dr. Willey is chemist of the agricultural department at Washington. There are other works on agricultural chemistry, such as Johnston's, Adie's, and Storer's, and others, but how far they contain what he wishes to know we can not say. If references to analyses and reports on the special subject of inquiry are required, we should think that they might be obtained by correspondence with the agricultural departments at Washington, D. C., or Ottawa, Canada. The agricultural department of the JOURNAL has not yet been organized, and the above reference is therefore the best we can supply.

"CLUB PRACTICE" IN EARNEST.

We have just received a letter from a physician in Canton, Ohio, which is as follows: "I enclose you a circular which is self-explanatory, and desire your opinion as to the course to be pursued by reputable physicians toward such an organization. Also, can promoters of such an organization be permitted membership in the AMERICAN MEDICAL ASSOCIATION, or in any medical society?"

The circular is a six page folder, printed in red and black, and calls attention to the great benefits to be derived from joining the "Red Cross Medical Association," which agrees to furnish physicians and medicine to its members, membership being divided into three classes, as follows: "Class A—Members of class 'A' will receive a family certificate, which calls for both surgical and medical treatment at the office of any physician on the medical staff, together with visits, when necessary at the house, both day and night in the event of sickness or accident. This includes all members of the immediate family, when not exceeding twelve in number. Cost \$1.25 per month."

We are glad to see there is to be some limit, even though that limit be not even dozen.

"Class B—Members of class 'B' will receive an individual certificate, providing for the same attention for the individual as Class 'A.' One dollar for the first month and fifty cents per month thereafter."

This will be a money-making "class" for the promoters, for \$6 a year is big pay for the ordinary individual.

"Class C." is about the same as the others except that hospital fees are paid.

From one of the "Ten Reasons Why" everybody should join this organization, we learn that "this plan has been in successful operation in other cities for years, and in case you visit or remove to such cities you will be taken care of." While the statement that "this plan has been in operation for years" is untrue, there is evidently a general movement on the part of the "promoters" to introduce it everywhere.

To our correspondent's question as to the course to be pursued by reputable physicians toward such an organization, there can be but one answer: "Unite together and stamp it out!" And now is the time to do it. There is no need for us to say why. The experience of the old world is sufficient reason if there were no other. It should be done now while it is beginning, and we should not wait to see how big and how disastrous it will be before a movement is made. And the physicians of Canton are its members of the AMERICAN MEDICAL ASSOCIATION. Surely he can not realize the evil results of the action he is taking. The temporary financial gain for those who go into such an organization, if there is even a temporary gain, will soon be lost, and with it will also be lost the respect of their fellow practitioners. We appeal to the physicians of Canton to unite and put down this worst phase of "club practice" in its incipency.

COMMERCIALISM

Our exposé in this department last week, of the woman who "cures cancer" by circular letters, trying to bribe physicians to send her patients, has resulted in an investigation being made as to her right to practice. As we expected, she holds no registrable diploma, and the Illinois State Board of Health has commenced proceedings against her for practicing illegally.

737

The Public Service.

Movements of Navy Medical Officers.—Changes in the medical corps of the U. S. Navy for the week ended Sept. 23, 1899:

P. A. Surgeon George H. Barber, detached from the *Monowahoko* on arrival at Newport, ordered to duty at the *Albatross*, September 30.

P. A. Surgeon George Rothgauer, ordered to duty at the United States naval hospital, New York.

Asst.-Surgeon M. V. Stone, detached from the *Brutus* and ordered to the Asiatic station.

Surgeon L. B. Baldwin placed on the retired list.

Asst.-Surgeon R. S. Blakeman, ordered to the naval hospital, Newport, R. I., on completion of preliminary examination for promotion.

Asst.-Surgeon J. J. Snyder, detached from the naval hospital, Newport, R. I., and ordered home to be ready for further orders.

Surgeon P. A. Lovering, detached from the recruiting rendezvous, Buffalo, N. Y., and ordered to proceed home as directed in orders of 12th.

Surgeon H. H. Marsteller, detached from the recruiting rendezvous, Buffalo, N. Y., and ordered to duty at the *Albatross*.

Surgeon G. P. Lumsden, detached from the *Richmond* and ordered to the recruiting rendezvous, Buffalo, N. Y.

Marine-Hospital Changes.—Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the U. S. Marine-Hospital Service, for the seven days ended Sept. 21, 1899.

Surgeon C. E. Banks, granted leave of absence for one day.

Surgeon C. T. Peckham, to proceed to Eagle Pass and Laredo, Texas, as inspector.

Surgeon W. P. McLaughlin, to proceed immediately to Meridian, Miss., and report by wire to Surgeon H. R. Carter at New Orleans, for special temporary duty.

P. A. Surgeon Werthebaker, leave of absence extended sixteen days on account of sickness.

Asst.-Surgeon L. D. Fries, directed to assume temporary charge of the service at Key West, Fla., relieving Asst.-Surgeon McAdam.

Asst.-Surgeon W. R. McAdam, relieved temporarily from the hospital at Key West and detailed for special duty in connection with the yellow fever epidemic at Key West.

Acting Asst.-Surgeon E. B. Hallett, granted leave of absence for one day.

Hospital Steward H. E. Davis, upon the arrival of Steward Warhank, to report at Boston, Mass.

Hospital Steward C. T. Warhank, relieved from duty at Chicago, Ill., and directed to proceed immediately to Baltimore, Md., for temporary duty and assignment to quarters.

APPOINTMENT

W. J. W. Woolgar of Ohio, to be acting assistant-surgeon for duty at Cleveland, Ohio.

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended Sept. 23, 1899:

SMALLPOX—UNITED STATES.

Massachusetts: Fall River, September 2 to 3, 1 case.

Michigan: Battle Creek, September 3 to 16, present; Maple Grove, September 8 to 16, present.

Ohio: Cincinnati, September 2 to 3, 5 cases.

Pennsylvania: Allegheny, August 19 to September 2, 2 cases.

SMALLPOX—FOREIGN.

Belgium: Antwerp, August 19 to 26, 3 cases.

Brazil: Rio de Janeiro, July 1 to 28, 54 cases, 34 deaths.

Cuba: Manzanillo, September 5, several cases.

Egypt: Cairo, August 11 to 19, 4 cases.

Greece: Athens, August 22 to September 2, 14 cases, 3 deaths.

India: Bombay, August 8 to 15, 11 cases.

Mexico: Chihuahua, August 28 to September 9, 11 deaths; Mexico, August 27 to 29, 2 cases, 6 deaths.

Russia: Moscow, August 12 to 26, 4 cases, 1 death; Odessa, August 19 to 26, 1 case, 3 deaths; St. Petersburg, August 19 to September 2, 11 cases, 4 deaths; Warsaw, August 12 to 26, 3 deaths.

Straits Settlements: Singapore, July 29 to August 5, 1 death.

YELLOW FEVER—UNITED STATES.

Florida: Key West, September 11 to 19, 164 cases, 7 deaths.

Louisiana: New Orleans, September 2 to 19, 18 cases, 2 deaths.

YELLOW FEVER—FOREIGN.

Brazil: Bahia, August 20 to September 3, 10 cases, 8 deaths.

Colombia: Barranquilla, August 12 to 26, 1 case, 1 death; Colon, August 23 to September 3, 1 case, 1 death; Panama, September 5 to 12, 8 cases, 3 deaths.

Cuba: Havana, September 3 to 10, 21 cases, 3 deaths; Nuevitas, September 2, 1 case; Santiago, August 29 to September 5, 3 cases.

Guatemala: Guatemala, September 8 to 16, 5 cases, 1 death; Tuxpan, August 29 to September 4, 2 deaths; Vera Cruz, September 1 to 14, 21 deaths.

CHOLERA.

India: Bombay, August 8 to 15, 1 death; Calcutta, July 30 to August 5, 27 deaths.

PLAGUE.

China: Hongkong, July 29 to August 5, 29 cases, 29 deaths.

Egypt: Alexandria, August 13 to 27, 5 cases, 3 deaths.

India: Bombay, August 8 to 15, 71 deaths; Calcutta, July 30 to August 5, 52 deaths.

CHANGE OF ADDRESS.

Adams, S. S., from West Springfield, N. H., to 1 Dupont Circle, Washington, D. C.

Crockett, L. A., from Bloomington to 249 N. Pennsylvania St., Indianapolis, Ind.

Cox, G. W., from Chicago, Ill., to 774 E. Congress St., Detroit, Mich.

Cooley, N. P., 757 W. Monroe St., Chicago.

Coates, W. E., from 635 W. 12th St. to W. Congress St., Chicago.

Durkin, A. C., from Joliet to 218 W. Congress St., Chicago.

Felt, R. W., from Knoxville, Ill., to Oconomowoc, Wis.

Griffin, R. A., from Rutherford to Martin, Tenn.

Harris, H. A., from 108 W. 3rd St. to 74th St., New York City.

Harris, J. E., from 918 S. 12th to 624 Catharine St., Philadelphia, Pa.

Hambley, E. C., from Maquoketa, Ia., to 238 S. Winchester Ave., Chicago.

Homer, C. P., from Chicago to Washburn, R. R. Hosp., Springfield, Ill.

Keath, J. V., from Philadelphia to Shiloh, Pa.

Leavell, H. N., from Louisville, Ky., to Amissville, Va.

LeMoyne, F., from Atlantic City, N. J., to 503 Castlemar St., Pittsburg, Pa.

Lucas, F. B., from 314 W. Madison to 700 Knox St., Peoria, Ill.

Meek, J. M., from Morgan to Falmouth, Ky.

O'Brien, M. C., from Lewiston, Me., to 161 W. 122d St., New York City.

Perry, T. M., from San Francisco, Cal., to U. S. Marine Hospital, Stapleton, N. Y.

Pfouts, I. M., from Massillon to Beach City, Ohio.

Porter, W. O., from Morton to Caldwell, Miss.

Rees, H., from Hutton N. D. to Highlandville, Mo.

Rieman, W. H., from Cape to St. Clair, Mich.

Rodenhaus, E., from Quincy to Main and 5th Sts., Lafayette, Ind.

Webb, J. A. H., from Stafford to Steward, Kan.

Woodard, B. C., from Cecil to Adel, Ga.



BINDING SECT. MAY 2 - 1966

R
15
A48
v.33
no.1
cop.2

American Medical Association
Journal

Biological
& Medical
Serials

PLEASE DO NOT REMOVE
CARDS OR SLIPS FROM THIS POCKET

UNIVERSITY OF TORONTO LIBRARY

STORAGE

